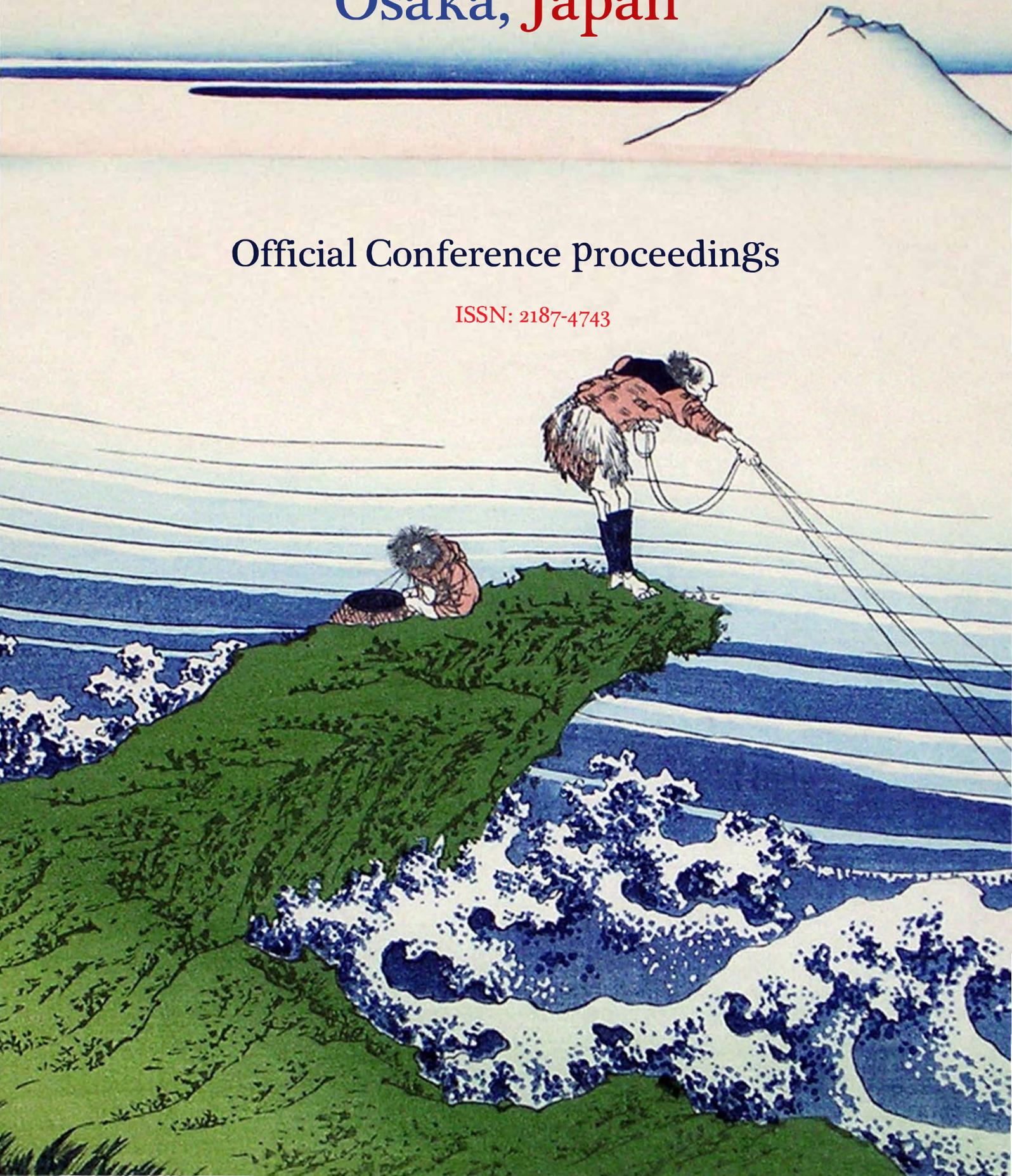


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Contents

<i>The Role of Religion in Understanding and Coping with Disaster in Indonesia</i> Rebecca Fanany Maria Avgoulas	p. 1
<i>Healthy Choices: Behavioral Environment Design and Processing Modes of Health Decisions</i> Orly Lobel On Amir	p. 20
<i>The Power of Low Self-Esteem</i> Kevin Solomons	p. 44
<i>Environmental Psychology, Urban Planning and Economics: Intersections, Crossroads and Tangents</i> Ulas Basar Gezgin	p. 50
<i>Psychology in the Decision Making of Industrialised Building Systems (IBS): A Field of Application</i> Sharifah Akmam Syed Zakaria Graham Brewer Thayaparan Gajendran	p. 68
<i>Improving Problem Solving Skills by Learning and Playing Chess Among University Students in Iran</i> Hossein Rezaabakhs	p. 79
<i>Study on Environmental Cognition and Pro-environmental Behavior of Citizens to Climate Change in Taiwan</i> Shis-Ping Lin	p. 90
<i>Emotional Intelligence and Social-Emotional Learning: An Overview</i> Anamitra Basu	p. 103
<i>Parents - Child Relationship and The Child's Inner Feelings Regarding Dependency (JAPAN)</i> Maha El-Helbawey	p. 108
<i>Impact of Group Training of How to Cope with Stress on General Health of Those who Suffer from Hepatitis B</i> Mohammad Hakami Leila Khazaee Davoud Taghvaei Seyedeh Sorour Hosseini Yazdi	p. 130
<i>Information Processing During Unconscious Thoughts in Decision Making</i> Asteria Devy Kumalasari Mark Nieuwenstein	p. 138
<i>A Comparison of Thailand and Taiwan Bottled Tea Markets Based on Consumption Values Theory</i> Fei-Fei Cheng Chin-Shan Wu Paranee Pihakaendr	p. 150

<i>Correlation Study on Anger and Academic Achievement</i> Roswiyani Roswiyani	p. 158
<i>Work Stress and Outcome of Stress Among Managers in Malaysia: A Structural Equation Modeling Analysis</i> Mandy Wong	p. 165
<i>Active or Lazy: What motivates workplace performance?</i> Anna Leybina Mergalyas M. Kashapov Amanda Hui Zhong Ong	p. 175
<i>The motives and semantic attitudes of the Chinese and Russian teachers, their influence on the emotional well-being of students</i> Alexandrova Tamara	p. 194
<i>The Relationship between Parenting Style and Self-Regulated Learning among Taiwanese Junior High School Students</i> I Chang Chen Chih-Hung Wang	p. 199
<i>The Stockholm Syndrome: A Human Dilemma Between Domestic Violence and Fear of Freedom. Retaining Insecurity rather than Finding Opportunities in Uncertainty.</i> Monty Satiadarma	p. 210
<i>What a Facebook is For - The Use of Facebook in an Undergraduate Sample</i> Fitri Abidin	p. 218
<i>Grounded Theory Analysis of "A Beautiful Mind" (Prologue)</i> Prakriti Gupta	p. 227
<i>The Differences of Impostor Phenomenon Tendencies on University Students Who Derived from Java, Madura, and Interracial Marriage</i> Visi Puspita Kamelia Dewi Purbasari Rizqy Amelia Zein	p. 243
<i>Capability building in social enterprises - The role of learning</i> Ankita Tandon	p. 255
<i>Screening and Diagnosing Children with Autism Spectrum Disorders: A Brief Literature Review</i> Tze Jui Goh Joachim Diederich Min Sung	p. 276
<i>Induction: Does Spacing Exemplars Affect Longer Term Retention?</i> Norehan Zulkipli Jennifer S. Burt John McLean Debra Bath	p. 291
<i>What is person centered planning?</i> Juliet Roudini	p. 299

Father-Child Affection in Chinese Culture

Xuan Li

Michael E. Lamb

p. 315

Late Divorce: Better Late Than Never?

Sally Dreman

Rachel Rokach

Ravit Steinmann

p. 327

The Role of Religion in Understanding and Coping with Disaster in Indonesia

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Introduction

Indonesia is no stranger to natural disaster, and recent years have seen a number of extremely serious events in several parts of the country. The most serious of these, and the one that attracted the largest amount of international attention was the Indian Ocean tsunami that took place on December 26, 2004. The tsunami devastated towns and infrastructure along the coast of several countries and resulted in an estimated 200,000 deaths (Lambourne, 2005). One of the regions hardest hit by the tsunami was the Indonesian province of Aceh, located at the northern tip of the island of Sumatra. Aceh had experienced many years of conflict between the separatist group *Gerakan Aceh Merdeka* (GAM) [Free Aceh Movement] and the Indonesian government. The tsunami presented a much more immediate problem and contributed in this way to the ending of hostilities, but Aceh, which is sometimes referred to as 'The Veranda of Mecca,' was left severely lacking in infrastructure, facilities, and manpower (see Ananta and Onn, 2007, among many others for a detailed discussion of the state of the region following the tsunami).

On September 30, 2009, an earthquake measuring 7.6 on the Richter scale struck the Indonesian province of West Sumatra, located along the west central coast of the island of Sumatra. The epicenter of the quake was in the region of Pariaman which extends north along the coast from the provincial capital of Padang. Padang, with a population of more than 700,000, suffered extreme damage due to its proximity to the epicenter of the quake. Most of this damage occurred in the central business district of the city, including the older neighborhoods dating from the Dutch period that surround the traditional market. The complete collapse of many

buildings in this part of town along with fires that resulted from damage to gas and electric lines hampered rescue efforts and complicated the search for victims. Several days after the quake, official counts recorded 1115 deaths, 1214 severe injuries, and 1688 moderate injuries (Antara, 2009a).

On October 25, 2010, West Sumatra again experienced natural disaster, a tsunami following an undersea earthquake that struck the Mentawai islands off the coast. The tsunami killed more than 400 people and left about 500 missing (Detik News, 2010). Mentawai is sparsely populated and less developed than the mainland part of the province, meaning that the disaster left the region isolated and without basic infrastructure and facilities (Tempo, 2010). The damage to infrastructure was estimated at Rp 19.16 billion, with the media commenting that this relatively modest sum was due to the fact that the area is very underdeveloped compared to the rest of the province. The impact on the local economy, which is largely based on maritime activities, and on the social environment was very much more significant (Republika, 2011).

Several years previously, the city of Yogyakarta in Central Java was close to the epicenter of an earthquake measuring 6.2 on the Richter scale and followed by some 750 aftershocks. This quake that occurred on May 26, 2006 resulted in some 5000 deaths, 9000 serious injuries, and as many as 200,000 people displaced. The earthquake resulted in damage to the archaeological site and restored temple of Prambanan and seriously disrupted economic activity in the area (ADB, 2006). The area of central Java around Yogyakarta is one of the most densely populated regions of Indonesia which resulted in very large numbers of people being affected by the quake.

In late 2010, Mount Merapi erupted in the same area, again displacing tens of thousands of people and flooding fields and villages with ash and mud (BBC, 2010). The eruption of Mount Merapi was declared a national disaster by President Susilo Bambang Yudhoyono on November 5, 2010 and led to a massive relief effort by the Indonesian government (TribunNews, 2010). The eruption, which continued on and off for several weeks, generated international interest because of the effects of volcanic ash on visibility and the resulting closure of airports in the region (Djanuarto and Rusmana, 2010).

The frequency of natural disaster in Indonesia has meant that the public has had to accommodate to the constant possibility of emergency and social disruption. It is perhaps surprising then that there has been little concern either nationally or regionally for large-scale disaster planning, although the Indian Ocean tsunami served as the impetus to modernize national disaster response capabilities through the upgrading of the *Badan Nasional Penanggulangan Bencana* [National Disaster Relief Agency] which has played a more significant role in subsequent disasters (BNPB, 2010). At the present time, a greater share of responsibility for disaster management falls to the regions, autonomous administrations at the *kabupaten* (county) and *kotamadya* (municipality) level. Regional Autonomy took effect in 2000

and devolved authority for many government functions from the central and provincial level to that of the regions¹.

The capacity to carry out physical reconstruction that might be required following a natural disaster is an important part of a society's ability to cope with these events, but its understanding of such occurrences and its means for coping with them in an emotional sense is even more significant. It is this emotional response that allows people to carry out their normal activities and manage their feelings following a catastrophic event. Religious faith and religious belief are one means of doing this and are central to the interpretation of and adaptation to disaster in Indonesia. This paper will discuss the ways in which Islam serves as a basis for the public's reaction to natural disaster and the ways in which they perceive these events in the context of their beliefs. It will focus on the communities of Aceh and West Sumatra and their experiences, but it should be noted that approximately 85% of the Indonesian population is Muslim, and reaction to and comment on natural disasters tends to come from all over the country.

Expected Response to Disaster

Guidelines and manuals produced by international aid organizations like CARE, the Red Cross, the World Health Organization, the Global Development Group, and many others tend to assume that survivors of natural disaster must be traumatized and are likely to suffer from post-traumatic stress disorder (PTSD). PTSD, which emerged as a separate disease category in the 1980s, encompasses aspects of several conditions that were observed prior to this time, including shell-shock, combat stress, and delayed stress syndrome (Young, 1995). These observations were largely based on the experience of western cultures and had been made in the context of psychiatric evaluation. It has been suggested, however, that PTSD is really a politico-social response to a particular event in certain individuals or groups (Summerfield, 1999) and does not represent a universal condition (Von Peter, 2008). In fact, application of the concept of PTSD to non-western cultures has been widely criticized (see Kleinman, 1988; Summerfield, 1999; Littlewood, 2000; Mezey and Robbins, 2001), and questions have centered specifically on whether the western, medical conceptualization of mental trauma, which is viewed as deriving from individual experience, reflects the range of social, historical, and group dynamics that shape response to events like natural disasters or political conflict (see Eisenbruch, 1991; Watters, 2001; de Jong et al, 2003; Von Peter, 2008).

¹ Regional Autonomy in Indonesia was put into place with Law No 22 (1999) on Regional Autonomy [*Undang-Undang No 22 Tahun 1999 tentang Pemerintahan Daerah*]. It established the *kabupaten* [region] and *kotamadya* [municipality] as the autonomous regions, rather than the provinces. This meant that responsibility was devolved from a highly centralized system centered on the national Ministries to a highly decentralized system with local offices and leadership at the center. At the time of the disaster described above, the regional governments were operating autonomously and hence bore first responsibility for response and rehabilitation.

Nonetheless, the western medical conceptualization of PTSD and emotional distress following natural disasters and other extreme events has tended to form the basis of international aid programs intended to ameliorate the effects of such occurrences in populations around the world and hence has often been used as a model for expected response to disaster. The World Health Organization (WHO) (2005), for example, suggests that PTSD is to be expected in those individuals who have suffered internal displacement, survived disasters, or have been affected by war, genocide or terrorism. This reflects the idea that certain events must lead to mental distress in individuals who experience them, regardless of how such distress might be expressed, because it is presupposed that there are experiences so severe that any human being would suffer trauma as a result of them. This stands in contrast to a statement made by the American Refugee Committee (2005) about the Indian Ocean tsunami that noted a high level of acceptance of the event by survivors in Indonesia which was assumed to be a result of their strong religious beliefs. Following this disaster, many of the aid agencies involved in relief efforts in Aceh found that they did not encounter the thousands of traumatized individuals they expected to see and were further confounded by disaster survivors' rejection of some of their assistance (see, for example, Telford and Cosgrove, 2007; Huda et al, 2007 as well as Perez, 2005; ABC News, 2006, among others). One important reason for the apparent unacceptability of aid was a lack of understanding about how survivors conceptualized their own mental health and the role of socio-cultural factors, especially religion, in their understanding of the events they experienced.

Religion as a Means for Coping with Disaster

Religion, in many communities, is a source of strength that provides a means for understanding and adjusting to the aftermath of disaster. It has been suggested that religious faith may allow people to evaluate their situation in a way that lessens the threatening aspects of the event. This, in turn, may allow for greater self-efficacy and facilitate individuals and communities in taking action on their own behalf (Pargament and Parks, 1995). It has also been noted that religious faith may allow those who have experienced an extreme event to more readily return to normal activities and, in this way, supports personal agency (Fischer et al, 2006). Religious belief has been associated with greater ability to adjust following a crisis (Contrada et al, 2004; Cotton et al, 2006; Koenig, 2007) as well as with a decreased incidence of symptoms of stress associated with trauma (Smith et al, 2003).

One of the mechanisms by which religion has been suggested to function in lessening the traumatic effects of disaster is in supporting 'meaning-related resilience' (Pargament and Cummings, 2010). Because religious belief holds that life has a purpose which is embodied in the precepts of the religion, the idea that individual experience, including the experience of crisis or disaster, is part of a larger plan devised by God or other supernatural deity and is, in that sense, beyond human control (Park and Folkman, 1997; Krause, 2003). This view seems to allow some individuals to perceive meaning in disaster or to find a beneficial aspect of a detrimental event. For example, a disaster may be viewed as part of God's plan and hence inherently good in some way, even if its purpose remains obscure to people

(Park and Folkman, 1997). The understanding of events as a manifestation of God's will has been found to be powerful source of strength and acceptance following traumatic events of various kinds and among adherents of different religions (see, for example, Dalal and Pande, 1988; Murphy et al, 2003; Krause et al, 2002; Carrico et al, 2006).

In the context of traumatic events, religion has been positively associated with beneficial emotional outcomes and is significant in facilitating emotional resilience (Aklin et al, 1983; Pargament et al, 1994; Koenig, 2007). Similarly, religious belief and participation in a community of faith has been shown to be negatively associated with negative affect, including anxiety, depression, anger and hostility (Pargament et al, 1994; Kendler et al 2003; Bosworth et al, 2003). It is the case that religious belief has been found, in some contexts, to be associated with negative emotional response (Pargament and Cummings, 2010), but it has been suggested that this relationship between religion and distress is a transient phenomenon. A number of longitudinal studies indicate that, overall, religious faith is frequently beneficial in coping with disaster and emotional resilience following traumatic events (Pargament et al, 1994; Koenig, 2007; Herbert et al, 2007).

In Indonesia, specifically the strongly Muslim regions of Aceh and West Sumatra, there can be no doubt that religious faith plays a positive role in supporting individual and community resilience in the face of disaster. A religious interpretation is most often applied to stressful events, and local understanding of Islam supplies the most common etiology for disaster as well as the means for adapting to its impacts. For this reason, it is necessary to understand something about the nature of Indonesian Islam and its relationship to cultural identity.

Islam in Indonesia

Throughout the Malay world, adherence to Islam is a characteristic feature of identity as a member of the ethnic groups seen as part of the Malay cultural stream. The Acehnese people are native to the northernmost part of the island of Sumatra and speak a local language that is linguistically related to Malay. They make up approximately 50% of the province's population, with the rest being drawn from the Javanese, Gayo, Alas, and other ethnic groups. In total, about 99% of the province's population is thought to be Muslim (BPS, 2009). The province's full name, *Nanggroe Aceh Darussalam*, reflects both Acehnese culture and Islamic influence, and local scenery is characterized by the presence of mosques in every settlement, large or small. Other manifestations of Islamic culture and society are easily visible and include the widespread wearing of Islamic dress, the use of Arabic script on buildings and in political and public information campaign slogans, decorative arts reminiscent of those of the Middle East, and more recently the implementation of *syariah* (Islamic) law at the local level.

The people of West Sumatra traditionally belong to the Minangkabau ethnic group that is part of the broader Malay culture. The Minangkabau make up close to 100% of the province's population of 4.8 million (BPS, 2010). While literacy in and use of *bahasa Indonesia*, Indonesia's national language, is high in the region, the people of

West Sumatra speak Minang, a language related to Malay with four distinct dialects of its own. The population is almost entirely Muslim, as adherence to Islam is part of Minangkabau ethnic identity. Within Indonesia, the province is considered to be religious, conservative in interpretation of theology, and devout in terms of practice. Islam is thought to have been first introduced to the area in the 14th century through trade with India and Aceh, located at the northern tip of the island of Sumatra. During the 15th and 16th centuries, the region was part of the Kingdom of Aceh. In the 17th century, Syekh Burhanuddin (Burhan Al-Din) (1646-92) came to Pariaman, the coastal area of West Sumatra stretching north from Padang. His teachings were very influential over the next two centuries and gave the region its reputation as a center of Islamic thought (Poesponegoro and Notosusanto, 2008). The tomb of Burhanuddin (or Tuanku Ulakan, as he is sometimes referred to locally) in Ulakan remains an important religious site today.

In recent years, both Aceh and West Sumatra have experienced a reemergence of Islamic culture that has roughly coincided with the establishment of Regional Autonomy. This phenomenon has been viewed as a response to the end of the New Order government and its uniform system of administration across the country that did not allow for much expression of differences between regions. In West Sumatra, for example, the latitude possible under Regional Autonomy has led to the reestablishment of the *nagari*² system of local administration in some places, a renewed focus on *adat* [traditional law and custom] and tradition, and an increasing role for Islam in the daily affairs of the community. Whether this corresponds to a strengthening of individual faith is difficult to measure, but there can be no doubt that outward expressions of religious observance, such as Islamic dress for women, attendance at mosques and prayer houses, the use of Islamic greetings as well as religious frameworks for public events has become much more common in West Sumatra, no doubt made possible by the homogeneous nature of the public. The election of local officials from more religious backgrounds is a notable aspect of this process, even though these individuals tend to come from the same professional backgrounds as officials during the New Order and differ from their predecessors largely in terms of their personal views on religion and religious practice. In both Aceh and West Sumatra, the passing of local regulations based on *syariah* [Islamic

² *Nagari* are traditional divisions of the region occupied by the Minangkabau people. According to *adat*, there are a number of requirements for a settlement to be considered a *nagari*. It must have a public place where the functions of governance are carried out as well as a mosque (*babalai bamusajik*); it must have members of the four major Minangkabau clans and everyone living in it must have a known heritage (*basuku banagari*); it must have a clear area for houses and other activities as well as the facilities to support people's daily occupations, such as irrigation systems (*bakorong bakampung*); it must have a system for maintaining public safety and safeguarding property (*bahuma babendang*); it must have roads and places for people to use in common (*balabuah batapian*); it must have an organized system of agriculture (*basawah baladang*); it must have customs and traditions (*bahalaman bapemedan*); and it must have a cemetery and practices for dealing with deaths (*bapandam bapusaro*) (Navis, 1984). Under the New Order government, the *nagari* were largely broken up and redivided into *desa* [villages] on the Javanese pattern. Since Regional Autonomy, local administrations have reverted to traditional boundaries in many regions.

law] has been a feature of administration under Regional Autonomy and has generated considerable comment in the national media (see, for example, *Republika*, 2009; *Kompas*, 2009; Muntoha, 2010).

Islam in Indonesia has been described as syncretic, drawing on a range of sources including older, pre-Islamic religious beliefs common in the region (see Cederroth, 1999 among others). In some parts of the nation, this aspect of the religion is taken to be a moderating influence, and religious expression in certain areas, such as in Java, is viewed as considerably less orthodox than in other parts of the world and may include a strong element of pre-Islamic belief (see, for example, Beatty, 1996). In Sumatra, however, there are several areas that are known to be religiously conservative and more fundamentalist in their views of Islam. This includes the province of West Sumatra; some parts of eastern and southern Sumatra, including the province of Riau; and of course Aceh, at the northern tip of the island. Islam seems to have come to this region with traders, was adopted peacefully by choice, rather than imposed by force, and incorporates many elements of Sufi beliefs (McAmis, 2002). Sufism (or *tasawwuf*) represents the inner, mystic dimension of the religion and places strong emphasis on hospitality (*zihkr*), ritualized acknowledgement of God (*ziarah*), and divine determinism (*takdir*) (Howell, 2001). In Aceh, for example, these elements of belief form the core of individual and group response to disaster and tragedy. An Acehnese proverbial saying derived from the Quran states that, in times of trouble, people should “hold fast to the rope of God.”³

In the context of religious interpretation of disaster, this understanding of *takdir* [fate] in combination of the attitude of *pasrah* [acceptance] seems to be most significant in shaping individual response. The local understanding of *takdir* holds that God has predetermined what must happen in the world and these events will unfold, regardless of what people do. To some individuals, the concept of *takdir* allows that they take steps to prepare for any eventuality (to make disaster response plans for example). In practice, however, this idea is often manifested in the lengths some people go to gain advance insight (often supernatural) about the arrival of potential natural disasters and much less often in terms of generic measures that might benefit the public as a whole. The 2009 earthquake in Padang did lead to some consideration being given to the use of building techniques that could withstand earthquakes and tsunamis in reconstructing some public buildings, but this was the first time the matter received serious attention, despite a long history of serious earthquakes in the region. *Pasrah*, as an attitude that accompanies an acceptance of *takdir*, suggests that whatever comes must be borne as it comes from God and will not be more than can be tolerated by the individuals in question. The understanding of *pasrah* also suggests that nothing should be done to try to ameliorate the situation. This attitude stands in contrast to *ridha*, which also requires an acceptance of the events created by God but allows the individual

³ This idea, expressed in Indonesian as *berpegang pada tali Allah* [hold onto the rope of God], appeared widely in Aceh in news and opinion reports, mosque sermons, and even blogs as the tsunami and its aftermath began to be addressed in public forums shortly following the event.

involved to take action to better the situation. The distinction between the two is not always understood by Indonesians, a fact which is sometimes noted in religious discussion in the media (see, for example, Republika, 2005). Nonetheless, it is *pasrah* that is most often mentioned in the context of the religious interpretation of disaster.

Religion as a Means for Understanding Natural Disaster

The interpretation of the public in Aceh following the Indian Ocean tsunami of 2004 was overwhelmingly religious. Almost without exception, the undersea earthquake and resulting tsunami were described as an act of God. In the west, this expression is usually used to denote a natural event over which human beings have no control and often carries the connotation that no blame can be laid on human agents for any resulting damage. To the people of Aceh, however, the idea of an act of God means something quite different because they do not perceive acts of God to be random. Instead, such events are believed to be caused deliberately for a purpose known to God but that may be deduced by humans. That is, while the people of Aceh believe that it is not possible for human beings to understand or know God's plan for them, it may be possible to discern certain aspects of God's intent and to respond to them through their religious and moral actions.

Following the tsunami, it was obvious to many people in Aceh that the disaster resulted from a laxity in their own moral and religious attitudes. To many, the evidence suggesting this was overwhelming and was easily visible in many locations where mosques had been spared when every other building around them was washed away by the tidal wave. This occurred in Banda Aceh, Lampuuk, Baet, Kaju, Meulaboh, and many others and was reported by the media across the region (see, for example, ChannelNewsAsia, 2005). Many residents who sought refuge in mosques survived the tsunami, further strengthening the idea that the disaster was a form of divine commentary on the community's religious behavior. A number of observers, including several from international aid agencies, saw a more prosaic explanation for this phenomenon, which they ascribed to the fact that mosques tended to be more strongly built because of their social importance and were frequently located at the highest point available as a sign of reverence. Survivors often accepted this judgment, saying that these facts were equally a sign of God's participation in the affairs of humans as surely it was He who caused people to build their mosques in this way and in these locations.

To many people in Aceh, the need for a divine warning in the form of a tsunami was a result of a perceived slackening of religious observance and declining moral standards that came about because of a number of factors. To many people, these included the long period of conflict between the Acehnese and the government of Indonesia which distracted the public from its religious life; a growing interest in material objects and corresponding weakening of traditional communal institutions; and the increasingly secular nature of the public sphere, possibly as a result of integration into Indonesian national culture. In other words, the tsunami was viewed as a divine pronouncement about the social change that had been observed by

many people for some time and that had accelerated in recent years. This verdict seemed to be overwhelmingly negative to the majority of those affected.

Most of survivors also believe that they are personally important to God and see the tsunami as a reasonable warning about their behavior. In this context, while they do feel the loss of loved ones, property, livelihood, and cultural institutions, they believe that this was their fate (*takdir*) and there is no point fighting God's will. It is worth noting that a similar response is often seen in religious Muslims elsewhere in Indonesia as a response to natural disasters, including in Padang as described below, in Yogyakarta, and in other locations that have been struck by natural disaster.

Interestingly, some elements of the Muslim community in Indonesia outside of Aceh also ascribed a divine origin to the tsunami and agreed that it was triggered by the behavior of the Acehnese. In this case, however, it was observed that the Acehnese were extremely arrogant about the quality of their religious observance and piety, and the tsunami had been intended as a warning from God that they should be more humble and stop placing themselves above the rest of the Indonesian Muslim community (see, for example, Miftach, 2004). Some Indonesian bloggers even suggested the reason so many young people were killed by the tsunami was because their excessive religious zeal would lead them to become terrorists in the future, and God wished to prevent this before it happened (see, for example, derkeiler.com).

The attitude these observers refer to is epitomized by one university-educated woman in Aceh who was the head of the regional branch of national women's Islamic organization. She recounts how, upon seeing a Christmas show broadcast on the Aceh affiliate of the national station TVRI, she prayed to God that he just destroy the world if Christmas programs were now being shown in Aceh. The next day the tsunami struck, and the woman and one of her daughters were trapped on the upper storey of their house. As the water rose, she became frightened and again prayed, this time asking God to stop the flood. The water eventually receded. The woman and her daughter survived, but another daughter and a number of other family members were killed. Nonetheless, this woman is certain that both her prayers were answered and feels no internal conflict over potentially being responsible for the deaths of many thousands of people in several countries. In fact, she is proud of what she sees as personal involvement in the disaster.

Generally, there was wide agreement among the public in Aceh that the tsunami had been a warning sent by God and that the appropriate response required rebuilding and reestablishing their culture and society but also introspection focusing on their own behavior and attitudes in the context of Islamic law and theology. It was this understanding that led to the rejection of foreign aid that was viewed as coming from organizations thought to have a "Christianizing" mission or that seemed to impose requirements that were incompatible with traditional social patterns and lifestyle. The issue of missionary activity (*Kristenisasi*) in Aceh has been widely discussed in Indonesia and led directly to demands by the Acehnese

public that certain aid agencies be expelled from the region (see Artawijaya et al, 2006 for complete documentation of this issue as it was discussed in the Indonesian media).

The response of the public of West Sumatra to the 2009 earthquake was similar. This part of Indonesia experiences frequent earthquakes, which in the past have not been greatly worrying to residents. Following the Indian Ocean tsunami in 2004, however, every earthquake is seen as potentially preceding a tsunami, even though the province is protected from the open ocean by a chain of islands, making it unlikely that a tsunami would reach the coast. The 2009 earthquake, however, was unusually severe and caused a great deal of physical damage to the provincial capital of Padang however. For many earthquake victims and observers, religion provided an etiology and meaning for the disaster that allowed them to accept the event and deal with its effects. In many cases, the statements made about the event, and the interpretation given to it, were indicative of an attitude of complete acceptance, often associated with Islam, at least in Indonesia.

A central concept of religious faith in West Sumatra is the attitude of *pasrah* [acceptance] towards whatever God commands. This unwavering acceptance of events and circumstances comes from the idea that God's plan for mankind is unknowable, and it would be sacrilegious to doubt or question that God's intentions are good or to suggest that God created a natural disaster for anything other than a vital reason. This attitude among members of the public was widely reported following the 2009 earthquake in a number of contexts. For example, one 52 year male survivor, when asked by a reporter about the aid that he had received, replied: "Baa juo lai, mungkin hanyo itu rasaki kami. [How else could it be, maybe this is all that is coming to us.]" (Antara, 2009b). Another news outlet reported that many members of the public had accepted their fate and had decided not to flee the city after the quake, despite widespread fears that a tsunami would follow (Antara, 2009c). This was expressed as residents being "pasrah apa yang akan tiba" [accepting of what would happen]. One middle aged man interviewed by Metro TV about his 15 year old daughter, who had been killed when the private college where she attended afterschool lessons collapsed, commented: "Riwayatnya sampai di situ saja. [Her life went only up that point.]" (Metro TV, 2009). The use of the term *riwayat* [life story] by this individual is interesting because it exemplifies the commonly held idea in West Sumatra that God has predetermined a life course for each person that they must live out and cannot change. This idea is further embodied in a number of traditional expressions and proverbs (see Fanany and Fanany, 2003).

While the usual practice in circumstances like this would be for people to conduct *sembahyang gaib* [prayers for those presumed dead when no body has been recovered; the word *gaib* means 'invisible; hidden' and is also used to refer to supernatural occurrences], and this was, in fact, done in public locations near the sites of destroyed buildings as well as privately. However, the Padang earthquake also generated a great deal of religious speculation as to its cause and nature.

These ideas spread very rapidly through the population, by word of mouth, by SMS, and on the internet in the form of e-mail as well as through postings on U-Tube and other forums.

Two aspects of the religious interpretation of the earthquake quickly came to dominate local thinking. The first of these related to the exact time of the quake which was widely reported to be exactly 17:16 Western Indonesia Time. The use of the 24 hour clock is common in Indonesia, but this time, the moment the earthquake struck was widely interpreted to be a reference to a particular Koranic verse and hence a divine warning to the public. The verse in question comes from the Al-Isra surah and reads:

Dan jika Kami hendak membinasakan suatu negeri, maka Kami perintahkan kepada orang-orang yang hidup mewah di negeri itu (supaya menaati Allah), tetapi mereka melakukan kedurhakaan dalam negeri itu, maka sudah sepantasnya berlaku terhadapnya perkataan (ketentuan Kami), kemudian Kami hancurkan negeri itu sehancur-hancurnya.

[And when We wish to destroy a nation, we command the people who are living in luxury in that nation to obey God but when they continue to betray (Us), then it is right that our will be carried out against them, and then We destroy that nation utterly.]

Later, attempts were made to connect the times of earlier natural disasters to Koranic verses in this manner with varying degrees of success. The general feeling, however, was that the universal nature of the Koran combined with people's fallibility in telling time meant that some message was always there, but people were likely to have made mistakes in recording the time of the events in question. This idea was discussed extensively by the *Gerakan Pemuda Ansor* [Ansor Youth Movement]⁴, for example, on its websites and in publications (see GP Ansor, 2009), giving it a level of respectability and scholarly insight.

The second aspect of the religious response to the 2009 earthquake related to interpretations of why such an event was deemed necessary by God. Again, a number of hypotheses circulated among the public, largely by word of mouth and on the internet. Similar to interpretations that were made about the 2004 Indian Ocean tsunami in Aceh, many people understood the quake to be punishment for laxity in religious observance, preoccupation with worldly issues, and religious hypocrisy in the community. In particular, a great deal of criticism centered on the corrupt nature of religious practice in Pariaman, where the epicentre of the quake was located, and the superstitious behavior of the population. For example, it was

⁴ The Gerakan Pemuda Ansor [Ansor Youth Movement] is a national youth movement founded in 1934 and affiliated with Nadhlatul Ulama (NU), the largest Islamic organization in Indonesia. NU has generally been considered traditional and conservative and has a membership of some 30 million, making it the largest independent Islamic organization in the world. Its long time leader, Abdurrahman Wahid, became Indonesia's president in 1999 and served until 2001 as Indonesia's first president to be elected after the resignation of President Suharto.

noted in several national forums that the people in this area were fond of religious charms and talismans, and sacred places, such as the tomb of Syekh Burhanuddin, were being used for pseudo-religious rituals asking God for favors, instead of being revered as holy places. A rumor circulated that a child who had been wearing a charm containing a verse written out by a religious scholar had been spared while those around him were killed. This led to a proliferation of similar charms, which was also criticized nationally (see, for example, Al Sofwah , 2009). The idea that the earthquake was punishment for un-Islamic behaviour was strengthened by the fact that so many western-style establishments, including most of Padang's hotels (with the city's only bars), had been destroyed. The event was generally viewed by the public as a warning, if only for "human behaviour that had crossed the line" [*perilaku manusia yang telah melampaui batas*] (Gunawan, 2009).

This religious reaction to the earthquake was more widespread and greater in intensity than reactions to earlier natural disasters had been. One reason for this may have been the severity of the damage and loss of life compared to previous quakes. Another reason might have been the fact that there had been a number of natural disasters that seemed to disproportionately strike the parts of Indonesia that are generally considered more religious and more conservative (for example, the Indian Ocean earthquake and tsunami in Aceh (2004), the subsequent earthquake measuring 8.7 on the Richter Scale in Aceh and Nias (2005); the Padang earthquake of interest here (2009); another earthquake in Aceh measuring 7.7 on the Richter Scale (2010); and a 7.7 earthquake and tsunami that devastated the Mentawai islands which are also part of West Sumatra (2010)). Despite the fact that Indonesia experienced a number of other earthquakes and natural disasters in other parts of the country during this period (such as the Yogyakarta earthquake in 2006 that caused serious damage to important archaeological sites and the eruption of Mount Merapi in the same area in October-November 2010), public discussion and speculation of a religious nature has been much more focused on the Sumatran disasters than on those elsewhere in the nation (although the recent eruption of Mount Merapi was viewed locally as having some supernatural connotations). This is likely a result of the tensions created by the shift to Regional Autonomy that brought new responsibilities to local governments but also created new concerns about the nature of government and role of religion in the public arena. This has been characterized, for example, by the use of Islamic law as a basis for local regulations in many regions, including in West Sumatra (see Hasan, 2008; Rakiko, 2010). At the same time, the increased openness following the end of the New Order government has meant that it is much more possible now to express a range of opinions, and exposure to a wide variety of ideas, practices, and beliefs is very much higher than at any time in the past.

West Sumatra, as noted, is considered religious and conservative in contrast to many other parts of the country. The Minangkabau people who make up its population pride themselves on their religious affiliation which is an integral part of

their cultural identity.⁵ The religious interpretation of events in the region has a number of different aspects. The more orthodox understanding of natural disasters as warnings or signs from God is one of these. Individuals who favor this explanation tend to be those who are concerned with the moral state of the community and with the level of religious observance. One person expressed this by stating that she was happy God had given the community a warning in the form of the earthquake because it meant He was still paying attention to them, even though their religious observance was inadequate. A second element of the religious understanding of events relates to the idea that natural disasters are largely unpredictable and seem to occur according to a schedule of their own (this likely derives from statements made by geologists and other experts often quoted in the newspapers and other media). Nonetheless, many people believe that God gives the observant ample warning of these events through signs and codes that can only be understood by those in the know. A third aspect of the religious understanding of disaster is the idea that whatever happens must simply be endured, and there is no value in trying to understand God's overall plan, even if it seems to involve the destruction of the city or death of its residents. As described above, the complete acceptance of adversity is a longstanding aspect of traditional culture viewed as having roots in religious faith.

Discussion

Religion in the parts of Indonesia where local cultures are part of the larger Malay cultural mainstream is consistently seen as providing an etiology for natural disaster as well as suggesting an appropriate response. Almost uniformly, affected members of the public in these areas believe that natural disaster serves a purpose known only to God and is part of a divine plan for them and the world that is inherently good in nature. The damage caused by these events and the hardship felt by survivors does not seem to lessen this certainty as it might in a western community where severe disaster has sometimes been observed to destroy individuals' faith (Pargament et al, 1995). By contrast, a number of disaster survivors in this part of Indonesia feel that experiencing natural disaster means that they are special to God in some way because they have been the recipient of his special attention, even though this attention is understood as a warning or reminder that their religious behavior is lacking or inadequate.

Despite this, many disaster survivors in this part of Indonesia have suffered significant loss of property and livelihood as well as the deaths of friends and family members. Religious faith certainly provides a means by which such loss can be tolerated and also suggests a cognitive strategy for dealing with the loss. There are several components of this process. The first is the idea that God will not subject an individual to a burden greater than he or she can bear. Therefore, people who have

⁵ Adherence to Islam is an important marker of Malay-ness and applies, not just to those who identify their ethnic group as Malay, but also to all those ethnicities that are culturally part of the larger Malay world. This includes the Minangkabau, the Acehnese, and many other Indonesian cultural/language communities (see Deraman, 2001, for example).

suffered some kind of disaster-related loss begin from the base assumption that they can and will recover from the loss. This certainty, reinforced by others around them who have the same belief, seems to speed their accommodation. There is no concept in this culture that grief must be expressed or any social penalty for an apparent lack of distress or concern. It is common to see people laughing and joking at funerals, for example. A person who seems to be too distressed some time after a disaster or other traumatic event may be reminded that religious faith requires that they recover their emotional balance. Second, a belief in *takdir* [fate] suggests that each person's life events are predetermined by God and cannot be altered. There are many proverbs and traditional expressions to this effect, and the idea that everyone must move through their intended experiences to a point of death is common. It is this rationale that allows people to better cope with the deaths of loved ones and with catastrophic loss of property or livelihood. Insurance against such occurrences is extremely uncommon, so loss from natural disaster often means a long a period of reliance on relatives or descent into poverty. But these are usually viewed as simply part of life's ups and downs. A common metaphor in this part of Indonesia holds that *hidup seperti roda pedati* [life is like a wagon wheel], with the individual occupying a position on the rim; sometimes one is on top, sometimes on the bottom, and one's fortune tends to rise and fall with the turning of the wheel. And third, the complementary concepts of *pasrah* [passive acceptance] and *ridha* [acceptance with action] provide a religious model of appropriate behavior in the context of adversity. The manifestation of an attitude of *pasrah* in the Malay world was observed by western colonial powers (the Dutch in Indonesia and the British in what was then Malaya) and contributed to the idea that passivity and laziness were dominant characteristics of Malay culture (see, for example, Alatas, 1977). Most people in this region seem to feel any other behavior in the face of disaster would go against religious values and would be compounding any flaws that might already exist in their faith.

These three components of religious understanding make for very high resilience in Malay communities such as those in West Sumatra and Aceh. Even the very common view that God's purpose in creating natural disasters or other calamities is as a warning or reminder to individuals and communities that their religious observance is inadequate does not seem to affect the universally held view of divine benevolence. It is unheard of for someone to express the suggestion that life is unfair, that 'good' people have been made to suffer, and so forth, along with the implied criticism of God's actions. Unlike in the west, individual and group belief in this aspect of their faith seems to be an immovable base from which their understanding of events originates. As such, religious faith continues to act as a very strong social force for resilience and as a pattern for emotional response. The concept of *pasrah* is interesting in this context because it is likely that the idea of uncomplaining acceptance of God's will makes it easier for people to be satisfied with a rather low level of government assistance following a disaster. Corruption and mismanagement are the rule in Indonesia, and people are not generally very upset by this. However, it is also the case that those in positions of authority come from the same cultural background as the victims of disaster and likely share the

same understanding of this principle. This may inadvertently account for the lack of attention given to disaster management as well as the often observed lack or urgency in restoring basic services.

This religious interpretation and etiology of natural disaster, then, most likely accounts for the unexpected (from a western point of view) condition of survivors of natural disaster in Indonesia. Western concepts of trauma, including PTSD, are outside of the framework of culturally mediated responses to disaster and do not seem to occur to Indonesian as potential effects of traumatic experience. For example, national and regional disaster relief efforts do not include counseling or social work services and tend to focus on replacing material loss, providing medical treatment for injuries, and providing food and water to make up for disruptions in distribution. The efforts of international aid agencies to offer post-trauma counseling in Aceh, in particular, tended to be met with indifference from survivors who did not understand why such services would be needed.

The view of Islam as the central feature of group identity is seen as a source of community strength and unity in this part of Indonesia. It is perhaps for this reason that people have been extremely sensitive to outside assistance following natural disasters that they view as being against Islam or coming from a Christian perspective. It is important to understand that Indonesia has five recognized religions which include Islam as well as Catholicism and Protestantism. Religious conflict has not been a feature of Indonesian history in the western part of the nation, but the public is wary of anything that might weaken this aspect of their culture and identity. This concern for cultural identity has been a feature of Regional Autonomy, largely as a response to the preceding 36 years of the New Order government under former President Suharto when religious expression tended to be suppressed in the context of national culture. Local communities, especially in the parts of Indonesia that are strongly Muslim such as Aceh and West Sumatra, view their religious heritage as a positive force for development as well as the major source of emotional resilience in the community. The preservation of this source in the form that is indigenous to the community is seen locally as vital in addressing the many social problems observed in modern Indonesian society as well as in providing a model for community response. Because almost everyone in the community is Muslim and because the understanding of the nature and meaning of religious faith is extremely homogeneous, religion provides a particularly effective means for understanding and coping with disaster and other traumatic events in this part of Indonesia.

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HEALTHY CHOICES:
REGULATORY DESIGN AND PROCESSING MODES OF HEALTH DECISIONS

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Abstract

This study is part of a large experimental project on ways in which health policy can assist individuals when grappling with data, information processing and uncertainty. The study, which has received the 2010-2011 Robert Wood Johnson Grant Award, examines questions of cognitive depletion, judgment and decision-making in several central health policy contexts. The reported findings in this article pertain to perceptions on health warnings. In an experimental setting, we show that people tend to perceive warnings of mixed side-effects – including possibilities of both mild and severe effects -- as presenting similar risks as the merely mild side-effects (and far away from their perception of the merely severe side-effect). The article argues that regulators and courts, including FDA regulations on drug warnings, should consider such effects in a range of rules and doctrines. The article also presents the growing body of cognitive depletion research and the experimental design for testing depletion in the next stages of the experimental project.

Patient Autonomy and Choice Architecture

The goal of helping people make reasonable decisions about their health, risks, and environment is a key aspect of public health policy. Behavioral research is providing new evidence that cognitive processes affect decision making, often leading to medically suboptimal conclusions. Despite the significance of this field to health policy, research in behavioral decision making as it pertains to health and medicine is still scarce. In recent years, the field of behavioral studies has had a significant impact on law and policy research. It has helped policymakers identify patterns of divergence from the rational agent model and point to ways in which law can better direct individual decision-making. At the same time, the field of behavioral economics in health policy is relatively in its infancy. In this study, we propose to research decision-making and the processing of risk in the context of health-related choices with the aim

to inform public health law and policy. At the basis of our study are understandings about the ability of regulatory design and policy to improve health and welfare through a myriad of policy tools, including regulation that moves beyond traditional command-and-control and focuses on facilitating individual judgment and choice. We seek to identify a series of mechanisms through which individuals assess and act upon information pertaining to their health and future healthy living and to propose ways in which the law can support healthier actions. In particular, we will draw on the distinction between automatic and deliberative systems, a distinction that is increasingly gaining prominence in behavioral research. Using new experimental techniques of impairing executive control resources, the study will investigate the interactions between various mechanisms that affect decisions about healthy choices and health risks and the level of processing decisions: emotion/cognition and immediate reactions/careful conscious evaluation. The research will both deepen the study of known biases through new experiments in the context of health law and develop a novel lens of the effect of cognitive depletion on perceptions of risk and healthy choices.

Individuals frequently make poor decisions about their health management. A large number of recent studies show that the ways in which individuals appraise choice alternatives has an immense influence on the choice outcome. Moreover, research indicates that context, framing, and surrounding signals heavily influence choices among alternatives.¹ The influence of these factors is even more pronounced in inter-temporal decision-making and situations of risk and uncertainty, both of which are central to health policy. For health regulators, it is of key significance to understand how individuals make decisions when contemplating probabilities of future and long-term beneficial or detrimental outcomes.

In a previous collaboration of the researchers, we developed a distinction between Type 1 biases, which are sourced in our automatic systems and stem from reflexive or intuitive

¹ For these effects in other contexts outside the health policy arena, see Amir, Ariely & Carmon (2008).

processes, and Type 2 biases, which are generated from irrationalities in the reflective system meant to override our automatic responses (Amir & Lobel 2008). We argued that cognitive errors, including decisions about the future and under conditions of uncertainty, are more readily corrected through policy when sourced in Type 1 biases. Finally, we urged for more research that would allow differentiation between distinctly different mechanisms that cause behavioral biases, including over- and under- usages of cognitive processes. Our current study proposes to examine these distinctions in concrete experimental studies that are directly designed to inform public health polices.

Combining the findings of our experimental inquiry with policy insights, the current project will contribute to the understanding on how New Governance (NG) strategies can be applied to promote health and healthier behavior. In a series of articles, Lobel (2004a; 2004b; 2005; 2006; 2008) explores the potential of a growing body of regulatory tools that can be grouped under the label New Governance and fall between command-and-control regulation and deregulated markets. NG theory views adversarial commands as potentially counterproductive. Increasingly, legislators, administrators, and courts draw on behavioral insights to direct individual choices and behavior in ways that are non-coercive. Among these softer law approaches are the design of defaults and the framing of information. Other tools include asking actors to set their own reflexive processes, self-monitoring, self-checks, reason-giving requirements, and preventative measures such as training, data collection, and continuing education. Perhaps more than any other policy field, health policy faces the challenge of assisting individuals when grappling with large quantities of data with the goal of rationally processing information pertaining to risk. Moreover, current health policy rests on the significance of individual responsibility for one's decisions and choices. While in the past, some health traditions supported doctor-patient hierarchy, today's health world is based on the widespread ethical principle of patient autonomy and informed consent (Patient Self-Determination Act of

1990). In other words, unlike some policy fields (e.g., transportation safety), health policy cannot rest on a ‘command-and-control’ principle but must aim for a deep understanding of how individuals reason and decide. For example, rather than prohibiting liability waivers or opt-out options for patients, policy makers must ensure that such waivers are administered and introduced in ways that ensure truly informed consent. In addition to proposing ways in which such measures can improve individual decision-making processes, we predict that our experiments will identify *limits* of the corrective solutions to cognitive failures and the health challenges that cannot be addressed by NG approaches but rather will continue to require more traditional regulatory approaches. The study will thus provide key practical insights and theoretical implications for a broad range of interdisciplinary inquiry.

In this study, which has received the 2010-2011 Robert Wood Johnson Grant Award, we study these questions using several central health policy contexts:

- Decisions about Vaccinations
- Decisions about Sexual Behavior
- Decisions about Preventative Medication and Health Habits
- Decisions about Medical Procedures and Treatment
- Decisions about Health Insurance Coverage

Risk, Rationality and Executive Control Processes

Departure from strict rationality is well documented and is often the result of decision-making based on heuristic rules and common judgment errors. Heuristics serve as a means for economizing human decision-making, yet over reliance is prone to lead to mistakes. Errors in decision-making arise from many sources and this study is designed to both deepen the general study of cognitive judgment and decision-making and to offer novel insights of how such processes are relevant to health policy and law. The research builds on several strands of behavioral studies and new governance scholarship to examine core problems in public health policy and suggest concrete directions for improving health law. The research will also have broader contributions to the field of decision-making in general, including the interpretation of ambiguity, the processing of risk, and the effects of cognitive depletion.

Drawing on recent work in the fields of economics and psychology, we hypothesize that when individuals process decisions under *low-elaboration conditions*, they will be overly optimistic and will not fully appreciate risks. Moreover, as will be further described in the following section, we predict that under conditions of *depletion of executive control processes*, individuals will tend to take more risk in their health behavior. We further predict that known biases including the action/inaction asymmetry and discounting of future risk will be more pronounced under conditions of low-elaboration and depletion.

Outside of the health world, recent studies have begun to point to such effects in several contexts. Behavioral economists have established the occurrence of “preference reversals” (Thaler 1992), showing that people may choose option A over option B under certain presentations of information while choosing B over A under other conditions. For example, in one early experiment by Nobel Laureate Daniel Kahneman and his collaborators, when patients were told, “Of those who have this procedure, ninety percent are alive after five years,” they were far more likely to agree to the procedure than when they are told, “Of those who have this

procedure, ten percent are dead after five years” (Redelmeier, Rozin & Kahneman 1993). Moreover, doctors too were found to be vulnerable to this framing effect (Redelmeier, Rozin & Kahneman 1993: 73, finding that “framing effect was just as large with physicians as with lay people”). In many cases, individuals must make decisions about their own health and the health of others while faced with a comparison between the risks and benefits of action and inaction. DTP vaccine cases present a classic challenge for health policy and individual decision-making. In rare instances, DTP may cause permanent neurological injury (1 dose out of about 300,000). This risk is far less than the neurological injury risks from the illnesses that the vaccine prevents. In an earlier study, Ritov and Baron (1990) designed an experiment in which subjects were presented with a situation in which a disease kills 10 out of 10,000 children, while a vaccine can prevent the disease in everyone, but the vaccine itself has side effects that kill some children. Subjects were given a table of different possible values of the risk of death from side effects and subjects were asked the maximum level of risk that should be tolerated by government in order to institute a compulsory vaccination program. Ritov and Baron found that individuals may be reluctant to vaccinate a child when the vaccination itself can cause death, even when this is much less likely than death from the disease prevented. They further showed that the reluctance is even greater when there is a 'risk group' for death (with its overall probability held constant) even when the test for membership in the risk group is unavailable. These results are an example of omission bias – an overgeneralization of a distinction between commissions and omissions to a case in which it is irrelevant. We plan to present similar dilemmas to our participants, while manipulating depletion/self-control resources. We hypothesize that the omission/action bias will be more pronounced when participants' cognitive resources have been depleted. Similarly, our experiments will design hypothetical scenarios drawing on other types of established biases, such as the reference dependence bias -- the tendency to judge things not in absolute value, but rather in relative terms as compared to a focal level (e.g., meat as 93% lean or 7% fat). The field of

behavioral economics is rapidly growing, yet despite initial evidence of its key significance to health policy, research in this area is still quite scarce. In a novel combination of the insights of behavioral biases with measures of depletion/elaboration, we will present people health puzzles, while manipulating the reference points through different frames.

Executive Resources and Cognitive Depletion

Risky decisions have been studied in many social science and policy fields, yet much about the mechanisms of risk-related preferences is still to be uncovered. Relative to their importance, *processing modes* of risk have been understudied (Amir, Vohs & Dhar 2009; Loewenstein et al. 2001). While choices can occur after careful deliberation, many everyday choices are effortless and are guided by intuitive thinking. At the same time, such decisions are frequently monitored through *effortful* processing, also called the *executive control*. In other words, effortless decision-making requires effort. Self-monitoring through executive control processes requires mental resources. Recent behavioral literature suggests that executive controls consist of the selection of the *focus* of attention, the *maintenance* of goals or information active in working memory, the *updating* of working memory, and the *rerouting* or switching from one mental task to another (Shimamura 2000). The capacity to monitor the intuitive responses effectively is determined by the *willingness* to exert mental resources as well as their *availability*.

In a series of forthcoming studies, Amir and his collaborators test the nature of revealed preferences for, and aversion to, risk, arguing that these can be conceptualized as a temptation moderated by executive control processes. Amir, Vohs & Dhar (2009) find that self-control resource depletion leads to a preference for riskier options. Amir and his collaborators hypothesize that risk aversion stems from similar mechanisms as self-control (or “self-regulation”) and is subject to similar influences. In the context of finance, they show that participants who had to control their attention were significantly less risk averse than their

counterparts in the control condition. In a series of lab experiments, the average number of safe choices among participants who had not engaged in attention control was significantly higher, suggesting that psychological depletion caused by a prior task decreases risk aversion in financial choices. In a different study, Goldsmith and Amir (2009a) find that in the context of consumption goods, when individuals do not elaborate on their decision, they process uncertain information and risks as if they will be receiving the best possible outcome. They show that people reflexively over-value promotions with uncertain outcomes but that this over-valuation disappears with careful thought, suggesting a link between simplistic processing -- or reduced self-regulation through cognition -- and reduced risk aversion. In another forthcoming study, again in a context unrelated to health decisions, Goldsmith and Amir hypothesize that this effect emerges because people are intuitively optimistic and are tempted by the upside of the risky option, but the executive control system can override this intuitive tendency and generate some risk aversion (2009b). In our proposed study, we argue that this new line of research, conducted primarily in the context of consumer behavior and financial choices, is highly relevant to health policy. The studies, in conjunction with other recent non-health related experiments (Gneezy et al. 2006), provide evidence for an important distinction with potentially key insights for health related decision-making: *a distinction between low and high elaboration affecting risk attitudes and the propensity for irrationality.*

The study of cognitive depletion and risk is novel. The understanding of the human self as employing a limited set of resources for its executive control is consistent with a body of research on goals and self-regulation (Baumeister 2002). An extensive series of studies by Baumeister and colleagues (Baumeister et al. 1998; Muraven and Baumesiter 2000) shows that people's self-regulation resources are limited and can be temporarily depleted by prior exertion. In a recent article, Schmeichel (2007) explains that self-regulation can be viewed as the self's efforts to monitor its own intuitive responses, such as by trying to bring careful reasoning into

the decision process. In other words, self-regulation shares a high degree of conceptual overlap with the notion of executive control. Accordingly, monitoring processes in individual choices may be impaired by resource depletion, when a prior unrelated task is performed. In the resource depletion literature (Baumeister 2002; Muraven and Baumeister 2000; Vohs and Heatherton 2000), after an initial self-regulation task, participants are confronted with a second ostensibly unrelated demand for self-regulation. The key finding is that people who had performed the first self-regulation task perform worse on the second task. For example, refraining from eating delicious cookies as opposed to radishes reduced people's ability to later persist in solving difficult anagrams (Baumeister et al. 1998). This pattern suggests that self-regulation uses limited processing resources, akin to strength or energy that becomes depleted via effortful self-regulation. Evidently, the prior exercise of self-control uses up a vital cognitive resource, leaving those individuals subsequently less able to make themselves persist in demanding cognitive activities (Bruyneel et al. 2006; Vohs et al. 2008). For example, in one study, participants who made a long series of choices between products were subsequently less likely to withstand the pain of holding their arms in unpleasant cold water than were participants who were not asked to make choices (Vohs et al. 2008). Recent work further suggests that the self's limited resources is used not only for self-regulation but also for other executive functions, including choice and decision-making (Pocheptsova et al. 2008). For example, attempting to ignore interesting subtitles while watching a boring movie clip yielded an increase in subsequent reference dependence bias -- the tendency to judge decision attributes not in absolute terms but rather in relative terms, influenced by a particular salient reference value and the particular choice set presented. That is, participants who tried to avoid looking at the eye catching phrases were more likely to make biased decisions about which cellular program to choose in a subsequent task. Thus, for example, based on these findings, we hypothesize that if one is presented with two medical treatments, for example, long and cheap or short and expensive, the tendency to judge

these attributes according to their framing and reference to other choices in a given choice set would be more pronounced under conditions of resource depletion. These findings point tentatively toward the conclusion that both self-regulation and cognitively effortful processing involved in making choices draw on the same limited resource required for executive control.

Deepening and extending these novel insights about cognitive resources and depletion to the context of health related decision-making is particularly important. In many situations, decision makers, including patients, supporting families and health professionals, operate under conditions of depletion. Health policy must consider the profound differences of individuals making health related decisions under relaxed conditions and good health and patients deciding under conditions of sickness and stress. Similarly, physicians and other health providers making health related decisions can also become frequently depleted of executive control resources at the end of a long and busy night shift.

In order to observe the hypothesized effects in different types of decisions, we will replicate our studies in five categories: decisions about vaccination, medical treatments, health maintenance, safe sexual conduct and health insurance choices. The key hypotheses are that participants who previously, or concurrently, expended more self-regulatory resources would make riskier decisions more often than participants who had not exerted as many self-regulatory resources and that these participants would be more affected by Type 1 biases, which are sourced in the intuitive system. Moreover, in subsequent experiments in our proposed study, we further plan to test Type 2 biases that are caused by controlled processes of cognition. Based on prior evidence from the experimental literature, we hypothesize that some biases, for example, intransitivity biases, may actually increase when people are asked or given the time to think more carefully about their decisions (Kreps 1990; Amir & Ariely 2008). We argue that in such cases, policy must grapple with the possibility that allowing people to deliberate and decide will lead to unhealthy outcomes.

METHODS, MEASURES AND ANALYSIS

Policy Analysis and Lab Experimentation

A notable strength of the proposed study is the combination of lab experimentation with the concrete context of real-life policy challenges. Many of the groundbreaking behavioral economics studies are lab experiments. However, lab experiments often lack the rich social and organizational contexts of real market interactions, and therefore have limited direct application to concrete social policy.² In this study, before launching the core experimental lab studies, we plan to collect, document, and map diverse ways in which information about health choices and risks are presented to individuals. This pre-laboratory stage will consist of structured open-ended interviews and broad surveys of medical providers, including a comparative inquiry on how information is presented in places outside the United States. We will collect data from hospital administrators pertaining to their policies and patients forms. To complement the field inquiry, we will study case law and existing regulations on the presentation of risk-related information, the status of disclaimers, and the specificity in which the law guides health professionals in the dissemination of such information. The inquiry will include studying:

- The stage at which a health risk is discussed in preparing for a medical procedure.
- The language used and the relative amount of risk-related information provided to patients.
- The language of patient consent forms used by leading hospitals.
- The stage at which the patient is requested to make her decision.
- Whether the relevant health information designs are guided by policy.
- The level of specificity provided by existing policy.
- The effect of lawsuits, including the analysis of disclosures, disclaimers, medical liability and waivers, on the presentation of information.

This pre-laboratory stage will serve as the backdrop for the design of the lab experiments.

It will also later serve in the later stage of evaluating the empirical results in relation to future

² For further discussion, Feldman & Lobel (2008); Levitt & List, 2008 (“To be empirically relevant, the anomalies that arise so frequently and powerfully in the laboratory must also manifest themselves in naturally occurring settings of interest.”).

policy recommendations. The interview and policy analysis stage relies on qualitative data-mining to identify the correct measures and context that will be used in the quantitative experimental studies. For example, because health related decisions can be very challenging, a number of decisional support tools have been recently developed and tested in hospitals. Preliminary findings indicate that in areas such as cancer treatment, decision aids facilitate patient decision-making by providing relevant information on the options while eliciting and incorporating individual preferences (Neuman et. al 2007). In randomized controlled trials, cancer-related decision aids have been shown to increase patients' knowledge, facilitate a more active role in patient decision-making and improve patient satisfaction as a result. At the same time, studies have yet to show whether the use of decision aids impacts the *actual decisions made* by patients (O'Brien et. al 2009). Our experimental design provides such an advantage because of the randomized lab environment conditions. It would thus help assess such decision aids not only from the perspective of process satisfaction but also from the perspective of outcomes. Applying the phrasing used in decision aids from various health settings in a controlled lab experiment can allow better evaluation of whether policymakers should fund and promote the use of such aids. More broadly, the American healthcare system is at a crucial moment in the transition to more effective use of health information technology (HIT) (Beaton 2008), rendering our proposed study particularly timely.

The core of the study consists of a series experimental lab studies, where hypothetical cases are modeled on real public health problems and manipulate the informational surroundings and background features in which the decision-making process takes place. The experiments will each be designed to uncover patterns in choices and preferences building on behavioral insights. The basic structure of all the experiments will consist of two stages: a resource depletion stage and the focal task. For the focal task, the study will test a series of behavioral biases as they pertain to health-related decision-making, including, action/inaction, optimism/pessimism,

certainty/uncertainty, risk framing, reference dependence, and omission bias. Thus, the study design forms a 2-by-2 matrix, testing the existence and pervasiveness of various types of biases under varying conditions of cognitive resources. The following table demonstrates the matrix with two representative biases, with their hypothesized findings:

Executive Resources/ Type of Bias	Non-Depleted	Depleted
Reference Dependence	Low	High
Commission/Omission	Low	High

Depletion Manipulation Methods

In our planned experiments, individuals will be asked questions about their own health preferences and about health choices, *during* and *after* being asked to perform tasks that deplete their cognitive resources. These same questions will be asked of a non-depleted control group. For example, participants will be asked to ignore words on the bottom of the screen while they read about potential health risks. Manipulations of attention control and depletion have been used successfully in past experiments to effectively manipulate cognitive resources (Vohs et al. 2004; Pocheptsova et al. 2008; Schmeichel, Vohs, & Baumeister, 2003)). These manipulations mirror many real life situations where multi-tasking or attention control is required (e.g., having to answer one's children while trying to read through a complex set of medical plan options, or trying not to be distracted by flashing banners on the screen while trying to read through a medication's warnings). We hypothesize that absent sufficient resources for executive functions individuals will take more risk in their decisions. Using the study matrix, in each experiment we plan to further vary the nature of the risky decisions across different health problems, reference frames, and outcome valances in various ways. Each set of studies examines assessment and processing of risks as they pertain to decisions regarding specific medical treatments, procedures,

vaccination, sexual behavior, preventative medication and health habits, and choices of health insurance coverage -- comparing decisions in realistic situations of resource depletion and thought-enabling environments.

The study will employ two well-established tasks to deplete half of the participants: *thought suppression* and *word omission*. In the first task, adapted from previous research (Pocheptsove et al. 2008), participants will be asked to watch (on a laptop computer) a 3:40 min video (without audio) of a man giving a presentation. During the presentation, a series of eye-catching current news media phrases (unrelated to the interview, such as “Michael gets court date”) appear in the lower part of the screen. Each phrase appears for 5-6 seconds. Participants will be told that the purpose of the study is to evaluate the non-verbal behavior of the presenter and that in the end of the video clip they will be asked to evaluate the presenter. Participants assigned to the control condition will not be given any instructions regarding the phrases in the lower part of the screen prior to watching the video clip. Participants in the resource-depletion condition will be given explicit instructions to “avoid looking at or reading any phrases that may appear on the screen,” ostensibly because it might interfere with the assigned task. Based on prior research, participants who consciously seek to control their attention are subsequently in a state of resource depletion because directing attention away from the printed phrases uses executive control resources resulting in fewer resources available for other activities (Schmeichel, Vohs, & Baumeister 2003).

The second depletion task comes in the form of a written essay, and is similarly adapted from previous research (Pocheptsove et al. 2008; Schmeichel 2007). Participants will be asked to write a one-page essay describing their daily activities. Half of the participants (control condition) will be instructed to write the essay without using words containing the letters “x” or “z.” Another half (depletion condition) will be instructed not to use words containing the letters “n” or “a.” This depletion manipulation requires that participants override their initial desire to

use words that contain very common letters in the English alphabet and find substitute words. This override activity exhausts executive resources and should lead to a state of relative depletion.

Preliminary Results on Risk Depletion and Validation Measures

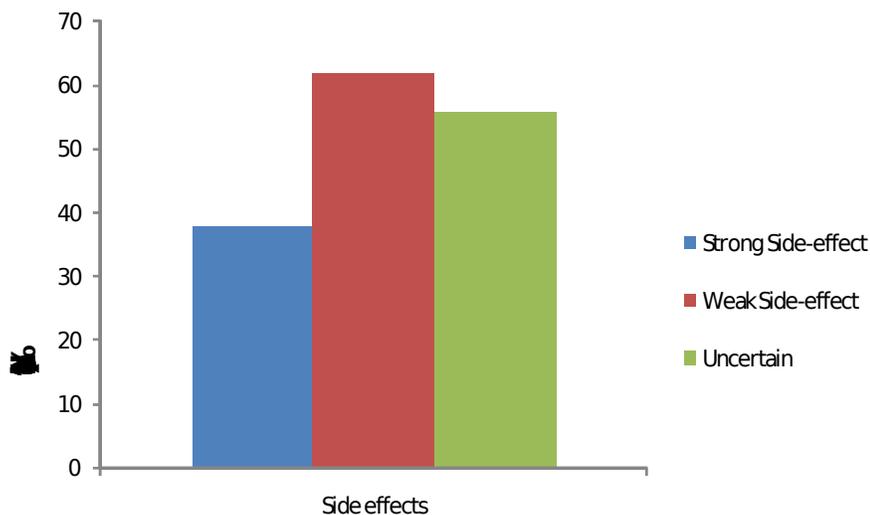
In the first preliminary experiment we recently ran, we find that people, when making decisions intuitively, tend to behave as if a lesser side effect will happen to them if they decide to be vaccinated against the flu. Ninety students were approached at a southwestern university and were asked to participate in an experiment on health behavior. For this experiment, participants were placed in one of three conditions at random, and were not compensated for their participation. Participants in all conditions read instructions that asked them to imagine that during a routine visit to the doctor, their doctor recommends that they receive a flu shot. The doctor then informs them that patients experience one side effect as a result of the flu shot. Varying among the three sub-groups, participants were told that the side effect would be either: [**condition 1:**] a moderately negative side effect (a headache), [**condition 2:**] a negative side effect (severe fatigue), or [**condition 3:**] one of the two side effects (either a headache or severe fatigue, but never both). After reading these instructions, participants were asked to indicate the likelihood that they would decide to receive the flu shot. The decision-making scale used was a scale from 0 (not at all likely) to 100 (extremely likely) as well as how attractive the idea of the flu shot was to them (1 – not at all attractive, 7 – very attractive). Participants also reported their gender, age and any additional comments that they might have.

The results of this preliminary experiment support some of the hypotheses of our proposed study. First, participants indicated they were significantly *more likely* to get the flu shot and found the idea of the flu shot *more attractive* when the side effect was the moderately negative (headache) rather than the more negative (severe fatigue) option (Likelihood of getting

shot: $M_{\text{moderate}} = 62\%$, $M_{\text{negative}} = 38\%$; Attractiveness: $M_{\text{moderate}} = 4.7$, $M_{\text{negative}} = 2.9$, p 's $< .01$).

This result served as a manipulation check that the stimuli indeed conformed with our predictions about individual assessment of the two possible side effects. More importantly, we found that the *uncertain* side effect *did not differ* from the *moderate* side effect across all dependent measures (Likelihood of getting shot: $M_{\text{lottery}} = 56\%$; Attractiveness: $M_{\text{lottery}} = 4.4$, p 's $> .34$), and was significantly *more motivating* than the extreme side effect (p 's $< .01$) (See Table 1).

Table 1: Likelihood to Vaccinate Under Uncertain Choices



Discussion

These results of the reported experiment point to an important dynamic, as previous literature suggests that people might be overly risk averse when considering vaccinations (Loewenstein 2005). If these results hold in our more rigorous tests suggested above, our study will provide a basis for recommending conditions under which people can be less averse to various vaccinations and treatments. This preliminary experiment is one example of the range of controlled studies planned to uncover various decision-making behaviors in the context of health-related risk processing. As described above, each of the future experiments will be

compounded with the novel methods of depletion, allowing us to study behavioral biases in general and the effects of cognitive executive controls on these biases. We predict that depleted participants will view a higher likelihood of positive health benefits happening to them and a lower likelihood of negative health consequences happening to them relative to the control participants. Importantly, if we are correct in our hypothesis, this result evidences that psychological depletion caused by a prior unrelated task decreases the perceived likelihood of future negative health outcomes, therefore increasing optimism and other identified behavioral biases.

The ways individuals understand and perceive medical warnings is central to regulation and policy. The FDA for example requires drug manufacturers to include a drug-specific label supported by empirical evidence accompanying each of its drugs before such drug may be introduced to the market.³ The FDA's premarket approval of a new drug includes the approval of the exact text of the label.⁴ The FDA will deem a drug misbranded if the essential scientific information needed for the safe and effective use of the drug are not prominently placed on the label "with such conspicuousness (as compared with other words, statements, designs, or devices, in the labeling) and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use."⁵ In the context of FDA warnings for prescription drugs, the drug manufacturer generally has a duty to warn the doctor proscribing the drugs and not the end user. As a result when a court evaluates the language used it must always bear in mind that the warning is to be read and understood by physicians, not laypersons.⁶ Under the "Learned Intermediary" Doctrine the manufacturer generally discharges

³ 21 C.F.R. § 201.56(c).

⁴ 21 U.S.C. § 355; 21 C.F.R. § 314.105(b). This label must: (1) Summarize "the essential scientific information needed for the safe and effective use of the drug." 21 C.F.R. § 201.56(a)(1); and (2) Be informative in an objectively accurate and non-promotional, false, or misleading tone. 21 C.F.R. § 201.56(a)(2).

⁵ 21 U.S.C. § 352(c).

⁶ See, *Felix v. Hoffmann-LaRoche, Inc.* 540 So.2d 102, 105 (Fla. 1989); *Williams v. Ciba-Geigy Corp.*, 686 F.Supp. 573, 579 (W.D.La 1989)

its duty to warn ultimate users of prescription drugs by supplying physicians with information about drug's dangerous propensities. The reasoning is that the prescription requirement is sources on the need to rely on the judgment, experience, and extensive training of a professional serving a lay patient. However the "Learned Intermediary" doctrine has received different interpretations by courts in different jurisdictions, for example the New Jersey courts have significantly eroded the doctrine when products are marketed directly to the consumer.⁷ More generally, the FDA requires that the sequencing of warnings will be from the most common to the less common occurrences.⁸ Courts have generally held that warnings are adequate as a matter of law if it they specific detailed information on the risks of the drug and taking into account the content of the language, form and manner of the warning. Some courts have inquired on whether the warning portrays with sufficient intensity the risk involved in taking the drug.⁹ At the same time, courts require the warning to be fully descriptive and complete, conveying updated information as to all of the drug's known side effects.¹⁰ The experimental findings described above suggest that this requirement of full and complete disclosure of risks may in fact be counter-productive in diluting the actual perceptions of risks.

Failure to comply with the warning duties and the duty to update warning in case new information arises may raise not only regulatory non-compliance issues but tort liability issues in tort because "federal labeling requirements create a floor, not a ceiling for state regulation."¹¹ At the same time, there is very little study of judgment and decision making in relation to drug warnings. The findings above indicate that policy should inquire on how lists of warnings that

⁷ Restatement (Third) of Torts: Products Liability § 6(d); N.J.S.A 2A:58C-4.

⁸ see generally, *Martin v. Hacker*, 83 N.Y.2d 1, 8-12 (N.Y., 1993)

⁹ *Smith v. Johnson & Johnson Co.*, 800 N.Y.S.2d 357 (N.Y.Sup., 2004).

¹⁰ *Id*; *Martin*, 83 N.Y.2d 1, 8-12 (N.Y., 1993).

¹¹ *Wyeth v. Levine*, 944 A.2d 179, 184 (2006); See also *Wyeth v. Levine*, 129 S. Ct. 1187, 1194-204 (2009) (holding that it was Congress's manifest purpose to not provide federal pre-emption because it had expressly indicated that drug manufacturers and not the FDA have the duty to monitor the safety of drug products and are therefore in the best position to update drug labels).

appear on the drug labeling or are as pre-treatment information on side effects should take into account the ways combining lists of risks which vary in degrees of severity and frequency are in fact understood and perceived by the recipients.

Limitations and Future Research

A notable limitation of the study design is that it relies on the participants' intuitive reasoning as no actual flu-shot or treatment is in fact soon to be administered at the time of the experiment. This limitation exists in most all lab experiments and there is a wealth of literature that demonstrates the validity and importance of the findings despite the setting (see Feldman & Lobel 2008; 2010 for a review of attitude-behavior gap theories). While lab experiments entail limitations, they also offer significant advantages over field experiments, allowing for the control of more factors and a better understanding of the decision-making processes involved. For questions about processing levels and cognitive resources in health related decision-making this design provides an advantage, as field experiments will tend to suffer from too much contamination and the under-control of variables and randomization. The experimental conditions we propose will allow better controls and more precision and certainty in analyzing the outcomes; at the same time, the proposed design will ensure cross-checks and the empirical grounding of the conditions in existing policy options.

Importantly, the methods of experimentation we employ in the lab studies have been successfully employed in other contexts, and the behavioral biases selected for each experiment have been established in other contexts using similar design. We purposely build on a rich line of studies in social psychology to ensure the reliability of our method and measures. We uniquely combine fundamental behavioral insights and translate them into health policy challenges in a

way that will have significant and broad implications. The study results will assist in the design and implementation of laws and policies and will lend themselves to the practice community. Further, the tools and methods we develop for the experiments will enable the design of many more experiments in years to come, contributing to the advancement of public health law research in general.

***** MORE ELABORATE FINDINGS AND RESULTS – WILL BE READY FOR CIRCULATION IN AUGUST 2010 WITH THE NEXT DRAFT – CURRENTLY THE DATA COLLECTION IS NEARING COMPLETION *****

Health Insurance

“States have a wide range of standards that govern the types of conditions and treatments a policy is required to cover (called mandated benefits). For example, in 46 states health insurers are required to either cover (or offer to cover) benefits for diabetes supplies and education.²⁴ Twenty-seven states require insurers to cover cervical cancer screening.²⁵ Fifty states require coverage for mammograms and 32 require coverage for well-baby care (childhood immunizations and visits to pediatricians).²⁶ Mandated benefits also include requirements on insurers to reimburse certain types of medical providers, such as nurse practitioners. The term “mandated benefits” is also used to describe state laws requiring coverage for special populations, e.g., adult handicapped children.” [from

<http://www.allhealth.org/briefingmaterials/HealthInsuranceReportKofmanandPollitz-95.pdf>]

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Osaka Meeting

February 20 2011

Kevin Solomons

The Power of Low Self-Esteem

Introduction

“Feelings of worthlessness” are one of the characteristic symptoms of major depression (DSM IV, APA 1994). Low self-esteem is considered a risk factor for depression (Beck, Harper & Row, 1967; Orth, *J Abn Psychology* 118(3) 2009). In this presentation I will propose that low self-esteem is a normal and healthy psychological phenomenon, and that **failed** low self-esteem causes depression rather than is a symptom of it.

I will propose a view of the source of self-esteem that differs from the conventional understanding. In contrast to the standard notion of self-esteem arising from a blank slate or tabula rasa, in the direction of positive when early experience is affirming and reassuring, and the negative when one is undermined and unfavored, self-esteem can be understood as a psychological phenomenon that develops in response to two specific naturally occurring developmental phenomena that are in themselves unrelated yet coincide in a way that leads to the universal experience of worthlessness or low self-esteem.

The moment of birth marks a profound transition in our experience from a state where we have no needs, to one where we become creatures of need, from the very birth for the rest of our lives and until we die. Whatever needs we may have in utero and before we are born are conveyed to our mothers without us being aware that we are in a state of need or that we need to do anything about it. Our needs are instinctively and automatically known to our mothers, who respond to them as best they can. To the extent that they meet our needs, we survive and continue living and growing; to the extent that they are unable to meet our needs, we are for the most part unable to survive and we abort and die. Being born means that we have successfully and passively had all our needs met, and without having to do anything to ensure that they were met. All that changes when we are born

From the moment of our birth we experience need, and do so as a physical or visceral experience of discomfort. When we sense this we indicate to our “need-meeters”, our mothers, that we require help to satisfy or fulfill the need. When the need is met, the discomfort abates and we return to a state of equanimity, which is perhaps the origin of pleasure. However, when the need is not met, the discomfort intensifies and we signal more urgently and loudly for the help we need. Our mothers are almost by definition, and for various reasons, the other person we rely on principally to meet our needs and alleviate our discomforts. However, as we grow and become increasingly independent, we progressively lose proximity with our mothers. Since our mothers are less present for

us, for all of us, with the passing of time, it happens that there are times when we need them and they are not there for us. When they are not there to see to our needs and alleviate our discomfort, the discomfort we feel increases and becomes increasingly painful. This is unavoidable, and happens to children of the most devoted, nurturing and loving mothers. All children experience pain, and pain is the experience of needs that go unmet. We can all tolerate pain up to a point, but there is also a point beyond which we can no longer tolerate the sensation of pain. Under those circumstances we become overwhelmed by pain and break down. We refer to this state as falling apart or falling to pieces, collapsing, coming apart at the seams, cracking up, shattering, or even having a breakdown and other similar imagery of disintegrating.

The Humpty Dumpty nursery rhyme captures this situation perfectly. Humpty is an egg, or in other words, a child. He fell from a wall and was hurt. He needed his mother. The rhyme says “All the kings horses
and all the king’s men
couldn’t put Humpty
together again”.

What the rhyme is saying is that all the hired help, the maids, nannies, child minders, counselors, psychologists, psychiatrists, priests, pets, toys, games and other distractions, can’t satisfy Humpty when he’s in pain. He needs his mother, his parents. The father/king is mentioned only in passing, he’s not actually present but is referred to, presumably he’s out working to pay for all his “horses and men”; the mother/queen is not mentioned at all, she’s missing, she’s away, she’s nowhere to be found. Without her, Humpty can’t be put back “together again”. The image we have of him is that he lies on the ground, broken, cracked, bleeding, the vital juices seeping out of him, he is miserable, he is inconsolable, he is dying. His experience is that when his needs go unmet, when his mother is not there when he needs her, he becomes overwhelmed, he falls apart and, if his understanding was developed enough to grasp his predicament, which it is not at that young age, he dies.

This being overwhelmed by unmet needs is the quintessential experience of abandonment. The cause of the experience is not important, only the experience is. The mother’s intentions or reasons for being absent when he needs her are immaterial to him. Humpty does not care why his mother is missing: all that matters to him is that she is. Abandonment is a universal experience that affects everyone, every single person, because we all have mothers who cannot be present for us as we get older 24 hours a day seven days a week. Life would not be possible if our mothers were constantly available to us as separation and individuation could not take place, learning could not take place, adulthood would not happen and reproduction, and therefore the species would come to a halt. For mothers to be missing in action is a biological necessity, and the experience of abandonment is inevitable and unavoidable.

The experience of cracking up in the face of this abandonment is profoundly threatening, and all creatures have ways of dealing with threat. For both an individual and the species as a whole the inability to detect and respond to threat is incompatible with life and with survival. Human beings deal with threat through thought. We label ourselves Homo

sapiens, Man the Wise, to highlight this quintessential aspect of our primary way of dealing with threat, and what it is that distinguishes us from other species.

Thought is a biological faculty, and like other faculties such as movement, we are not born with it fully developed. It is latent within us and evolves over time until it is fully expressed. The development takes place in a structured fashion through different stages of development. Just as we sit before we crawl and crawl before we walk, or run, or play minuets on the piccolo, so too do our thinking faculties evolve in an orderly and predictable manner over time. The stages of cognitive development were first spelled out by the psychologist Jean Piaget. He identified a number of different elements in the process of cognitive development, one of which is crucial to the issue of how we first learn to cope with the threat of abandonment. Piaget spoke about the phenomenon of decentering, i.e. the ability to be able to see something from someone else's point of view, from a point of view that is other than one's own. Being able to see things from another's point of view underlies the capacity for empathy, and is a key component in being able to comprehend reality.

Preceding this capacity to cognitively decenter is what he called the phenomenon of cognitive egocentricity, i.e. the view that everything that happens to me is about me. It is the understanding that I am the centre of not just my universe but of the universe as a whole, because I can only know what I experience directly myself. Whatever I do not experience directly does not exist, and the only things that do exist are what I experience. A classic example of this way of thinking is the idea children have of thinking that they are responsible for their parents' conflicts and separations. To the pre-decentering egocentric human mind that is at the center of the universe, whatever happens in my experience, in this case my parents arguing, is about me because I experience it and because I am unable to know anything about my parents' experience, I know and cannot know anything about what makes them unhappy other than me because what I don't experience directly myself does not exist. So if for example they are arguing about money, because I know nothing of money, the money at the root of their argument does not exist, therefore their argument being about money does not exist, and the only thing I know about is me, so I must be responsible for their argument. I will call this egocentric stage of cognitive development the stage of cognitive narcissism.

Prior to the stage of cognitive narcissism, the evolution of the human mind's ability to capacity make cause and effect connections is too underdeveloped, thinking is too disorganized and chaotic to allow for any coherent or meaningful understanding of cause and effect relationships. The earliest time at which humans can make meaningful causal connections is in the egocentric or narcissistic stage of cognitive development, and this I believe comes on stream in all likelihood after the age of three. In other words, at the very earliest time that it is possible for us to make sense of our experience of abandonment and the threat of destruction or death, we do so through the lens of cognitive narcissism. This leads us to the inexorable conclusion that when our mother is not present for us when we need her, the only reason we are able to understand for her absence is that it has to do with us, that it is our fault or doing. Because we know and can

know nothing about any of her experience aside from us, we cannot appreciate any of the actual reasons that account for her absence. If she is stuck in traffic, we know nothing about traffic and so cannot understand that traffic is the cause of her absence. If she is at work, we know nothing about work or about her being at work because we do not experience that directly ourselves. The fact that her work keeps her from us when we need her means nothing to us, and the only way we can explain her absence is on the basis that it has to do with us not her.

So the question is, what about us is it that keeps her away when we need her? The way our narcissistic mind works is that we think that if we were worth her while for her to be there when we need her, that she would, and conversely, that if she is not there when we need her, it is because we are not worth her while being there for us. In other words, her absence is because we are not worth her while, we are not worthwhile, we are not worthy of her time or presence, , worth less to her than something else, that we are worth less to her, worth less, i.e. that we are worthless.

We reach the conclusion some time in our threes or fours that we are worthless, that we do not matter, based on our unavoidable experience of abandonment coupled with the inescapable narcissistic phase of cognitive development. The coinciding of these two phenomena leads us to the conclusion that we are worthless, and so we come by our inherent low self-esteem. We come by this honestly in the sense that it flows from our distorted understanding of cause and effect relationships as it affects our experience of being overwhelmed by unmet needs. Before we ever know anything else about our sense of worth, we know ourselves to be worthless. Thus the phenomenon of inherent low self-esteem is a normal and universal experience that arises developmentally. It is not an artifact of bad luck, of circumstance, rather it is a developmental inevitability.

Deciding that we are worthless does not solve the problem of unmet needs in the moment, but it does frame for us the conditions under which we can solve the problem. Since it is up to us to ensure that we receive the care we need, we have to make our mothers care for us. We have as little appreciation of what makes her care for us as we do of the circumstances that lead to her absence when we need her. We know nothing of love or maternal instinct or whatever else moves our mothers to care for us. We narcissistically think that it is up to us to make our mothers care for us, and so we work out that in order to be cared for, we need to please our mothers. We all reach this same narcissistic conclusion that we have to please our mothers to receive the care we need, to stay alive.

It is from this point that our experience starts to differ, because that pleases our mothers differs according to the mother, and to what we are able to bring to bear in order, in our minds, to please them. Through trial and error we find ways that succeed at pleasing our mothers, and by extension, the others upon whom we depend. We repeat the ways that work and these behaviors become reinforced, and eventually become part of us. What we call our personalities is essentially the ways we have learned to successfully induce our mothers to care for us. Our personalities differ because our mothers and their circumstances differ, and so we find ways that are unique to our and our mothers'

circumstances in order to please them. Some of us succeed through being obedient, through being caring, clever, funny or entertaining, or good to look at; others of us succeed through being invisible, undemanding, complaintive, or aggressive. And as the circle of people upon we depend expands, so we acquire new ways to successfully please, and our characters expand accordingly. We become the people we are by learning to please successfully in the ways that work for us in our particular situations. Because the things that please our mothers and the others on whom we depend, are the things that are socially valued and required for cohesive social functioning, it is though this built in mechanism of needing to please to have our needs met, that we learn the norms and codes of social conduct. It is through this that we learn the rules and laws that social groups need in order to maximize their chances of successful adaptation and survival. In other words, through the needed to please, low self-esteem promotes social learning, social cohesion and successful social adaptation. This would not be possible, or as efficiently possible, were it not for the developmental phenomenon of low self-esteem.

Low self-esteem forces us to find ways to please, and the extent to which we accomplish this translates into our feeling worth being cared for, to feeling worthwhile. Since most of us are cared a lot of or most of the time, most and many of us grow up with the experience of successful low self-esteem, i.e. feeling worth being cared for because we were. So our ability to feel worthwhile rests in the hands of others, unless someone else treats us as though we matter, what we know inside ourselves is that we do not matter, that we are not worthwhile, that we are worthless. Universally our default position is worthlessness; only when others or circumstances outside of our selves show us that we matter to them, only then are we able to feel worthwhile, a state I refer to as successful low self-esteem. Throughout our lives we expend our energies and efforts trying to create and sustain conditions where others value us because that is the only way we know and are able to experience ourselves as being worthwhile. When these conditions break down, as they tend to do sooner or later through the course of our lives, then we switch from a state of successful low self-esteem to one of failed low self-esteem.

There are of course many reasons why we may experience this switch, and it seems that as we get older, the likelihood is that more and more of us switch from successful to failed low self-esteem. The experience of failed low self-esteem is of course the Humpty Dumpty feeling of abandonment, of inconsolable worthlessness, that we are not cared for because we are not worth being cared for. Although our minds have evolved beyond this developmentally primitive stage of cognitive narcissism, in the realm of our emotional thinking we remain stuck in a narcissistic way of making sense of our emotional experience.

We feel as Humpty Dumpty did, at the bottom of the wall and the bottom of the world, abandoned, alone, worthless, pointless, depressed, that life is no longer worth living, or put another way, our life is not worth living any more. This is the state of depression, and when we cannot find a way to restore the experience of making others value us, or value us sufficiently so that we can again vicariously through others experience ourselves as worthwhile, we get stuck in this state of failed low self-esteem and feel worthless, terrible and depressed. We now refer to this state as the illness depression, or according to the

DSM IV, a Major Depression Episode. We tend nowadays to treat this so-called illness with medications to reduce the symptoms of distress and despair. We refer to low self-esteem as one of a number of depressive symptoms, whereas it is failed low self-esteem that has precipitated the feelings of despair and misery that we now call depression. In other words, we can think of depression not so much as a sickness (which at times it can be) but rather a state of being stuck or of stuckness. We are depressed because our successful low self-esteem morphed through changing circumstances into failing and failed low self-esteem, and that state of worthlessness, of abandonment, is unbearably painful. If your inner understanding and conviction is that you are not worth being kept alive, that is synonymous with not being worth living, and it is under these circumstances that suicidal thoughts arise and take hold. It is the regression to failed worthlessness that brings on depression, not the other way round.

From this perspective it is possible to appreciate the limited role that anti-depressant or other mind-altering substances can have on the mind of the person with failed low self-esteem; these effects are confined to reducing the intensity of the misery and despair that are the natural and inevitable feelings accompanying the state of worthlessness, and only temporarily besides since they cannot and do not have any effect on the understanding of the source of the feelings of worthlessness. Under certain circumstances this may be an important and valuable intervention, but it obviously has limited benefits in terms of dispelling narcissistically distorted low self-esteem with a realistic view of one's self as a self of intrinsic worth and value, as a self that is capable through an appreciation of the origins and purpose of worthlessness, of being worthwhile and taking on the state of healthy self-esteem. For this there is no substitute for or short cut around learning, learning about the provenance and function of low self-esteem.

Environmental Psychology, Urban Planning and Economics: Intersections, Crossroads & Tangents

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Abstract

Compared to urban planning and economics, environmental psychology is a relatively recent area. The young discipline focuses on topics such as psychological effects of urban policies; place attachment and place identity; perceptions of city image and urban design; pro-environmental behavior, transportation choices, urban navigation and commuting issues; urban noise, recycling behavior, energy-related behaviors, green identities; and perceptions, attitudes and information on green issues such climate change, global warming, sustainability, conservation, biodiversity, and mitigation measures.

On the other hand, economics is involved in urban issues through the areas of urban economics and economic geography which ask questions such as why some cities and districts economically develop more than their counterparts, and how to plan the cities in a way to maximize the economic performance including quality of life. Thirdly, urban planners, professionals that are almost as old as the emergence of cities in human history continue to plan cities mostly without the feedback and input from relevant areas such as environmental psychology, urban economics and economic geography. There are some intersections, crossroads and tangents across these areas. The influence of participatory approaches is growing in urban planning profession although at a slow rate; and the knowledge of both environmental psychology and urban economics are needed in the grassroots democratization of urban planning.

In this context, this paper focuses on the more-or-less uncharted division of labor across the disciplines at issue, and makes suggestions for better collaboration options.

Contents

1. Introduction
2. The Possible Contributions by Environmental Psychology to Urban Planning
 - 2.1. Research on Place Identity and Place Attachment
 - 2.2. Research on Environmental Attitudes
 - 2.3. Research on Green Attitudes vs. Behavior
 - 2.4. Research on Eco-Practices
 - 2.5. Research Relevant to Disaster Planning
 - 2.6. Research Relevant to Elderly-Friendly Cities
 - 2.7. Research Relevant to Child-Friendly Cities

2.8. Research on Urban Crime

3. Suggestions for Collaboration of Environmental Psychologists and Urban Planners

4. The Possible Links Between Environmental Psychology, Urban Planning and Economic Geography

5. Conclusion and Recommendations



Environmental Psychology, Urban Planning and Economics: Intersections, Crossroads & Tangents

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1. Introduction

The term ‘environmental’ in ‘environmental psychology’ has two distinct meanings as in some other research areas (of course it is also possible to do research in intersecting areas): The first involves how human beings interact with their environment in a spatial/cognitive sense. An example of this is Hund & Nazarczuk (2009) which investigate sense of direction and wayfinding efficiency. The second involves affect, behavior and cognition about environmental and urban features and problems. There is also another line of research which can sometimes be considered under the former and some other times under the other, based on the topic. These are research on perceptions of architectural structures and elements. Examples of these are Rechavi (2009) which studies the uses and psychological meaning of living room at home based on in-depth interview; Akalin et al (2009) which investigate the evaluations of house façades on the basis of preference, complexity and impressiveness; Amole (2009) which studies residential satisfaction of students in Nigeria tapping social qualities of the student residences etc among many others in this line. This paper focuses on environmental psychology in the sense of affect, behavior and cognition about environmental and urban features and problems. Many intersecting research topics are visible in this sense of ‘environment’ between environmental psychology and urban planning: Place identity and place attachment; environmental attitudes; green attitudes vs. behavior; eco-practices; disaster planning; elderly-friendly cities; child friendly cities; urban crime etc. The next section provides an overview of environmental psychology research on these topics, and discusses the possible contributions by environmental psychology to urban planning.

2. The Possible Contributions by Environmental Psychology to Urban Planning

2.1. Research on Place Identity and Place Attachment

Felonneau (2004) investigates 'urbanophilia' and 'urbanophobia' which are defined as "the degree of attraction towards or rejection of the city"; and finds that the former underestimate urban incivilities and holds a strong urban identity, while the latter overestimates them and holds a weak urban identity. In this context, Brown, Perkins & Brown (2003) find that "[p]lace attachment is also high for individuals who perceive fewer incivilities on their block, who have fewer observed incivilities on their property, who have lower fear of crime, and who have a higher sense of neighborhood cohesion and control (i.e. collective efficacy)" (p.259). Felonneau (2004) and Brown, Perkins & Brown (2003) complement each other as the former investigates urban identity, while the latter studies neighborhood attachment. Hidalgo & Hernandez (2001) compare attachment to house, neighborhood and city physically and socially, and find that the weakest one is attachment to neighborhood, while Mannarini et al (2006) investigate the relationship between image of neighborhood and sense of community. Lewicka (2010) finds that "[t]he overall best direct predictor of place attachment was neighborhood ties, followed by direct and indirect effects of length of residence, building size, and type of housing" (p.35) and suggests that "attachments to smaller (apartments, homes) and larger (city) scales of place along with their unique predictors deserve more attention from environmental psychologists" (p.35). She further states that "Place attachment, of course, is not the same as residence satisfaction or positive evaluation of residence place. Data from present studies show that lowered control and less security did not prevent participants from feeling strongly attached to their cities. Although it is probably easier to become attached to a place that satisfies basic needs or is considered pleasant (exciting or relaxing), people may be attached to a place that do not provide them with any of these. When WWII ended, previous residents of the almost totally ruined Warsaw returned to their city to live there despite the fact that only available dwellings were cellars, the whole city was in ruins, and almost no services were available. There are residents of the endangered area close to Tchernobyl who refused to leave their houses despite the radiation danger and total lack of usual services available after the accident" (p.48).

Scannell & Gifford (2010) develop a framework of place attachment in 3 dimensions (person-process-place): "The person dimension of place attachment refers to its individually or collectively determined meanings. The psychological dimension includes the affective, cognitive, and behavioral components of attachment. The place dimension emphasizes the place characteristics of attachment, including spatial level, specificity, and the prominence of social or physical elements" (p.1). This framework may be useful for urban planning professionals, as the popularity of urban projects partially depends on the ways the residents attach to the place. Scannell & Gifford (2010) suggests that the relationship between place attachment and pro-environmental behavior should be studied. The findings of this line of research can provide valuable input for urban planning professionals. It might be expected that residents who are attached to a place would keep it clean and green. Another line of research can be the links between place attachment and attachment to nature. On the other hand, Morgan (2010) criticizes the models of place attachment which are not developmental. He builds a developmental model of place attachment based on human attachment theory.

2.2. Research on Environmental Attitudes

Karpiak & Baril (2008) investigate the relationship between Kohlberg's moral reasoning model and environmental attitudes among college students. They found that developmental level of moral reasoning is associated positively with ecocentrism (defined as "belief in the intrinsic importance of nature" (p.203)), and negatively with environmental apathy; while no relationship was observed for anthropocentrism (defined as "belief that nature is important because it is central to human wellbeing" (p.203)). Boeve-de Pauw, Donche & Van Petegem (in press) study the link between adolescents' environmental worldview and personality, and find that personality does not predict environmental worldview which can be explained by the fact that adolescence is the formative period for personality. On the other hand, they also find that egocentrism and ecocentrism are considered to be opposites by Belgian adolescents. Kortenkamp & Moore (2001) study ecocentrism (defined as the belief that "nature deserves moral consideration because how nature is treated affects humans" (p.261)), anthropocentrism (defined as the belief that "nature deserves moral consideration because nature has intrinsic value" (p.261)) and moral reasoning about ecological dilemmas; and the conditions under which ecocentric and anthropocentric reasoning could be elicited, such as the presence of information about the damage to the nature.

Lima & Castro (2005) investigate 'environmental hyperopia effect' which is defined by the following statements: "concern for local environmental issues was more attenuated than for global ones, risk perception of local sources of pollution was perceived as lower than distant threats, and global sources of information about the environment were considered more trustworthy than local ones" (p.23). Similarly, Lai et al (2003) find that "hazards were appraised to be more threatening in the global than the local context" (p.369), while developing Hong Kong Chinese version of 'the environmental appraisal inventory'. Uzzell (2000) find that "environmental problems are perceived to be more serious the farther away from the perceiver" (p.307), and this is associated with feelings of powerlessness. Hatfield & Job (2001) state that "optimism bias regarding environmental degradation may inhibit pro-environmental behaviour" (p.17). These studies are important for promotion of green campaigns at city level.

2.3. Research on Green Attitudes vs. Behavior

Pichert & Katsikopoulos (2008) try to solve one of the puzzles of environmental psychology research involving the discrepancy between attitudes and behaviors in the case of using green electricity vs. 'grey' electricity. Their findings have implications for energy planning in the cities. Chasing the same discrepancy puzzle, Ohtomo & Hirose (2007) investigate the attitudes towards recycling and recycling behavior by focusing on situational and attitudinal factors in a sample of Japanese undergraduates. Both studies point out the importance of defaults and norms in particular, and contextual/situational factors in general. While Thøgersen (2004) revolves on the same puzzle focusing on consistencies and inconsistencies in 'environmentally responsible behavior', Thøgersen (2006) investigates norms associated with environmentally responsible behaviors such as 'buying organic milk', 'buying energy saving light bulbs', 'source-separating compostable kitchen waste' and 'using public transportation for work and shopping' and finds that people apply different norms for different behaviors, suggesting inconsistencies across different situations. Likewise, Thøgersen & Olander (2003) find that transfer of 'environment-friendly consumer behavior' from one domain to another is not common; and in his study of behavioral responses to climate change, Whitmarsh (2009) finds a gap between prescriptions of the policy-makers and actions taken by the public. Bamberg (2003) suggests that specific cognitions relevant to environment should be studied rather than generic variables such as

‘environmental concern’, as the generic variables can’t explain and predict specific behavioral patterns.

Converging with Pichert & Katsikopoulos (2008)’s findings about defaults, Fujii (2006) finds that perceived ease of implementation is associated with pro-environmental behaviors such as “reductions in electricity and gas use, garbage, and automobile use”. Nordlund & Garvill (2003) find that personal norms are important for “willingness to reduce personal car use”, while Garling et al (2003) find the importance of personal norms again in ‘proenvironmental behavior intention’. Clark, Kotchen and Moore (2003) identify “ecosystem health, personal health, environmental quality for residents, global warming, and intrinsic satisfaction” (p.237) as the motives to participate in a green electricity program; while Vollink, Meertens & Midden (2002) identify perceived advantage and perceived compatibility as the two most important criteria of evaluation when utility companies are making decisions about adopting energy conservation interventions.

2.4. Research on Eco-Practices

Clayton (2007) investigates motivations for gardening such as appreciation for nature, social concerns and uses etc, while Kiesling & Manning (2010) find that environmental identity predicts ecological gardening practices. This finding is important, since ecological practices are necessary for sustainable cities. To promote ecological practices, environmental identity should be addressed by urban planners. Planning professionals can collaborate with environmental psychologists to build green identities in both senses; psychological building at individual/household level, as well as material building (construction) at community and city level. On the other hand, some mixed results about the relationship between ‘green identity’ and ‘green behavior’ have been found by Whitmarsh & O’Neill (2010) which indicate that more research is necessary on this link to support urban planning policies from a psychological point of view.

Mannetti, Pierro & Livi (2004) study recycling behavior and find that personal identity in general, and “the similarity between personal identity and “identity of typical recyclers”” in particular is associated with the recycling behavior. This finding can be used in green campaigns. Knussen et al (2004) investigate the effect of past behavior of recycling, perceived habit and perceived lack of facilities on intentions to recycle household waste, while Swami et al (in press) investigate personality variables involving 3R behaviours (Reduce, Reuse, Recycle) in household waste management. Likewise, Castro et al (2009) study psychological variables involving recycling behavior. Devine-Wright & Howes (2010) conduct a case study about the attitudes towards wind farm projects with regard to the concept of NIMBY (‘Not In My Back Yard’). This research is quite valuable for alternative energy projects in cities. Finally, White & Gatersleben (in press) investigate the preferences for and perceptions of ‘building-integrated vegetation’ such as green roofs and façades. The results can be useful for urban planners and other planning professionals to promote urban agriculture/horticulture models as a way to ease urban heat island effect.

2.5. Research Relevant to Disaster Planning

Another area in which environmental psychologists and planning professionals can collaborate is the psychological factors associated with disaster preparedness. Especially as a result of climate change, a higher number of unusual weather-related events such as floods is reported. Disaster planning is a growing area of urban planning. In this context, Sundblad, Biel & Garling (2007) is useful as it investigates risk judgments concerning climate change in a sample of Swedish residents. Nilsson, von Borgstede & Biel (2004) investigate the effect of values and norms on “willingness to accept climate change strategies”. Miceli, Sotgiu & Settani (2008) that interview residents of an alpine valley in Italy about disaster preparedness and perception of flood risk is a valuable contribution from environmental psychology to urban and regional planning. Finally, Caia, Ventimiglia & Maass (2010) study psychological well-being of earthquake survivors and their attitudes towards post-earthquake temporary housing type (dacha vs. container). This is useful for post-disaster planning.

2.6. Research Relevant to Elderly-Friendly Cities

Borst et al (2009) investigate the street features that affect walking route choices of the elderly based on GIS, while Borst et al (2008) investigate the street features that attract elderly walkers such as trees along the route, bus and tram stops, passing through parks or the city centre, traffic volume etc. Likewise, Foster, Giles-Corti & Knuiman (in press) study the factors that make neighborhoods attractive for pedestrians, summarized in the concept of ‘walkable streetscapes’.

Lord, Despres & Ramadier (in press) investigate the relationship between built environment and the reduced daily mobility of the elderly by a qualitative and longitudinal design. Oswald et al (2006) develop a “four-domain model of perceived housing in very old age” which covers “housing satisfaction, usability in the home, meaning of home, and housing-related control beliefs” based on a sample of 1223 octogenarians living alone. These studies are especially useful for planning cities in rapidly ageing countries such as Europe and Japan. As the proportion of urban elderly is increasing, more public participation by the elderly is important for a higher quality of life for residents and for resident satisfaction. Environmental psychology can fill this gap by offering its findings, methodology and services for urban planners which plan elderly-friendly cities.

2.7. Research Relevant to Child-Friendly Cities

The papers that stand at the intersection of environmental psychology and child-friendly urban planning are promising. Kyttä (2004) investigates children’s independent mobility and child-friendly environments. Rissotto & Tonucci (2002) investigate elementary school children’s representation of home-school itinerary and different modes of travel (alone, with an adult, on foot, by car etc). Francis & Lorenzo (2002) discuss various approaches to children’s participation in urban planning. In their article discussing children’s participation, Sutton & Kemp (2002) present design charrette method which is defined as “an intensive, hands-on workshop which designers and citizens collaborate to solve a community design problem” (s.171). Horelli & Kaaja (2002) discuss the opportunities opened up by internet-assisted urban planning tools for children’s participation to urban planning. Chawla & Heft (2002) discuss how to evaluate the level of participation of children and adolescents. Morgan (2010) is another contribution to child-friendly cities debate, as it proposes a model that explains how place attachment develops from

childhood onwards. These and related studies can be elaborated to provide inputs to child-friendly city models in urban planning.

2.8. Research on Urban Crime

Ceccato (2005) investigates homicide patterns in Sao Paulo and finds that peak times of homicide are when the people have free times (vacations, evenings and weekends). This finding has implications in crime prevention and activity planning as part of urban planning whereby the residents can be introduced to leisure activities such as sports in their free times. Secondly, Brown, Perkins & Brown (2004) study the block and individual effects on incivilities, place attachment and crime which identify the properties of neighborhoods associated with crime. These papers differ from research on crime in different areas such as social psychology, sociology etc by the fact that their focus is exclusively spatial. The research in other areas is not necessarily spatial. This is one of the distinguishing features of the studies relevant to urban planning.

The logo for iafor (International Association for Applied Psychology) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue arc on the left and a light orange arc on the right, which together form a partial circle around the text.

3. Suggestions for Collaboration of Environmental Psychologists and Urban Planners

Robin, Matheau-Police & Couty (2007) develop a scale of perceived environmental annoyances in urban settings which can be used as a screening tool by planning professionals at city and district levels. The statistical analysis revealed 7 principal dimensions: “Feelings of insecurity, inconveniences associated with using public transport, environmental annoyances and concerns for global ecology, lack of control over time related to using cars, incivilities associated with the sharing of public spaces between different users, lack of efficiency resulting from the density of the population, and an insecure and run-down living environment” (p.55).

Gatersleben et al (2007) study expectations for and perceptions on a new underground line in 5 areas in London. It is useful, as it gives clues about bottom-up views on the project. In some cities, participatory planning approaches are applied, where such research is conducted as an indispensable part of the preparation stages for the urban projects. On the other hand, there are differences in the methodology of an urban pre-implementation research and relevant psychological research. The former is mainly qualitative; while the latter is mostly quantitative. The former is spatial (it involves maps), the latter is rarely spatial. The former is data-driven, the latter is theory-driven. The former is practical, the latter is mostly theoretical. The former is not only descriptive, it is also prescriptive (it always involves recommendations); while the latter is only descriptive. In the former, knowledge is the by-product of participatory planning process; in the latter, knowledge is the main product. In the former, process of research is more important; in the latter the results are more important. The former can't be experimental, while the latter can. These differences are shown in Table 1.

Table 1. Differences Between Urban Pre-Implementation Research vs. Relevant Psychological Research

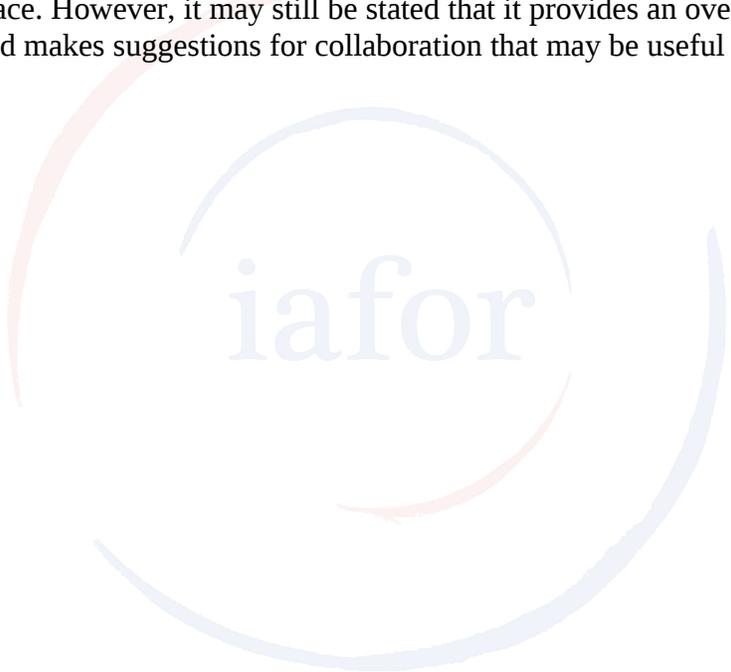
Urban Pre-Implementation Research	Relevant Psychological Research
Mainly qualitative	Mostly quantitative
Spatial (involves maps)	Rarely spatial
Data-driven	Theory-driven
Practical	Theoretical
Descriptive and prescriptive	Descriptive
Knowledge is the by-product.	Knowledge is the main product.
Process is important.	Results are important.
Not experimental.	Sometimes experimental.

Unlike the clear-cut distinctions above, Wells (2005) is at the intersection of environmental psychology and public participation, as it investigates ‘low-income women’s participatory housing experiences’ in partnership with self-help housing organization, and the sense of ‘self confidence, optimism, and determination’ etc, based on a combination of quantitative and qualitative methodologies. Secondly, Lima (2004) investigates risk perception and mental health of residents living near a waste incinerator plant. Although this line of intersecting research is promising, it is still rare.

One neglected line of research in environmental psychology is the psychology of intentional communities (planned communities). Kirby (2003) which is a case study on the ecovillage at Ithaca (USA) is a valuable exception. Another neglected research topic is the variables associated with environmental activism. McFarlane & Boxall (2003) is an exception.

Considering the sustainability and the debate against oil-dependent cities, more research is necessary on urban transportation choices. Although they have no such agenda, Evans & Wener (2007) study some of the factors that affect passenger satisfaction in urban trains; and Antonson et al (2009) investigate the effects of landscape type (open, forested, and varied) on driving behavior by a driving simulator, and discuss the implications of the findings for traffic safety. Such studies should adopt sustainable transport frameworks to collaborate with urban planners; albeit that they still have implications for urban transportation planning (and train design in the case of Evans & Wener (2007)) even without the greening of their research agenda.

Environmental psychologists need to reframe their studies to collaborate with planning professionals, as some of environmental psychological research are parochial and inward-looking. The brilliant models and findings are of no use if they can't be utilized to raise urban quality of life. As a limitation of this paper, we can state that this paper can't be comprehensive enough to cover all or most of the environmental psychology research relevant to urban planning in such a limited space. However, it may still be stated that it provides an overview of the relevant research and makes suggestions for collaboration that may be useful for both professions.

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4. The Possible Links Between Environmental Psychology, Urban Planning and Economic Geography

Mackinnon & Cumbers (2007) present 4 approaches in economic geography: Traditional approach, spatial analysis approach, political economy approach, and institutional/cultural approach. The traditional approach is based on the philosophy of empiricism, classical German geography, anthropology and biology. It conceives economy as “[c]losely integrated with the natural resources and culture of the areas” (Mackinnon & Cumbers, 2007, p.23). Its geographical orientation is “[c]ommercial geography stressed global trading system” and “regional geography highlighting unique places (regions)” and its geographical focus is “colonial territories, distinctive regions, mainly in Europe and North America, often rural and geographically marginal” (Mackinnon & Cumbers, 2007, p.23). Its key research topics are “[e]ffects of the natural environment on production and trade; identifying distinctive regional economies” and its research methods are “[d]irect observation and fieldwork” (Mackinnon & Cumbers, 2007, p.23).

The spatial analysis approach is based on the philosophy of positivism and neoclassical economics. It conceives economy as “[d]riven by rational choices of individual actors” (Mackinnon & Cumbers, 2007, p.23). Its geographical orientation is “[w]ider forms of spatial organization” and its geographical focus is “[u]rban regions in North America, Britain and Germany” (Mackinnon & Cumbers, 2007, p.23). Its key research topics are “[i]ndustrial location; urban settlement systems; spatial diffusion of technologies; and land use patterns”, and its research methods are “[q]uantitative analysis based on survey results and secondary data” (Mackinnon & Cumbers, 2007, p.23).

The political economy approach is based on the philosophy of dialectical materialism, Marxist economics, sociology and history. It conceives economy as “[s]tructured by social relations of production, [d]riven by search for profit and competition” (Mackinnon & Cumbers, 2007, p.23). Its geographical orientation is “[w]ider processes of capitalist development; and [p]laces as passive ‘victims’ of these wider processes” and its geographical focus is “[m]ajor cities in industrial regions in Europe and North America; and [c]ities and regions in developing countries, especially Latin America ” (Mackinnon & Cumbers, 2007, p.23). Its key research topics are “[u]rbanization processes; industrial restructuring in developed countries; global inequalities and underdevelopment” and its research methods are “[r]einterpretation of secondary data according to Marxist categories; and [i]nterviews” (Mackinnon & Cumbers, 2007, p.23).

The institutional/cultural approach is based on the philosophy of postmodernism and institutionalism, cultural studies, institutional economics, and economic sociology. It builds its understanding on the “[i]mportance of social context” and on the assertion that “[i]nformal conventions and norms shape economic action” (Mackinnon & Cumbers, 2007, p.23). Its geographical orientation is based on an “[e]mphasis on individual places in context of globalization” and its geographical focus is “[g]rowth regions in developed countries; [g]lobal financial centres; and [k]ey sites of consumption” (Mackinnon & Cumbers, 2007, p.23). Its key research topics are “[s]ocial and institutional foundations of economic development; consumption; work identities; financial services; and corporate cultures” and its research methods are “[i]nterviews, focus groups, textual analysis, ethnography, and participant observation” (Mackinnon & Cumbers, 2007, p.23).

There are rooms for environmental psychologists especially in the third and fourth approaches: Environmental psychologists can study the psychological variables concerning profit and competition motives of companies. The topic can be narrowed down to greening of these companies, and the motivations of green companies in the areas of green production, green supply chains, pollution mitigation, gardening materials etc. One interesting topic might be the possible clash of green companies in case of profit maximization vs. ecocentrism. Another topic may be how urbanization and suburbanization and accompanying problems such as densification vs. sprawl, formal vs. informal housing etc can affect mental health and related psychological variables. A fifth topic may be the psychological effects of industrial restructuring, whereby industrial labor in high-income countries are losing their jobs, as industries are moving to cheap labor paradises such as China and Vietnam. This topic can be widened to cover psychological problems of workers in 'cheap labor paradises' (or 'cheap labor hells' depending on your position in relations of production). Sixth topic can be the psychological effects of global inequalities and underdevelopment. This may include media effects which reduce the feelings of frustration in some cases and precipitate them in other cases. Seventh topic may be reframing of environmental psychology findings from a Marxist point of view. This view is totally lacking in environmental psychology.

As to the fourth approach, environmental psychologists can study cultural issues affecting global economies such as ethnic production, consumption, and marketing, Chinatowns, 'Little Indias', 'Little Saigons' etc. Informal networks can be more visible by a psychological point of view. Green finance can be another topic of environmental psychology. For example, environmental psychologists can study psychological determinants of investor decisions for carbon trade. As institutional/cultural approach also focuses on identity issues, there are immense areas of collaboration for environmental psychologists. Another focus of this approach is corporate cultures which is obviously a topic of interest for environmental psychologists, especially in the case of their 'greening' decisions. On the other hand, to collaborate with the institutional/cultural approach, environmental psychologists should be more positive about qualitative methodology. Of course, these topics can be studied by economic psychologists, given that economic psychology has an older tradition; however, economic psychologists are not spatial in their outlook.

5. Conclusion and Recommendations

In this paper, we focused on the intersections among the areas of environmental psychology, urban planning and economic geography. As these areas are very large, this paper in no way provides a comprehensive overview of these three. However, the real intention behind this paper has been making some suggestions for future collaboration. In that sense, as the intersecting research papers will increase in numbers, this paper will fulfill its mission. The paper concludes with some recommendations for collaboration:

- Environmental psychologists should be GIS-literate or Google-Earth- literate. This is a prerequisite for a spatial understanding of urban and environmental problems and issues.
- Environmental psychologists should be more practice-oriented.
- Urban planners should include psychologists in their teams to receive inputs on topics such as place identity and place attachment; environmental attitudes; green attitudes vs. behavior; eco-practices; disaster planning; elderly-friendly cities; child friendly cities; urban crime etc.
- Economic geographers of political economy approach and of institutional/cultural approach can collaborate with environmental psychologists to investigate topics such as psychological variables associated with profit and competition motives, urbanization, culture, identity, consumption etc.
- As public participation approaches are getting more and more common in urban planning practice; environmental psychologists and economic geographers can be part of urban planning teams, as their views, data and methodologies will be valuable for grassroots democratization of urban planning.

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Psychology in the Decision Making of Industrialised Building Systems (IBS): A Field of Application

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Abstract:

Research in decision making is diverse in content and perspective. There is much to be learned from more fundamental managerial disciplines. Decision making is a sub-set of human behaviour rather than a completely separate phenomenon. Currently, there are likely that few decisional issues in the application of Industrialised Building Systems (IBS) require the invention of a completely new theory. If IBS technology research bases its viewpoint only on technical and managerial issues, its development will become less relevant to the construction world at large. In order to explore decision research methods into IBS decision making, psychological elements are applied to determine their influences on the decisions of IBS technology application. This paper discusses psychological elements that are relevant to decision making and the focus is on the adoption of IBS technology in building construction. This is presented by a discussion of psychological factors influencing the decision making of construction technology application. This is followed by a review of some predictions on the future of behavioural economics in construction technology application. This paper is concluded by suggesting that the research of psychology decision making should positively contribute to decision makers' awareness, knowledge and skills, and these contributions should aim at the effectiveness of decision making in IBS technology application.

Keywords: decision making, psychology, Industrialized Building Systems.

1. Introduction

The application of psychology is usually seen to be about individual behaviour in social science and health-related studies. While these areas would not have a problem in seeing the importance of people in their organisational and industry context, it becomes noticeable that this aspect can be highly appreciated if it is also essential to investigate how people make decision in technical environment or technology context, particularly in construction industry. It can be articulated that it is impossible to understand the decision making of technology adoption without appreciating the behavioural and psychological context in which they perceive, make sense and relate to the construction practices. According to Weiten (1998), "psychology refers to the scientific studies of behaviour and underlying mental and physiological processes in acquiring knowledge with social psychology which focuses on interpersonal behaviour such as conformity and group behaviour; and cognitive psychology which focuses on higher mental process such as reasoning, information processing problem solving and decision making" (p.39). Despite considerable effort to understand and represent decision making by construction entities, there has been little attempt to integrate socio-economic, psychological and construction technology variables within a comprehensive framework.

Beyond its specific and important role in exploring Industrialised Building Systems (IBS) technology adoption, psychology decision making is fundamentally an applied discipline and this makes it highly relevant to contribute to technology adoption decision and also to the policy of IBS technology adoption itself. This view persisted when the Malaysian construction industry has been implementing the adoption of IBS technology in building construction. IBS technology is the mass factory-produced building components off-site, then they are properly assembled and joined on-site to form the final units (Badir et al. 2002). Sarja (1996) defined IBS as “the term given to building technology in which modern systematic methods of design, production planning and control as well as mechanised and automated manufacture are applied”.

2. Background

Psychology in decision making, referring to the decisional context of IBS technology adoption, may perhaps assist construction industry to address the slow adoption of this building technology by taking into account social and individual approaches to this problem. Kadir et al. (2006) reported that the current thinking on IBS is that the contractors prefer to choose conventional building system rather than proposing IBS system since shifting of building system from conventional to IBS is not motivated by cost factors and furthermore, most contractors have been exposed and trained in conventional building system for decades and there is an abundance of cheap foreign workers in Malaysia (p. 12). Thus, psychological and technological context stipulate decision makers' perception and behaviour in construction environment.

The construction dynamics in which perceptions occur, attitude are formed and behaviour takes place, also implies to look at the psychological dimensions as it is difficult to understand decision making process without taking into account the decision makers' background, exposure, viewpoint and their capacity in the building technology adoption of construction projects. In behavioural decision making, decision makers have to response the changes of its environment and they prefer to use perceptual rather than analytical processes based on the trade-off between speed and accuracy of performance (Vassey, 1994). As advances in psychology can be applied to economics in terms of human economic behaviour, Simon (1959) asserted that the decision maker's information about his or her environment is much less than an approximation to the real environment as people live in a dynamic environment with some inferences from the values and facts based on perception, believes and knowledge that characterise the personality.

According to Sauermann (2004), the following strategies are commonly used in behavioural decision making: a) weighted additive strategy which is an alternative-based that requires a large amount of information processing as the decision maker assess each aspect and weights its value according to his or her preference, b) equal weight strategy that requires less information processing and involves less information on preferences as the values of the attributes are equally weighted. c) Lexicographic strategy which requires a decision maker to select the best option based on the most important attribute. Glueck and Jauch (1988) revealed that there are three major approaches to decision making namely the rational-analytic approach (traditional view) where decision are viewed as being analytical, conscious and rational since the decision maker considers all available alternatives systematically; the intuitive-emotional approach where a number of alternatives are considered but unconscious process are used to save time and the political-behavioural approach where decision maker has to face competing pressures and decision result are the compromise of negotiation and mutual adjustment.

3. Decision Making Process and Behavioural Economics

The impression that behavioural studies could examine issues literally on cross-industries approach seems questionable. Yet, traditionally behavioural economy deals with people-economy-technology at various fields: from the social science, the management science, the business management, through technology management to the technical and engineering area. In the study of human decisions, the illumination of decision making principles and behaviour analysis can have greater impact on behavioural economics (Fantino, 2004). Moreover, the implementation of firm's strategy requires a set of careful decision criteria such as economical, psychological and cultural aspects at group or individual levels (Milani et al., 2005). According to Winquist and Larson (1998), decisions are eventually made by groups and the members prefer to select their shared rather than unshared information as shared information can influence the preferred choice but unshared information significantly influenced the quality of their decisions.

Although behavioural decision making research is concerned with how people make choices, behavioural decision making is predicted by individual differences in sensitivity for rewards but not based on impulsive personality traits (Franken and Muris, 2005). According to Leiser and Azar (2008), in economic psychology, the combination of behavioural economics and decision making promotes good interdisciplinary studies in order to explore whether decision makers have made the right economic choices based on the reasons of having made a decision, their personal beliefs and risk preferences. Identical to individual decision making, Lyon et al. (2000) stated that firms' behaviour can be observed, managed and measured.

4. Psychological Theory

Cognitive and social psychology are among fields that provide knowledge bases needed to design the technology adoption information for supporting technology decision for effective construction individual, firms and industry responses to IBS technology adoption. The basis of team decision is personal or individual decision and this decision-making behaviour depends on two major categories namely social psychology and cognitive psychology (Ying et al., 2005). According to naturalistic theory, decision making is based on personal experience and competence without quantitative data but considering cognitive, behavioural and environmental factors in real world (Lizárraga et al., 2007). In social psychology, people's knowledge and thought within the world are not standardised due to their interests, degree of knowledge aimed at changes, facts and general ruling principles (Schuetz, 1944). Moreover, with the new social movements as pointed out by Stern (1999), change in attitude and behaviour can be explained by social psychological theory. Whereas, in cognitive psychology, Bandura and Jourden (1991) discovered that decision making research involves the understanding of how decisional activities are affected by judgemental operations as in dynamic environment; decisional rules must be learned through exploratory experiences by self-belief of value, personal goal setting, self-evaluation and the quality of analytic thinking that requires the effective cognitive processing of ambiguous and uncertain information.

As a part of cognitive psychology, human judgement and decision making behaviour that is characterised by outcome and information uncertainty involves the process of basic cognitive mechanism using a mental model which organises prior experience and information based on problem's proposition throughout the years of learning and maturation (Pitz and Sachs, 1984). Kim et al. (2008) pointed out the choice satisfaction of decision making could be increased by cognitive control processes with choice options evaluations prior to making a decision and the integration of cognitive and emotion evaluation to produce positive effects. Based on psychological theory, decision makers have their own cognitive effort considering the justifiability of alternatives, the properties of real world decision environment and bias in decision making which arises from different sources (Loewenstein and Lerner, 2003).

5. Psychology and Decision Making

Traditionally, subjects of psychological research, both fundamental and applied, tend to be conceived at the individual level: the mind, conscious experience or obvious behaviour is all studied in their nature and characteristics of functioning within a single person or firm. Generally, decision making is a behaviour that reveals the visible outcomes of psychological process. Decision makers for instance, tend to emphasize the priority of decision principles and all principles can be important but their relative importance can depend on the decision making itself. Moreover, the causal factors may interact. For example, attitudinal factors can become more influential when contextual factors do not exert strong pressures on decision making and even strong financial incentives may fail to change behaviour unless information is provided in effective ways. For these reasons, conclusions about the causes of individual decision making are unlikely to generalize to contexts with very different infrastructures, institutions or incentive structures. Psychology alone cannot produce adequate understanding of environmentally significant individual decision making. An interdisciplinary approach is needed in which insights and concepts from psychology are combined with those from economics, sociology, and other relevant disciplines. In this matter, contemporary research on the psychology of decision making by Messick and Bazerman (1996) involves three major groups of theories that are theories about the world in terms of the ways in which our decisions influence the world based on the judgement of risk, discounting the future, uncertainty, perception of causes, focus on people and moral responsibility; theories about other people in terms of how others influence the ways in which people make decision based on ethnocentric perception as “our” way is normal and preferred and other ways are inferior, besides the element of stereotype and theories about ourselves in terms of individual traits based on illusion of superiority, illusion of favourability, illusion of optimism, illusion of control, overconfidence and self-serving fairness biases.

Usually, the unique nature of strategic decisions involves complexity, uncertainty, high cost, absence of information and long term effects require substantial elements of judgements and a highly detailed analysis by individuals with the most appropriate psychological qualifications in order to improve the quality and effectiveness of these decisions (Gilligan et al., 1983). Given the shortcomings of the classical decision theory or rational-economic model, an alternative perspective has emerged that provides a more descriptive view of managerial behaviour which termed as a behavioural theory of decision making or administrative model which acknowledges the real-world limitations on manager’s decision making that provides bounded-rationality where decision makers are restricted in their decision making process (Vecchio et al, 1992). Irrationality of individual decision making is examined from a psychological perspective, thus it is important to reduce or minimise those psychological factors such as perception, attention, memory, heuristics, bias and other factors like personality, experience, motivation, feelings, emotions, skills and abilities, which limit rationality in decision making (Jennings and Wattam, 1994). However, in recent years this assumption has been challenged by behavioural economists, who have identified additional psychological and emotional factors that influence decision-making (Lerner et al., 2004).

6. Psychology in IBS Decision Making

Much work within construction economics is concerned with understanding and modelling the processes and consequences of decision making among construction firms. The usefulness of predicting the behaviour of decision makers in construction industry with respect to IBS policy and technology assessment is not well known and models of decision making in this area should be developed for a variety of specific situations. As the science of human behaviour, psychology is necessary to understand and manage the decision making of technology adoption. Psychology is needed to clarify the behavioural and social processes underlying IBS technology adoption, to

determine the effects of environmental influences on IBS decision making, to specify effective behavioural strategies for reducing conventional construction methods and to assist policy-makers in formulating and improving IBS technology adoption.

A crucial decision making issue in IBS technology adoption can be adequately addressed by incorporating behavioural aspects and how best to reveal technology adoption and responses to the policy of construction practices. This is not a straightforward issue of applying behavioural elements in technological and technical construction practices. Thus, it requires the transformation and integration of psychology, strategic management, economics, technology management and construction practices knowledge. It involves managerial and technological process informed by social science knowledge. As illustrated by Figure 1, psychology in IBS decision making can be represented in a contextual framework with the relationship between the way of thinking and behaving of individuals as a decision makers and their environment. This includes the internal and external environment of decision makers in construction industry.

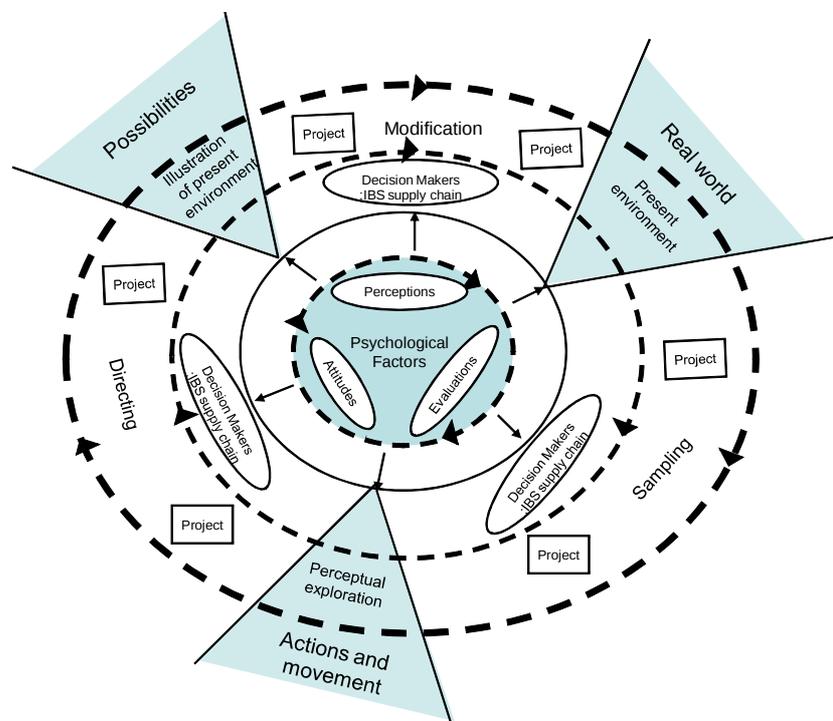


Figure 1: Contextual Framework of Psychology Factors in IBS Decision Making

Psychology in decision making explores individuals and groups decision making in their social and physical context, by giving major focus to IBS supply chain members and IBS technology adoption based on their perceptions, evaluations, attitudes, representation and accompanying behaviour. Economics and social psychology are heuristics tools for identifying factors that influence specific behaviours such as values, attitudes, habits, social norms, personal norms and perceived behavioural control, meanwhile economics focuses on the influences of internal and external factors explaining intentions to act (Kallbekken et al., 2008). Addressing the concept of attitude, Dohmen et al. (1989) clarified that an entity becomes an attitude object if a person states an evaluative judgment toward which a cognitive, evaluative or intentional orientation of an individual is directed (p.19). According to Eiser and van der Pligt (1988), the concept of attitude is important in social psychological theories as attitude is crucial in human decision making because behaviour is seen as determined by intention and intention is a joint product of attitude towards the behaviour (p.26). Moreover, decision making process in organisational context comprises a set of roles with different attitudes related to the process based on participant's roles and motivations (Vári and Vecsenyi, 1984). In the case of building technology adoption, as

illustrated by Figure 2, the perception of IBS technology, may or may not be based upon information and knowledge and/or psychological reaction towards IBS decision.

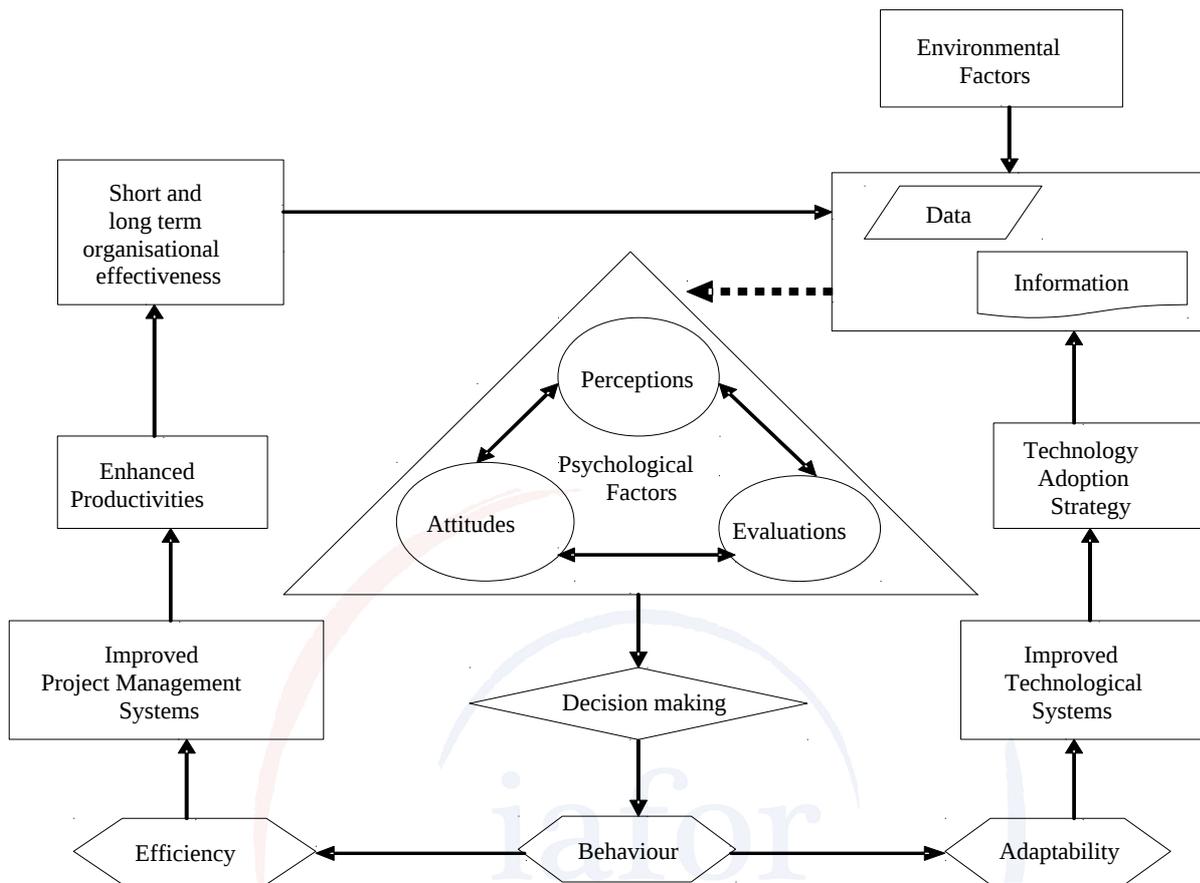


Figure 2: Conceptual Model of Psychology Factors in IBS Decision Making

In decision making, many beliefs and values may underpin an attitude. The open attitude trait might also be important in many firm decision-making situations, especially relating to information gathering and in the adoption of new technology. There are obvious limits to how much of individual behaviour can be explained as a function of values, attitudes, personal norms, and other social-psychological factors. Besides that, psychology in decision making also focuses on both the effect of environmental influences such as politics, economic, social, and technology factors on behaviour in addition to how decision makers perceive and acts on IBS technology adoption based on these factors. Behavioural and environmental factors are one way or another linked in their effects on the perceptions and behaviour of decision makers as these factors must be thoroughly considered in technology decisions. In order to effectively understand these factors, psychology decision making in IBS technology adoption aims at identifying processes which regulate and mediate their relationship. This conceptual model also focuses on environmental influence and the consequences of human behaviour. According to Lin (2003), technology decisions are shaped by a set of organisational factors based on one's self-confidence in evaluating technology innovations and the success or failure of technology adoption is based on the need for innovativeness and users' experience as a result of systems control by government and industry policies with system factors such as regulatory, technology culture and industry trend.

Fox (1984) stated that "it cannot be claimed that human knowledge is exclusively rule-based as perception and imagery are important in decision making" (p.315). As advances in psychology can be applied to economics in terms of human economic behaviour, human decision making

conceptualises the human mind based on differences in perceptions, subjective experience and future judgments with cost benefit consideration which helps in understanding decision making impacts (Pronin et al., 2008). Psychological science and its insights have not been fully utilised to understand slow technology adoption. Yet psychology can contribute in at least three ways: by exploring the behavioural factors of decision making that is important for causing technology reluctant behaviour, by contributing to the understanding of interdisciplinary areas in IBS technology adoption and by determining significant psychological dimensions that influence IBS decision.

7. Rationale of Psychology Application in IBS Decision Making

In order to meet these demands on behavioural science, psychology will have and need the opportunity to expand its scales of analyses in the study of human cognition and action plans reinforcing variables operating on behavioural learning, attitude formation and perceptions. Not only will such expansions of psychology's traditional scale of study enhance the input, psychology discipline should have contributions to other industry. Most likely psychology discipline will also further theory development in other areas, in particular towards enhanced technology adoption, within the discipline itself as behavioural research on IBS decision making is based on several ideas:

a) Values and attitudes

The idea to adopt IBS technology in building construction is to generate efficiency in project management and achieving the effectiveness of resources utilisation especially on workforce, site management and overall cost structure. The element of attitude is also significant in determining the intention in the use of building material that should be considered with other additional realistic behavioural elements such as task and personal characteristics (Bysheim and Nyrud, 2009). People's attitude towards the improved construction activities should be changed, especially in the developing countries like Malaysia. There are several problems with this belief. First, pro-conventional method and upholding of this status-quo are already strong in the most of established construction entities. Also the connection of values and attitudes to behaviour are unpredicted because; besides behaviour complexity, behaviour also depends on a variety of other affecting factors such as policy, infrastructure, institutions, incentives and individuals' skills, knowledge and abilities regarding attitude-based behaviour. In most cases, the input to behaviour is its immediate context, besides optimistic values. Changing values may also have a huge influence on behaviour in the long term but it is mainly as an indirect factor unlike policies, institutions and incentives that shape behaviour.

b) Skills, knowledge and awareness

Normally, there is a belief that skills, knowledge and increased awareness are the key to adopt construction technology in solving construction project difficulties. However, broader knowledge on efficient construction technology such as the widespread recognition of overall effects from IBS technology adoption may have larger effects, but not much is known about why some IBS technology application lead to industry adoption, government policy and social movement activity. In this regard, the assimilation of psychological dimensions into the skills, knowledge and awareness of construction technology is beneficial in understanding IBS technology decisions.

c) Firm's option

Although the attribute of adopting construction technology is based on firm's choices, the major causes of most construction delays, construction waste and dependency on foreign labour are the actions of construction firms. Thus, changing construction entities' attitudes towards better

construction practice by adopting IBS technology can contribute to higher construction quality and productivity.

d) Motivation

Basically, perceived IBS technology drive tends to encourage adaptive technology only when the benefits are perceived to be significant and when cost-effective responses are well-known and available. Technology adoption without the perceived ability to cope leads to maladaptive responses such as minimizing the risk of negative assessment on IBS technology.

Dealing with IBS technology decision requires the synergistic role of behavioural component particularly on psychology in addition to technical, managerial and technological specialists. The theoretical and methodological approaches of psychology within decision making tasks and IBS technology adoption are different but complementary. Thus, it may be beneficial if the lessons learnt in one research domain will be tried and tested in the other. In order to achieve this, synergistic goals between IBS technology adoption and psychology decision making as shown in Table 1 should be explored in collaboration with environmental influences.

Table 1 Synergistic Goals between IBS Technology Adoption and Psychology Decision Making

Goal:	IBS Technology Adoption	Psychology in Decision Making
Political	To support IBS technology adoption regulations, guidelines and policies.	To cultivate positive attitude towards technology policy.
Economic	To create overall cost effectiveness in project implementation.	To evaluate all economic rationales without 'bias' consideration in decision making.
Social	To encourage less dependency on foreign labour.	To foster positive perceptions towards workforce efficiency.
Technology	To promote efficient and effective building technology.	To encompass technological mind-set in decision making.
Consumerism	To provide improved building technology with environmental concern.	To perceive consumer as an important consideration in decision making.

In decision science, technology adoption decision involves inter-firm coordination, interplay reaction across individuals in different stakeholders group and interventions based on contemporary research problem and multidisciplinary work with the consideration of technology outcomes, environmental factors, feelings, reactions and personality characteristics (Venkatesh, 2006). Above all, the incorporation of psychology in decision making may clarify the perceptions and attitudes about IBS technology adoption, maintained by different stakeholder groups as a basis for continued disregard, for business-as-usual, or for strategic change and policy acceptance regarding IBS technology. Thus, to be effective, technology adoption strategy must be carefully regulated towards those evaluations, perceptions and attitudes. However, the psychosocial factors have been approached with less attention and clarity than either the technical or economic dimensions of IBS technology. This represents a challenge for the incorporation of psychology in IBS decision making as psychology has the potential to make a significant contribution to sustainable construction policies.

8. Conclusion

Although technical skills, knowledge, evaluation and assessment have an important contribution to make the resolution of slow IBS technology adoption that are related to the uphold of conventional building methods instead of IBS technology, this situation is the outcome of

maladaptive technological behaviour and thus require the contribution of social and managerial science. Only interdisciplinary approaches will provide effective strategies to address the major slow IBS technology adoption in Malaysian construction industry. Behavioural economic studies particularly on psychological dimensions will have and need the opportunity to expand its scope in the study of technology decisions. Psychology has contributed and can offer more to the understanding processes beyond the individual decision that is important to construction technology change. Notwithstanding this, it should not be assumed that a heightened technology awareness of IBS in building construction will automatically lead to firm's adoption of more technological based building method rather than conventional method. Psychological standpoints put forward that construction firms are more likely to concern about issues according to financial interests particularly on profit generation from construction projects rather than the real process of building technology adoption.

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Improving problem solving skills by learning and playing chess among university students in Iran

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Abstract

"The great end of life is not knowledge but action". Thomas H.Huxley (1825-1895)
Based on a contextualized and real- life learning, the aim of this study is to evaluate the effect of chess playing in a real-life situation on problem solving skills among university students. According to Perkins (1995), one of the three basic aspects of true intelligence is reflective. This aspect refers to the role of strategies in memory and problem solving. The research design used in this study is an experimental one, including experimental and control groups, participating in a pretest – posttest procedure. The samples consisted of fifty four students from various faculties, excluding the faculties of Basic Sciences and Engineering. The sample was selected according to a cluster random sampling procedure. After screening on the basis of the knowledge and skills of chess playing, the students were divided randomly into two groups of twenty. After conducting the pretest among both the experimental and control groups, the experimental group was trained in an authentic-based and real-word learning course for chess playing. The course lasted tow months, including sixteen sessions, tow hours per session. The problem solving scale was the Eysenck I.Q. tests (1969).After tow months training, posttest was conducted among both the experimental and control groups. Using t test for two independent groups, the means scores between experimental and control groups were significantly different ($P \leq 0.05$). In conclusion, given that intelligence is the capacity to learn from experience, the key ingredient of problem is solving, and the ability to adapt to the surrounding environment, the findings show that learning and playing chess- framed within real-life context-can improve problem solving skills.

Key words: Problem solving , chess playing, authentic learning,university student .

1. Introduction (Theoretical Framework)

"The great end of life is not knowledge but action". Thomas H.Huxley (1825-1895)

A problem arises when a living creature has a goal but does not know how this goal is to be reached whenever one can not go from the given situation to the desired situation simply by action, then there is recourse to thinking ... Such thinking has the task of devising some action which may mediate between the existing and the desired situation (Duncker, 1945, P.I).

What constitutes a problem and what is problem solving? A few of definitions and concepts are introduced here. Perhaps the above definition of problem and problem solving, given by Karl Duncker, arguably the father of research on problem solving, is the most comprehensive one. According to Anderson (1980) problem solving is defined as any goal-directed sequence of cognitive operations. On the other hand, the view of problem solving emphasized in Duncker's quotation can be summarized as follows: "What a person does when he does not know what to do?" (Wheatley, 1984, P.1, Cited in Frensch & Funke, 1995).

Problem solving does not usually begin with a definition of a problem; rather most problems must be identified within their environments. Indeed there are many stages of problem solving: problem recognition; problem definition; and problem representation. These three components are metalevel executive processes, called metacomponents in Sternberg's (1985) triarchic theory of human intelligence. This theory proposes that metacomponents guide problem solving by planning, monitoring, and evaluating the problem solving process. The metacomponents include such processes as recognizing the existence of a problem; deciding how to represent information about the problem; generating the set of steps needed to solve the problem; and finally monitoring the problem solving process while it is ongoing (Pretz, Naples & Sternberg, 2003).

It is assumed that playing chess is related to skill acquisition and intelligence. As a general descriptive frame work, Fitts and Posner (1967) described skill acquisition as a three-stage process. The first stage is called cognitive. At this stage, the learner must encode rules and develop strategies for task accomplishment. This stage is highly dependent on the kinds of specific abilities that underlie general intellectual abilities, such as memory, reasoning as well as particular content abilities, such as verbal, spatial, or numerical abilities, depending on the task content (Ackerman, 2005). Kyllon & Christal (1989) propose that skilled performance is associated with four sources of influence, two of which are mentioned briefly as the capacity of the working memory and the speed of processing, including encoding information into working memory; retrieving knowledge from the long term memory and executing a motor response.

In addition, Raab & Gigerenzer (2005) introduced intelligence as a smart heuristics. They view intelligence as a fast and frugal heuristics orientates toward a concept that models intelligence as parts of the adaptive toolbox. They propose a radically different view of intelligence that links cognition with behavior in terms of heuristics. Chess playing is a Take-the-First Heuristic. It describes how people generate alternatives from their memory. It is known that in chess, experts can generate a large number of options, but that the first ones generated are often the best options (Klein et al., 1995). Take-the-first describes how options are generated from memory (Johnson & Raab, 2003). The options are generated in the order of their appropriateness in a specific situation. In chess, take-the-first looks up

alternative options by search rule ,because chess playing is a familiar ,yet ill-defined task. Take-the-first heuristic chooses one of the initial options, once a goal and strategy have been defined like playing chess (Klein et al.1995).

Intelligent heuristics hinges on the assumption that cognition and environment are integrally interconnected and should not be considered in isolation.The appropriateness, or intelligence, of a cognitive strategy is dependent on the conditions and constraints of the environment (Pretz & Sternberg, 2005).

After analyzing and summarizing the above-mentioned theoretical frame works, one can concluded that playing chess is an important field that can synthesize and unify all of the constructs and concepts that have been proposed earlier. Chess is a game, in which the player encounters a problem; thus the early stages of the problem solving process—namely, problem recognition, problem definition and problem representation--should be taken into consideration. Psychologists describe the problem solving process in terms of a cycle (Bransford & Stein, 1993).The cycle consists of several stages in which the problem solver must engage in, ranging from problem identification to evaluating the solutions for accuracy (Pretz, Naples & Sternberg,2003).Cognition and intelligence play a major role in playing chess. Top-down approaches to intelligence include constructs such as reasoning ,problem solving, skill learning, decision making, transfer of knowledge , working memory and attention , cognitive control, flexibility of strategy use, contextualized intelligence, intelligent heuristics, and knowledge (Pretz & Sternberg ,2005) .It is assumed and that the above-mentioned constructs dramatically contribute to playing chess.

2. Research Evidence

Empirical support for the belief that playing chess can improve problem solving skills is rather strong. Wang & Fu (1997) studied the relationship between problem presentation and correct methods of problem solving in playing chess among university students. The subjects were sixty five Chinese university students, who manipulated the problem situations in targeted and nontargeted ones. The results showed that solving both targeted and nontargeted chess problems can affect problem presentation , problem strategies, transfer of knowledge, and act as a premise for solving further and more complex chess problems .Gobet & Simon (1996) showed that playing chess for a long time can create an atmosphere for researching about human memory, problem solving abilities ,recognition as well as planning processes. Highly skilled chess players can accurately produce a series of unrelated chess positions even when they are presented in rapid succession.

Reiman & Schult (1996) investigated analogical problem solving and structure of knowledge among the subjects. They concluded that students learn the problem solving procedures optimally, then by using representational transfer of knowledge, solve problems where there are no common solution procedures (Novick Hmelo,1994).They emphasized using games , especially chess , for improving problem solving skills .Keller (1999) showed that problem solving skills (e.g. playing chess) can transfer to other domains(e.g. business problems).Kendall (2000)showed that playing chess is a context or milieu that provides opportunities for participants to improve their problem solving skills.

Fletcher(2000)indicated that playing chess can enhance and improve problem solving skills. Allen & Mean (Cited in Ferguson , 2000) discovered that well-defined problems such as chess, have got positive effects on the learning attitudes of learners ,and can therefore , enhance and facilitate their cognitive processes.De Groot(1978) found that chess playing could be described as a sequence of moves and that the current chess position contain the necessary information for selecting the best next move. He found that the skilled chess players consistently selected superior moves. Subsequent research has shown that the move-selection task provides the best laboratory test for predicting actual chess skills (Pfau & Murphy , 1988) . In general, expert ability to generate superior chess moves requires the mediation of complex cognitive mechanisms, which allow experts to perceive the structure representative situations and assess relevant relations underlying actions (Ericsson, 2003).

Based on the theoretical framework and research findings, the hypothesis of the present research is that playing chess can improve and enhance problem solving skills among university students.

3. Method

The research design was an experimental one, including experimental and control groups, participating in a pretest-posttest procedure. The sample consisted of forty students from six faculties of Alzahra university(Tehran, Iran), during the 2002-2003 academic year. Students studying at the Math department and faculty of Technology and Engineering were excluded. The sample was selected according to a cluster random sampling procedure .After being screened on the basis of knowledge and skills of the chess game, the students were randomly divided into two groups of twenty. The rationale for excluding Math and Engineering students was that they were familiar with somehow expert in problem solving skills. The samples were studying at the undergraduate level and the age range was 19-28 years.

The research scale was Know Your Own I.Q. (Eysenck,1969).It was assumed that the Eysenck test can measure logical reasoning tasks such as analogies, series completions, and classifications all requiring encoding or attribute discovery; inference or attribute comparison ; relation or rule evaluation; and decision and response processes (Goldman & Pellegrino,1984) .This scale consists of eight subscales containing forty questions .Each subscale (test) is a complete entity in itself, and can be used and scored without reference to the other seven . For each test a time – limit of thirty minutes is set (Eysenck, 1969).The Raven's Progressive Matrices Test was used to measure the criterion –related validity of the scale. The validity coefficient was ($r=0.49$, $p\leq 0.01$) Reliability of the scale was measured by the test – retest method, within an appropriate time interval. Correlation between scores obtained on the two occasions was ($r =0.98$, $p \leq 0.001$). It is assumed that an intelligence test measures a general ability that is not transient (Kaplan & Saccuzzo, 1989; Aiken, 1985).

4. Procedure

The research consisted of three stages: Pretest, Chess playing instruction (treatment), and posttest. In the first stage, both the experimental and control groups, consisting of twenty students each, participated in the pretest. The pretest

was part one of the scale and included forty items. In the second stages, the experimental group consisting of twenty students were trained in an authentic – based and real – world learning approach course for playing chess. The training took place during two months, sixteen sessions, two hours per session. The training package for playing chess included the following steps: (a) preparing a pamphlet for chess instruction, including the regularities of the game, pieces in chess , their movements and restrictions; (b) verbal instruction; and (c) many exercises accompanied by guided practicing . All of the learning activities took place in a real – life university classroom with an authentic learning approach. The control group was asked not to play chess during two months .

In the third stage, after two months training, posttest was conducted using both the experimental and control groups. Part two of Eysenck test was used to avoid the halo effect (Hawthorn effect).According to Eysenck (1969), each test is a complete entity in itself, and can be used and scored without reference to the other seven. In addition, each test consists of varied series of different types of problems with the easiest at the beginning and the most difficult at the end (Eysenck , 1969). Therefore each part (test) has an equivalent weight in assessing logical reasoning.

Statistical tools included descriptive and inferential statistics, including t test

5. Research Findings

Table 1 presents the mean and standard deviation for both the experimental and control groups

Table 1: statistics related to the experimental and control groups in pretest

Statistic Group	N	Mean	Standard Deviation
Experimental	20	12	3.277
Control	20	11.4	2.644

Table 1 indicates that although the means in both the experimental and control groups are somehow different, but they are indeed very close to each other. Later, analytical investigation will show that there is no significant difference between the means of the sample in both the experimental and control groups, in the pretest stage.

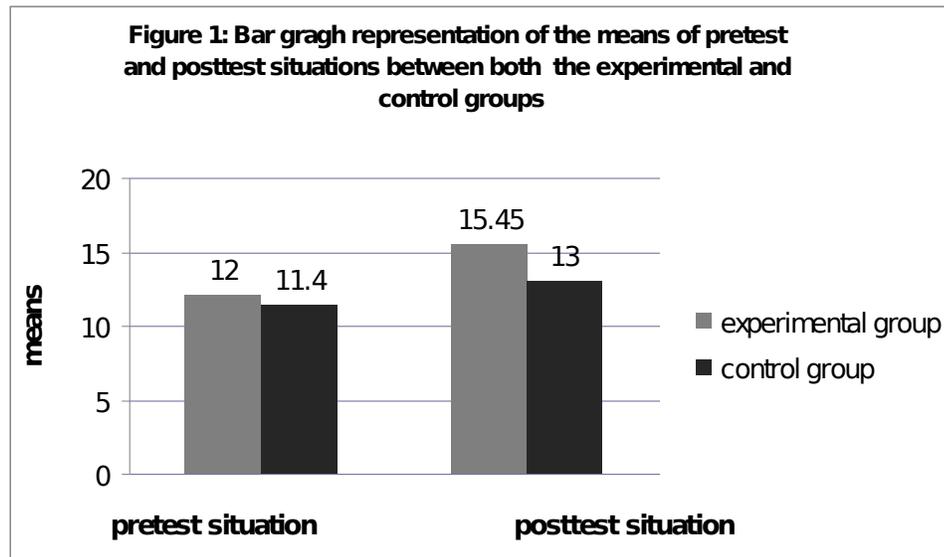


Figure 1 indicates that the mean test scores in the pretest situation in both the experimental and control groups is very minimal. After playing chess the difference increases dramatically in the posttest among the experimental group.

Table 2 demonstrates mean, standard deviation, standard error of the mean and confidence limits of the mean for both the experimental and control groups in the pretest and posttest situations. In the Eysenck test (1969), the scores in subscale (test) one and subscale two are accurate within the limits (10-22). It is, therefore, necessary to estimate the upper and lower limits of the intervals which are known as confidence limits (Sanders, 1990; Shavelson, 1988).

Table 2: mean, standard deviation, standard errors of means, and confidence limits of means for both experimental and control groups in two pretest and posttest situations

Statistic Group	N	Mean	Standard Deviation	Standard Error of Mean	Confidence Limits (0.99)
Experimental (pretest)	20	12	3.277	0.75	14.15 - 9.85
Control (pretest)	20	11.4	2.644	0.61	13.15 - 9.65
Experimental (posttest)	20	15.45	3.1	0.71	17.48 - 13.37
Control (posttest)	20	13	2.97	0.68	14.95 - 11.05
P ≤ 0.01					

Table 3 represents the homogeneity of variances and t test for estimating differences between the means of pretest between experimental and control groups.

Table 3: equality of variances and t test for mean difference of pretest between experimental and control groups

Statistic Group	F _{ob.} SD of two groups	sig	t _{ob}	t _{cr} upper & lower tails	Df	95% confidence interval of the difference	
						Lower	upper
Experimental group Control group	1.239	0.05	0.64	± 20.021	38	-2.021	+ 2.021
P ≤ 0.05							

As table 3 indicates, the homogeneity of variances of two samples was established. Also , there is no significant difference between the means of the subjects in the pretest stage in both the experimental and control groups .

Table 4 represents comparison of mean differences between test scores related to posttest of the subjects in both the experimental and control groups.

Table 4: comparison of mean differences of posttest in experimental and control groups.

Statistic Group	n	t _{ob}	df	Mean difference	Sd difference	t _{cr} one – tailed	Sig
		1.745	38			1.684	0.05
Experimental	20			3.45	3		
Control	20			1.9	2.61		
p ≤ 0.05 d f= 38							

As indicated in table 4 , observed t is more than critical t at the 95% confidence interval ($p \leq 0.05$, $df = 38$). There is, therefore, a significant difference between the means of the subjects in the posttest stage ,in both the experimental and control groups. The research hypothesis is thus confirmed.

6. Discussion and conclusion

Based on a contextualized and real – life learning approach ,the aim of this study is to evaluate the effect of chess playing in an authentic situation on problem solving skills among university students . The findings of the research correspond to a number of research findings.

Reiman & Schult (1996) found that playing chess can transfer and improve problem solving skills. The transferability of skills is a key element in every training context (Barnett & Ceci, 2002). In his extended research, Rifner (1992), cited in Ferguson, (2000) showed that playing chess can improve and enhance problem solving skills, which, in turn, can transfer to relatively the both domain-specific problem solving skills and domain-general skills or strategies. It depends somehow on the degree to which learning is bound to specific context, particularly a social context (Cobb & Bower, 1999).

The research findings of Wang & Fu (1997) and Gobet & Simon (1997) are also in line with the findings of the present research. Wang & Fu (1997) concluded that problem representation and searching strategies are key elements and premises in solving problems. Playing chess can provide this context. According to Gobet & Simon (1996) experiments highly skilled players are able to rapidly perceive meaningful relations between most chess pieces within presented situations. Thus their ability increases as a function of chess skills (Charness, 1991). According to Gobet & Simon (1996), playing chess can potentially create a context in which human memory, problem solving processes, recognition processes, and planning processes can be studied. Also, the relation between the superior memory for presented chess positions and the memory demands integral to selecting chess moves, can be scrutinized in the same real-life context (Ericsson et al. 2000).

There are many research findings that correspond directly or indirectly to the present findings. For example, in an extensive review of research findings, Liptrap (1999) and Ferguson (2000) showed that playing chess can increase critical thinking; enhance creativity components, such as, fluency, flexibility, and originality; and improve spatial, numerical and executive abilities. Playing chess occurs in an authentic context, in which by moving every piece, the player may encounter a novel problem to be solved. Thus searching for alternative strategies, encoding them in working memory, as well as evaluating the moves and strategies of the fellow-player, are analogous to problem solving. In problem solving, just as in a chess game, problem identification, hypothesis building, hypothesis testing, monitoring progress toward goal, and evaluating the solution for accuracy are key elements in the cycles in which the problem solver may be engaged.

In conclusion, playing chess occurs in a context, based on an authentic learning approach. In this situation, major components of the problem solving process, including problem representation and solution generation, can be integrated and interwoven. Thus, playing chess is the interplay between representation and solution generation in a real-world context. Dewey (1933) focused on the importance of thinking as an educational goal. Selz (1935) advocated the idea of learnable intelligence. The recommendation based on the findings of this research is to add playing chess to the curriculum, or at least extracurricular program, at the secondary education and university level in an attempt to improve problem solving skills.

The End

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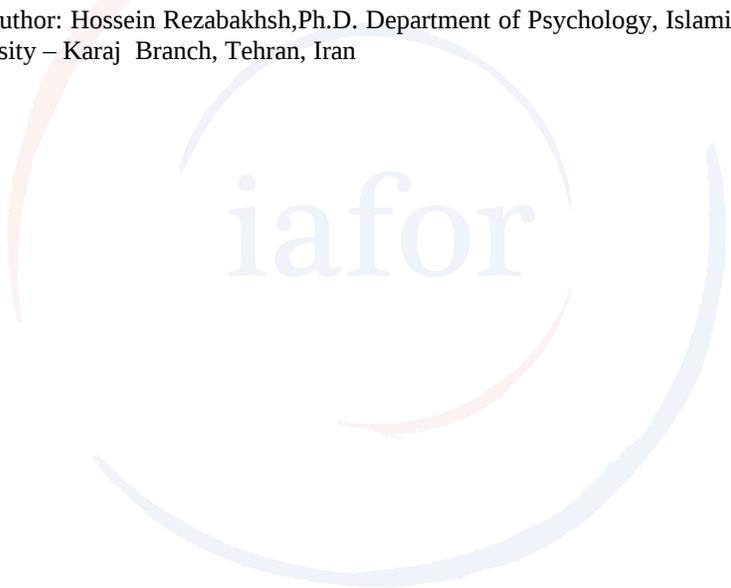
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The logo for 'iafor' is centered on the page. It features the lowercase letters 'iafor' in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue one in the foreground and a light red one behind it, creating a sense of depth and movement.

Title:

Study on Environmental Cognition and Pro-environmental Protection
Behavior of Citizens to Climate Change in Taiwan

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Topic of the submission:

Qualitative/Quantative Research in any other area of Psychology

**Study on Environmental Cognition and Pro-environmental Protection
Behavior of Citizens to Climate Change in Taiwan**

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Abstract

The information of global warming and climate change had broadcasted all over the world since the end of 20th century. IPCC earned its leadership in this issue since it shared the 2007 Nobel Peace Prize with former Vice President of the United States Al Gore who had managed the documentary film of “An Inconvenient Truth”. However, some scholars doubt about man made global warming. They argue the humanity activity is insufficient to cause the climate change, and adopting Kyoto Protocol will not have significant influence in the future.

Taiwan was ranked 22 regarding green house gas missions, one-third of the emissions are from Kaohsiung. In order to mitigate global warming, Taiwan’s government promotes the policy called “Saving Energy and Reducing Carbon”; series method was introduced to the citizens.

This research applying the theory of planned behavior (Ajzen) to the survey of 223 Kaohsiung residents, by the Structural Equation Modeling, the sampling data was well-fit to the theory of planned behavior model.

The result of the study indicates global warming has influenced the attitude of pro-environmental cognition of the citizens. The attitude and the perceived of behavior control have influenced to the citizens’ pro-environmental behavior intention. Nevertheless, the behavior intention has no significant influences to the pro-environmental behavior in the majority cases. On the other hand, Perceived of behavior control plays an important role in the model. Introducing the useful, convenient and well feedback methods of saving energy and reducing carbon is the most efficiency way of social marketing in the future.

Keywords: *global warming; climate change; pro-environmental behavior; theory of planned behavior*

1. Introduction

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Is climate change¹ as “An Inconvenient Truth”? Through the media, particularly the Internet, information instantly disseminated to every corner of the globe. The focus of this study is to investigate whether contact with environment-related topics and data can produce environmental cognition, contribute to the development of environmentally friendly attitudes, and influence pro-environmental behavior.

In the 21st century, the media has informed us that the global average temperature is raising year by year, which seems to be causing stronger typhoons, more severe flooding, shrinking of the Arctic sea ice extent, and more frequent of extreme weather.

However, a number of scholars and scientists feel that, according to past data, the current climactic conditions are comparable to the Medieval Warm Period that preceded the Little Ice Age. These scientists feel that climate change theorists have not observed data over the long term. Almost any weather event is now linked to climate change. (Lomborg, 2001).

The documentary film “An Inconvenient Truth” featured former U.S. vice president Al Gore and used many stirring images and poignant text to discuss climate change. For instance, the film shows that in 1970 Mount Kilimanjaro was capped by snow and glaciers. Thirty years later, the snow and glaciers have noticeably receded. In 2000, Lonnie Thompson, an expert on mountain glaciers, photographed the residual glaciers in Kilimanjaro Peak. He estimates that the “snows of Kilimanjaro” will become a historical term (Gore, 2007).

However Lomborg et al. indicated that the snow and ice-capped Kilimanjaro is a perfect glacial phenomenon that has been continually receding since 1980. When Hemingway’s “The Snows of Kilimanjaro” was first published in 1936, Mount Kilimanjaro had already lost half or more of its glacial surface over the previous half-century. Indeed, at the close of the Little Ice Age, smaller icebergs did not seem abnormal, as these were being compared with their maximum absolute volume within the past 10,000 years (Lomborg, 2008).

With regard to the melting of the Arctic’s ice, many scientists have forecast that if the entire Greenland Ice Sheet melts, this will cause ocean levels to rise by 18 to 20 ft.; even the U.S. World Trade Center memorial may be submerged. Scientists have also discovered incidents of group drowning of polar bears, a phenomena that was extremely rare in the past (Gore, 2007).

However, scholars of different opinion have pointed out that glaciers have been continually advancing and retreating since the last ice age. Within the past 10,000 years, the Bjornbreen, one of the most studied glaciers in Norway, disappeared twice (7,000 years ago). The period of disappearance was approximately 3,000 years. In actuality, nine to six thousand years ago, a majority of glaciers in the Northern Hemisphere were very small or non-existent. Following the end of the last ice age, glaciers continually grew or receded, and reached a

¹ The term climate change, according to the Intergovernmental Panel on Climate Change (IPCC), refers to any change in climate over time, whether caused by natural variability or human activities. This differs from the usage of the term climate change in the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC refers to climate change as change in climate that is attributed to human activities. http://www.ipcc.ch/publications_and_data/ar4/syr/en/mains1.html

point of high volume during the Little Ice Age (Lomborg, 2008).

Gore et al. maintain that the Earth's climate model has remained largely unchanged from the beginning of human civilization to the present, and that we have yet to experience monumental environmental change. Every locale on earth has developed according to the single climate model with which we are familiar. However, what is disturbing is that the general populace has come into contact with rumors fabricated by "fake experts" more often than with accurate data from the global scientific community. This has twisted the viewpoint of the people with regard to climate crisis, and caused the loss of much precious time that could have been used in the solving of the climate crisis (Gore, 2007).

In amongst this vast quantity of environmental data on climate change, how is the environmental cognition and pro-environmental behavior of the Taiwanese people living in a subtropical region, particularly the residents of Kaohsiung City, which has the largest volume of carbon dioxide emissions in Taiwan? This study used Kaohsiung City residents as research targets and hopes the research results can be a useful reference to government in the promotion of environmental protection methods.

2. Literature Review

2.1 Global warming and climate change

2.1.1. Theories supporting man made global warming or carbon reduction

In 1958, British scientists noticed for the first time that the concentration of carbon dioxide in the atmosphere was slowly increasing, but could not understand the cause. As investment in research on the topic increased, the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) collaborated in 1988 to establish the Intergovernmental Panel on Climate Change (IPCC). The main tasks of the IPCC are to assess technological, social, and economic risks related to climate change, and to study papers on climate change related to "adaptation" and "carbon reduction", to provide the world with a clear, scientific perspective on climate change. The IPCC itself does not conduct research or monitor climate data (UNEP, 2008).

In December 2007, the Nobel Peace Prize was jointly awarded to the IPCC and former U.S. vice president Al Gore "*for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change*" (The Nobel peace prize, 2007).³The award of this special honor further established the leadership role of the IPCC with regard to global warming and climate change.

According to the IPCC Assessment Report, around 1750, at the start of the Industrial Revolution in Europe, the carbon dioxide content in the earth's atmosphere was 280 ppm.

³ The Nobel Peace Prize http://nobelprize.org/nobel_prizes/peace/laureates/2007/index.html

Today, atmospheric greenhouse gas concentration has reached 450 ppm CO₂e (carbon dioxide equivalent), and increases by 1.5-2 ppm annually (UNEP, 2008).

Therefore, at the outset of the United Nations Framework Convention on Climate Change (UNFCCC), each signatory nation acknowledged “that change in the Earth’s climate and its adverse effects are a common concern of humankind”. The UNFCCC states that human activities have already substantially increased the atmospheric concentration of greenhouse gases. This increase has strengthened the natural greenhouse effect and may cause further warming of the earth’s surface and atmosphere, which may produce adverse effects for natural ecosystems and humanity (UN, 1992).

The IPCC Fourth Assessment Report used the “Schematic framework of anthropogenic climate change drivers, impacts and responses” to explain how the greenhouse gas emissions of the “human system” have caused climate change in the “earth system”, and that this climate change has influenced the socioeconomic development of the “human system”. Therefore, humanity must use “reduction” to slow climate change, and use “adaptation” to adjust to the influence of climate change⁴.

2.1.2. Theories skeptical of man made warming or skeptical on carbon reduction

Richard S. Lindzen, Professor of Metrology at the U.S. Massachusetts Institute of Technology, agrees with the viewpoint of the IPCC and a majority of climate scientists that the Earth has warmed by 0.5°C over the past 100 years. He also agrees that human activities have caused atmospheric CO₂ content to increase by approximately 30 %. Linden does not mean that humanity has done nothing to influence climate, but argues that human impact on the environment is at most “like a butterfly folding its wings”. He also insists that climate research has been seriously polluted by political rhetoric, and that related evidence is still extremely weak (Grossman, 2001).

In the face of the 21st century “global warming” alarm, we are surprised to discover ourselves in a relatively cold period in climactic history, a period which has also been intermingled with alternating cold and warm periods. History includes many occurrences of temperature rise, the most recent of which was the Medieval Warm Period. A period of approximately 600 years of extremely unpredictable weather and lower temperatures, termed the Little Ice Age, followed the Medieval Warm Period. Famine was frequent during the Little Ice Age and “witches” became the most visible scapegoat. During the 1500s to the 1700s, more than 500,000 women were executed as witches. From bygone ages to the present, people have reacted with wrong solutions when faced with anxiety. When debating the climate problem, people do not usually propose methods for achieving the greatest improvement with a minimum of resources, but rather continually emphasize reducing the emission of greenhouse gases (Lomborg, 2008).

At the start of the 20th century, worries about the occurrence of a new Ice Age surfaced.

⁴ IPCC “Schematic framework of anthropogenic climate change drivers, impacts and responses”
<http://www.technocarbon.de/fileadmin/Articles/klima/Climate%20Change%20Report%202007.pdf>

In 1912, the Los Angeles Times reported that a fifth Ice Age was imminent, and that humanity must cope with bitter cold in order to survive. In 1923, headlines in the Chicago Tribune announced that “Scientists have reported that Arctic ice will destroy Canada”. In 1973, the New Scientist reported that we have only tens of thousands of years to prepare for the next Ice Age, and that the earlier people faced its imminent arrival the safer they would be, for once freezing begins it would be too late. In 1975, the cover of the Scientific News, one of the most influential magazines, showed an image of New York city being engulfed by a large iceberg. The title read “The Coming of the Ice Age” (Lomborg, 2008).

How much of global warming arises from this rebound and how much from the burning of fossil fuels is unclear. How much the impact of outer space on earth is converted into global warming is unclear either (Lin, C. P. 2010).

Currently, the Kyoto Protocol requires signatory countries to reduce carbon emissions. Even if each signatory closely adhered to the requirements of the Protocol, atmospheric temperature would only decrease by 0.06°C by 2050 and 0.17°C by 2100. Although the Kyoto Protocol is a public discourse, many have found that, following its adoption, it has shown no significant potential future influence. The Kyoto Protocol can only delay the temperature rise caused by global warming by seven days after 2100 (Lomborg, 2008).

Former U.S. Vice President Al Gore won an Academy Award for Best Documentary Feature with the documentary film *An Inconvenient Truth*, and later shared the 2007 Nobel Peace Prize for his efforts to disseminate knowledge of environmental protection and climate change. However, he has been frequently exposed for having a very non-environmentally friendly lifestyle. The assessment of the media is that “the best ruler for measuring an individual’s beliefs is to see how he lives in his own home” (TVBS, 2007),⁵ and that therefore, “climate change is just a business” for Gore.

In 2003, Lomborg gathered a group of economists (including three laureates of the Nobel Prize in Economic Sciences)⁶ to establish the Copenhagen Consensus. After arranging various global problems in order of priority (based on the idea that “With limited resources, if we cannot do everything, which things should we do first?”), this organization found that the problem of least priority was climate change (Lomborg, 2008).

2.2 *The Pro-environmental Behavior of the Populace*

Diekmann et al. (see Kollmuss, A., Agyeman J., 2002) proposed the “low-cost/high-cost model” in response to the inconsistency between pro-environmental attitudes and behavior. The “cost” refers not only to economic expenditure but also to a wide range of psychological feelings, as well as available time and the need for pro-environmental behavior.

⁵ Drew Johnson, founder of the Tennessee Center for Policy Research (TCPR) commented that Al Gore’s mansion in Nashville, Tennessee, consumed 213,210 kWh in 2006, an amount equivalent to the power consumption of 232 average American households in one month. However, Gore’s spokesperson emphasized that the “green energy” purchased by Gore was sufficient to balance the use of traditional energy (TVBS). http://www.tvbs.com.tw/news/news_list.asp?no=sunkiss20070228212607

⁶ The three recipients of the Nobel Prize in Economic Sciences were as follows: Finn Kydland, Thomas Schelling, Vernon L. Smith

Semenza (2008) indicated that policy must serve to eliminate economic and social barriers in order for this inclination to continue. Black et al. felt that even those who are concerned about the environment will usually tend to take the easiest course of action (McAndrew, 2008).

Ajzen (1986) proposed the theory of planned behavior, and felt that the more positive a person's attitude toward an action, the more surrounding normative pressure he/she feels, and the greater the perceived control of this action, the stronger the person's intention to take this action. In addition to influencing behavioral intention, perceived behavioral control also influences behavior.

To confront global warming, Taiwan government promoted a social marketing slogan called "energy conservation and carbon reduction". In actuality, the slogan is a compilation, albeit with a broader definition, of related environmental protection concepts and slogans such as "conserve energy and water", "improve energy efficiency", "reduce, reuse and recycle", "use public transport more frequently", "drive less and reduce air pollution". Being catchy, clear, and easy to understand, "energy conservation and carbon reduction" is a relatively successful social marketing slogan in Taiwan.

3. Research Methods

3.1 Research Location

Kaohsiung City is the most important industrial metropolis in Taiwan, with an international seaport and airport. Therefore, The volume of carbon dioxide (CO₂) emissions from Kaohsiung City was approximately 3,968 tons. The annual average per capita emissions of CO₂ in Kaohsiung City is 26.3 tons, far exceeding the average per capita emissions of 3.96 tons in the global per capita emissions. (Environmental Protection Bureau, Kaohsiung City Government, 2009).

This study aimed to understand the environmental cognition and pro-environmental behavior among Kaohsiung City residents, considering that they reside in an urban environment with very high CO₂ emissions while also coming into contact with news of global warming and climate change.

3.2 Research Design

3.2.1 Research Dimensions

This study used the five dimensions of Ajzen's theory of planned behavior to design and analyze the questionnaire.

"*Attitude towards environment*". This aimed to understand whether respondents supported or were skeptical of the viewpoint that global warming is caused by human activities.

"*Subjective norms*". This dimension aimed to understand the people who related to the respondents with regard to adopting "energy conservation and carbon reduction" methods.

“*Perceived behavioral control*”. This dimension explored respondents perceived capacity to obtain and comprehend the information of “energy conservation and carbon reduction”.

“*Behavioral intention*”. This dimension involved understanding the willingness or inclination of respondents to engage in “energy conservation and carbon reduction” behavior.

“*Behavior*”. This dimension aimed to understand the respondents engaged in “energy conservation and carbon reduction” behavior in their daily lives.

3.2.2 Sampling

This study established a sample number of 225 according to the ratio of the population of each Kaohsiung administrative area to the total city population. Quota sampling was used, and city residents conducting business at each Household Registry Office in Kaohsiung City were targeted as samples. The study used questionnaires and face-to-face interviews to collect information.

4. Results

4.1 Demographic structure

This study interviewed 225 Kaohsiung City residents; after subtracting two invalid questionnaires, the actual sample number used in analysis was 223.

4.2 Analysis of model fitness

This study used structural equation modeling to conduct model fitness analysis of Ajzen’s theory of planned behavior, using the questionnaire and interview data.

4.2.1 Analysis of each dimension

Prior to analyzing the overall model fitness of Ajzen’s theory of planned behavior, this study first conducted confirmatory factor analysis of each dimension in the model. The composite reliability (CR) of each dimension exceeded 0.7, indicating strong reliability. A majority of the various indicators of fitness (χ^2 / df , GFI, AGFI, CFI, and RMSEA) met the requirements of model fitness,⁸ indicating good fit between the questionnaire data and corresponding dimensions. The values of each fitness indicator are shown in Table 1.

This study categorized the behaviors related to “energy conservation and carbon reduction” as promoted by government and NGOs of environmental protection into five categories: Diet, Clothing, Residence, and Transport, as shown in Table 2.

⁸ Hair et al. (2006) recommended that a C.R. value of 0.7 and above indicated good composite reliability. Hair et. al. (2006) recommended that an AVE value of 0.5 and above indicated good convergent validity. Doll, Xia and Torkzadeh (1994) suggested that GFI and AGFI values of 0.8 and above indicated reasonable fit. Byrne (2001) suggested that a CFI value of 0.9 and above indicated a well-fitting model. Byrne (2001) suggested that an RMSEA value below 0.08 indicated comparatively good fit. Joreskog & Sorbom (1993) suggested that an χ^2 / df value below 5 indicated that the model was acceptable.

Table 1
Confirmatory Factor Analysis of the Dimensions

Dimension	Indicator	Non-standardized factor loading	Standardized factor loading	Standard error (SE)	t-value	C.R.	AVE	χ^2	χ^2 / df	GFI	AGFI	CFI	RMS EA
Attitude toward global warming	at3r	1.22	0.69	0.158	7.716	0.7846	0.4234	8.513	1.703	0.981	0.986	0.987	0.056
	at4r	1.22	0.61	0.171	7.175								
	at5r	1.31	0.73	0.158	8.291								
	at6r	1	0.65								
	at7r	0.98	0.56	0.147	6.694								
Subjective norms	sn1	1	0.84	0.727	0.4942	0	0	1
	sn2	0.97	0.80	0.111	4.520								
	sn4	0.50	0.37	0.179	5.438								
Perceived behavioral control	pb1	0.87	0.49	0.135	6.434	0.7149	0.3917	2.501	1.251	0.994	0.971	0.997	0.034
	pb2	1	0.56								
	pb3	0.82	0.76	0.118	6.943								
	pb4	0.66	0.66	0.115	5.795								
Intention to engage in pro-environmental behavior	bi2	0.792	0.40	0.158	5.010	0.7842	0.4982	11.15	5.579	0.976	0.879	0.969	0.144
	bi5r	1	0.55								
	bi6	0.792	0.89	0.233	8.093								
	bi7	1.950	0.86	0.239	8.146								
Recommended values						>0.7	>0.5	The lower the better	<5	>0.8	>0.8	>0.9	<0.08

Table 2
Categories of "Pro-environmental Behavior"

Categories of pro-environmental behavior	Standardized factor loading	Items	
Diet	0.81	b1	I have reduced my intake of meat in the last month
		b2	I buy Taiwan-produced fruit and avoid buying imported fruit (for example: durian, cherries)
		b3r	I often store food in my refrigerator that is past its use-by date
Clothing	0.73	b4	In summer I wear light, cool clothing to reduce use of air conditioning or the strength of air conditioning
		b5	I carry a handkerchief and minimize use of tissues or paper towels
		b6	I use fans or open windows as much as possible, and minimize use of air conditioning
Residence	0.79	b7r	I am more concerned about price when I purchase household electrical appliances*
		b8	I purchase electrical appliances that have "energy conservation" labels
		b21	I turn lights and water taps off as much as possible
		b22	I unplug appliances that are temporarily not in use
Transport	0.04	b9r	My main mode of commute is riding a motor scooter or driving a car*
		b10r	I use elevators and rarely use stairs*
		b11	I support increase of fuel tax, to reduce the use of fossil fuels

*Reverse questions

4.2.2 Model fitness analysis of the theory of planned behavior (TPB)

This study classified “pro-environmental behavior” into four categories: “Diet”, “Clothing”, “Residence”, “Transport”, and used four TPB models to analyze these categories. The fit of each indicator was good (see Table 3), indicating a considerably close fit between the data obtained by this study and Ajzen’s TPB model.

Table 3
Model Fitness Analysis of the Theory of Planned Behavior

	χ^2	χ^2 / df	GFI	AGFI	CFI	RMSEA
Pro-environmental behavior: Diet	227.936	1.583	0.900	0.869	0.924	0.051
Pro-environmental behavior: Clothing	232.214	1.613	0.901	0.870	0.929	0.053
Pro-environmental behavior: Residence	269.729	1.665	0.887	0.854	0.907	0.055
Pro-environmental behavior: Transport	206.679	1.453	0.912	0.883	0.938	0.044
Recommended values		<5	>0.8	>0.8	>0.9	<0.08

4.3 Model path analysis

4.3.1 Model of “Pro-environmental behavior in Diet”

“Attitude toward global warming” and “perceived behavioral control with regard to environmental protection” influenced “pro-environmental behavioral intention” (p-value < 0.05) ; however, could not influence pro-environmental behavior with regard to “Diet” indirectly(as shown in Table 4).

Table 4
Path Analysis of the “Pro-environmental Behavior in Diet” Model

			Estimate	S.E.	C.R.	P
BI	<---	SN	.004	.038	.105	.916
BI	<---	ATT	.109	.043	2.534	.011
BI	<---	PBC	.270	.080	3.368	***
B_diet	<---	PBC	.032	.061	.518	.605
B_diet	<---	BI	.025	.049	.497	.619

4.3.2 Model of “Pro-environmental behavior in Clothing”

“Attitude toward global warming” and “perceived behavioral control with regard to environmental protection” influenced “pro-environmental behavioral intention” (p-value < 0.05), and through this mediator (pro-environmental behavioral intention) indirectly influenced the clothing choices of the populace (See Table 5).

Table 5
Path Analysis of the “Pro-environmental Behavior in Clothing” Model

			Estimate	S.E.	C.R.	P
BI	<---	SN	.010	.038	.267	.789
BI	<---	ATT	.113	.043	2.598	.009
BI	<---	PBC	.270	.079	3.397	***
B_cloth	<---	PBC	.229	.155	1.473	.141

			Estimate	S.E.	C.R.	P
B_cloth	<---	BI	.656	.248	2.647	.008

4.3.3 Model of “Pro-environmental behavior in Residence”

This analysis indicates among the respondents of this study the perception of global warming is caused by human activities, as well as clear understanding of energy conservation and carbon reduction methods, influenced the “pro-environmental behavioral intention” of the populace (p -value < 0.05). However, this influence stopped at intention, could not influenced “pro-environmental behavior: Residence” indirectly. Instead, perceived behavioral control indicators (such as “Implementation of energy conservation and carbon reduction method is doable and easy”) influenced “pro-environmental behavior: Residence” more significantly (See Table 6).

Table 6
Path Analysis of the “Pro-environmental Behavior in Residence” Model

			Estimate	S.E.	C.R.	P
BI	<---	SN	.005	.038	.139	.889
BI	<---	ATT	.110	.043	2.551	.011
BI	<---	PBC	.264	.077	3.440	***
B_reside	<---	PBC	.397	.124	3.202	.001
B_reside	<---	BI	.274	.176	1.554	.120

4.3.4 Model of “Pro-environmental behavior in Transport”

This analysis indicates that “Attitude toward global warming” and “perceived behavioral control with regard to environmental protection” influenced “pro-environmental behavioral intention” (p -value < 0.05); however, could not influence pro-environmental behavior with regard to “Transport” of the populace indirectly. This indicates majority of the populace drive scooters or cars as their main mode of commute instead of taking bus or MRT (mass rapid transit) (See Table 7).

Table 7
Path Analysis of the “Pro-environmental behavior: Transport” Model

			Estimate	S.E.	C.R.	P
BI	<---	SN	.008	.037	.211	.833
BI	<---	ATT	.108	.042	2.557	.011
BI	<---	PBC	.267	.078	3.417	***
B_trans	<---	PBC	.147	.122	1.206	.228
B_trans	<---	BI	.117	.164	.715	.475

5. Conclusion

Information on global warming and climate change has aroused the concern and attracted the attention of the Taiwanese populace. The government of Taiwan has been promoting a set of actions related to “energy conservation and carbon reduction”, with the goal of encouraging citizens to engage in pro-environmental behavior in the daily life.

This study found that global warming and climate change have certainly influenced intention to engage in pro-environmental behavior among the general populace in Taiwan. However, in a majority of cases, this influence stops at “intention” and is unable to affect indirectly implementation of pro-environmental behaviors through intention. Therefore, pro-environmental intention among the populace does not necessarily translate into pro-environmental behavior.

In this study, when only global warming and climate change were used as the appeal to engage in pro-environmental behavior, the effects were not significant in the area of “Diet” and “Transport”. The reason is that this appeal influenced only behavioral intentions and could not induce people to implement pro-environmental behavior in these areas.

In the areas of “Residence”, although the pro-environmental intention of the populace could not induce them to engage in pro-environmental behavior, perceived behavioral control with regard to environmental protection could directly influence implementation of pro-environmental behaviors. Put simply, helping the public to understand environmental protection methods and making them easy to implement positively influences engagement in pro-environmental behavior in the areas of “Residence”.

The influence of using global warming and climate change as the appeal was relatively significant in the area of “Clothing”.

Introducing useful, convenient and good feedback methods of saving energy and reducing greenhouse gases should be the efficient social marketing method of the future.

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Emotional Intelligence and Social-Emotional Learning: An Overview

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Abstract

The term emotional intelligence was first used in 1990 by Salovey and Mayer. Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth. Adequate interpersonal skills are an important component of emotional intelligence. Social skills include interpersonal behaviors needed to make and keep friends, such as joining in and giving compliments; peer-related social skills valued by classmates, such as sharing and working cooperatively; teacher-pleasing social skills related to academic success, such as listening and following directions; self-related behaviors, such as following through and dealing with stress; communication skills such as attending to the speaker; and assertiveness skills. Emotional intelligence may be as important as, or even more important than, cognitive intelligence. Many learners, particularly those at risk for school failure, do not possess the social-emotional skills needed to be emotionally intelligent. Social-emotional learning enables learners to effectively understand process, manage, and express the social and emotional aspects of their lives.

Introduction

Emotional intelligence tests are tests which are designed to quantify emotional intelligence. The result of the test is often given as emotional quotient (EQ); the higher the EQ the more competent the person is with self understanding and general social situations. A large publication of EQ tests is probably more useful than the actual large publication of IQ test. Three popular EQ tests are the MSCEIT (Mayer-Salovey-Caruso Emotional Intelligence Test), the ECI (Emotional Competence Inventory), and the EQ-i (Emotional Quotient Inventory). The authors of the MSCEIT originally developed the MEIS (Multifactor Emotional Intelligence Scale) while some other authors developed the COMET/EQ questionnaire, the EQ-Map.

The relation between EQ and personality tests are also envisaged. These analyze a person's personality with a broader scope, e.g the E-PQR (Eysenck Personality Questionnaire Revised) used intro/extroversion, neurotic, psychotic, and truthfulness.

Emotional Intelligence has a long impact. Emotional Intelligence is becoming indispensable for many parents and educators who are alarmed by increasing levels of conflict in young schoolchildren. Nevertheless Emotional Intelligence has been included in training programs of corporate employees for better motivation which will automatically increase productivity and profits.

Five characteristics are essential for having high emotional intelligence:

- a) **Self-awareness**--knowing and recognizing ones emotions
- b) **Mood management**—managing ones feelings to the present situation and reacting accordingly
- c) **Self-motivation**----directing oneself towards a goal, inspite of having self-doubt, inertia, and impulsiveness
- d) **Empathy**--recognizing others feelings and turning them into their verbal and nonverbal cues
- e) **Managing relationships**--managing interpersonal interaction, and successful negotiations

Measures of EI

Maximal performance, and mixed-model measures, emphasise on typical performance (Mayer, Salovey, & Caruso, 2000; Petrides & Furnham, 2000). Maximal performance indicates the best cognitive performance a test-taker can achieve on a test, while typical performance is a measure of a test-taker's performance under ordinary test conditions.

The Emotional Intelligence Appraisal measures:

- A) Personal competence, including:
 - Self-Awareness: Recognizing and understanding ones emotions in the moment, as well the tendencies across time and situation.
 - Self-Management: Using awareness of emotions to manage response to different situations and people.
- B) Social competence, including:
 - a) Social Awareness: Understanding the perspectives of other people including their motivations, their emotions, and the meaning of what they do and say.
 - b) Relationship Management: Using awareness of one's own emotions and the emotions of others to manage relationships to a successful outcome.

The MSCEIT measure is a measure of EI involving a series of emotion-based problem solving items with relatively low face-validity (MacCann, Roberts, Matthews, & Zeidner, 2004; Roberts, Zeidner, & Matthews, 2001). The various domains in which MSCEIT is applicable are:

- a) Experiential Area
 - i) Perceiving Emotions
 - ii) Facilitating Thinking
- b) Strategic Area
 - i) Understanding Emotional Meaning
 - ii) Managing Emotions

Response set is responding in a desirable way. This can be situational and temporary. On the contrary, response style is a more long-term trait-like quality. Considering the contexts certain self-report EI inventories are used in (eg, employment settings), the problems of response sets in high-stakes scenarios become clear. If we consider inherent similarities it may be reasonable to assert that socially desirable responding has the capacity to contaminate responses on self-report EI measures.

Positive behaviors include positive self esteem, meaningful goal achievement, dependability, effective communication, constructive thinking, emotional self control, problem solving skills, and healthy stress management skills involving higher psychological processes and the integration of cognitive and emotional minds. Effective education involves the development of personal responsibility skill and proper education experience encompasses specific learning experiences to help students develop the emotional intelligence skills essential to academic achievement, personal well-being, and career/life effectiveness. This broader definition of education emphasises on the 'right mind' as well as the cognitive mind.

The key feature of developing emotional intelligence is to educate two minds with a focus on how the cognitive and emotional mind work. Emotionally intelligent behavior is reflected in

the ability to think constructively and behave wisely. Intentional and self-directed behavior needs reflective thoughts. Wise and effective behavior requires the ability to regulate and express emotions in healthy ways. Emotional intelligence skills harmonize the cognitive and emotional minds and are essential to effective behavior.

The area of affective neuroscience embarks upon the relationship of emotional intelligence to academic achievement and personal well-being. The development of the brain during the period from early adolescence to young adulthood is dynamic and significant. The learning experiences given during this critical developmental period can positively influence the development of academic, career, and life effectiveness skills.

Nelson and Low (2003) defined emotional intelligence as a confluence of developed skills and abilities to (1) accurately know oneself in terms of personal strengths and weaknesses, (2) establish and maintain effective and healthy relationships, (3) get along and work productively with others, and (4) deal effectively and healthily with the demands and pressures of daily living. The Emotional Skills Assessment Process (ESAP) is the research based assessment model. It is used to help students to identify and understand important emotional intelligence skills.

Four distinct factors provided by the ESAP are namely: (1) Interpersonal Skills, (2) Leadership Skills, (3) Self-Management Skills, and (4) Intrapersonal Skills. The specific emotional intelligence skills that contribute to these factors are: (1) Assertion, (2) Social Awareness, (3) Empathy, (4) Decision Making, (5) Positive Influence (Leadership), (6) Drive Strength (Goal Setting), (7) Commitment Ethic (Personal Responsibility), (8) Time Management, (9) Self Esteem, and (10) Stress Management. Nelson and Low (2003) has related research establishing the relationship of emotional intelligence skills to academic achievement (Nelson and Low, 2003; Vela, 2002; Nelson and Nelson, 2003; and Stottlemeyer, 2002) has identified the ESAP scales of Assertion, Drive Strength, Commitment Ethic, Time Management and Stress Management as being significant predictors of academic success. Meaningful emotional learning is essential to understand the different functions and processes of the cognitive and emotional minds.

Epstein has demonstrated functions and processes associated with both the cognitive and emotional (experiential) mind. Epstein (1998) further emphasised that the emotional mind: (1) learns directly from experience, (2) thinks quickly for immediate action, (3) is holistic, (4) thinks in terms of associations, (5) is closely connected to emotions, (6) interprets experience and guides conscious thoughts and behaviors through 'vibes' from past experiences, (7) sees the world in concrete images, metaphors, and stories, (8) is experienced passively as if we are sized by our emotions, (9) experiences its beliefs as self-evidently valid (experiencing is believing), (10) pays attention only to outcome, (11) thinks in terms of broad categories, (12) operates in different modes corresponding to specific emotional states, and (13) changes slowly with repetitive or intense experience.

Epstein (1998) has also opined that the cognitive mind: (1) learns from abstract representations, (2) thinks slowly, deliberately and is oriented toward planning and consideration, (3) is analytic, (4) thinks in terms of causes and effects, (5) separates logic from emotions, (6) interprets experience through conscious appraisal of events, (7) sees the world in abstract symbols (words and numbers), (8) experienced actively and consciously (as if we are in control of our thoughts), (9) requires justification by logic and evidence (give me proof), (10) pays attention also to process, (11) thinks in terms of finer distinctions and gradations, (12) highly integrated and more internally consistent, and (13) changes rapidly.

Conclusion

Integrity of the emotional mind and the cognitive mind is essential for effective behavior. Negligence of one over the other leads to behavior that is incomplete. Emotional intelligence skills are higher psychological processes which balances the two minds for the achievement of academic success, career and work effectiveness, and personal well-being. Real learning is transformative than cognitive and information based.

Emotional illiteracy is reflected in failed marriages and troubled families, social lives,. It deteriorates physical health and has its effect in the form of tragedies. The essential skill of emotional intelligence has to be taught as indispensable similar to traditional measures like IQ.



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Title: **Parents – Child Relationship
and
The Child’s Inner Feelings Regarding Dependency (JAPAN)**

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Title: Parents – Child Relationship
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The Child’s Inner Feelings Regarding Dependency (JAPAN)

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Abstract:

A physiological boundary relationship between the Japanese mothers and children encountered with the socio-cultural system have rooted the dependency and reliance on group and society which deny self identity and independency that prose the hate between individual and group, family and society.

The current study try to investigate the parents and children attitude treating, focusing on the children attitude treating their parents and the children's inner feelings towards family. Fifty-nine Japanese elementary school student's have been given: FMCI (Father Mother Child relationship inventory). And; K.F.D (Kinetic Family Drawing Test) .

FMCI had shown that. The children common attitude in both daily life and studying circumstances towards parents were (dependency), no significant differences between girls and boys were observed.

K.F.D. results: had shown aggressive inner feeling toward parents however they had dependent attitude toward parents or not, they had shown feelings of aggression towards parents, refusing family relations, psychological castration, most of them had shown parental emotional deprivation, some of them had shown absence or childish image of the father, maternal deprivation, feeling of sadness, and loneliness, pretending to be happy or in relation with family and controlling tendencies, distorted body image, lack of family communication, lack of motor action and feeling of adequacy.

A narcissistic and unhealthy closed relationship between Japanese mother and her child influenced by a socio-cultural system that deny individualization encountered, with the absence of the parents (money seeking, stresses), children had such Multi injured , Tendency of dependency and Lack of family warm relations, such situation rises Aggression towards the inner object parents, self (distorted body image). So that, those children who had shown rebellious, strange and refusal attitudes towards their parents are considered to be normal reacting in a healthy way.

Key words: FMCI (Father Mother Child Relationship Inventory), K.F.D. (Kinetic Family Drawing Test), Dependency.

Introduction:

“ Love in the east is all-embracing. It is open to all sides, one can enter from any direction. The mother enfolds everything in an unconditional love. There is no question of right and wrong, everything is accepted without difficulties.” Said Suzuki Daisetsu in Doi (1977). While theories perspectives are differ, they almost focus on the influence of the socio-cultural context. Early childhood and unconscious, individual inbuilt potentials, environmental events, and the interpersonal dynamics in the family system. A closed physical and psychological attachment between the Japanese mothers and their infants has been emphasized as a socio-cultural

recommendations; in order to socialize the children into social and group dependency patterns. In Japan, social system and cultural values are very strong, strict and highly recommended to follow. Which, strongly affects the family structure, roles and relationships at the same time. Japanese people have the tendency to idealize the Parent-Child relationship and use it as a reference in other relationships; where (interdependency) can be found and Amae's mentality.* The tendency to depend on mother, parents, principles and organizations.

Today, the family relationship has changed due to more life stresses and money seeking; parents became less closer and attached to their children. At the same time, children are still asked to follow the strict system and depending on their parents first then group.

Thus; the aim of the current study are to :

1. Investigate the parents-child relationship focusing on the children attitude treating their parents.
2. Investigate the children's inner feelings towards parents.

Background:

Moscovici pointed that parental behaviors towards a child is the product of the social representations that have been created over time. Mescovici in Shwalb and Shwalb (1996). Japanese mother-child relationship is psychologically bounded. The mother thinks that her child is an extension of her own; needing no verbal communication which may indicate controlling the verbal system as a cultural demand in order to maintain a certain model of what a child's development should be like, Doi (1973) describes the intimate parent-child relationship that encourage the offspring's extensive reliance on the mother, whom in turns rewards and accepts dependent behavior as an indication of her enhanced affection. Doi in Shwalb and Shwalb (1996)

As a cultural value and an influence of Amae's mentality; Japanese are depending the group and individual is not allowed to be independent and individual, leading to conflicts. Doi (1977. pp. 86-135). The unconditioned mother's love and the spirit of non-discrimination of mother-child has been a part of the Japanese makeup since ancient times as Doi mentioned. This closed relationship between the mother and the child encountered with the socio-cultural system have rooted the tendency to dependency.

Mothers, parents, groups, organizations, society dependent relationships deny self identity and independency. Which rises the conflict and roots hatred between the individual and the group (family - society). At the same time; today, family relationships had changed (life stresses, seeking money) parents are considered to be absent.

Definition of the dependency concept:

Cambridge Dictionary: define dependency is : when you need something or somebody all the time, especially in order to continue existing or operating. Codependency care refers to any relationship evolving unhealthy emotional dependency. Codependency in relationships occur when one person in the relationship is credited with and responsible for doing all the given and the other partner is expected to take. Both are deeply entrenched and both are truly being hurt by the codependency. Codependency can be seen between couples and also parents and their adult children. PsycINFO Online.

* Amae is a Japanese term refers to the feelings that all normal infants at the breast harbor toward the mother - dependency, the desire to be passively loved, the unwillingness to be separated from the warm mother - child circle and cast into a world of objective "reality" in a Japanese these feelings are somehow prolonged into and diffused throughout his adult life. (John Bester in "The anatomy of dependence" 2001, p.7) by Doi.⁶

Ben Hughes has explained dependency as a relationship from two partners/sides. For example, a child and a parent is a co-dependency figure. Ben Hughes (2002, 2009)

Co-dependency exhibit behavior which controls, makes excuses for, pities and takes other actions to continue the needy parties condition, because of their desire to be needed and fear of doing anything that might change the relationship. Then, the parent has a co-dependency relationship with his/her child; while the child depends on the parent for providing the basics in life. The parent's mutual dependence is on the child for providing the focus for them to live their life through it is an interpersonal relationship that involve some level of interdependency.

The verb (AMAERU) has been presented in the Japanese society as a motive or desire presented by Amae – metapsychological construct- and highly impacting the Japanese society; to express the individual's desire to be given special cherishment treatment held, fed, kept warm and emotionally comforted. Ego instinct associated with the primary need to establish a dependent connection with a maternal object. DOI described the verb (amaeru) as the ability to depend and presume upon another's benevolence and suggests the word (wheedle) as an equivalence to (amaeru). (Amaeru) denotes the promotion of security and cherishment sought through another person. Johnson Frank A. (1993)

Previous Studies:

1. Studies have focused on the interdependent relationship as follows:

A. Fred Rothbaum and et al.: (2007) Have found that; more often, Japanese mothers link security with accommodative behaviors, in mildly stressful situations and more often attributing the child's inappropriate behavior to security and interdependence needs and less often attributing these behaviors to egotism and self-maximization than US mothers.

B. Carolus M. J. Vereijken (1997): Mentioned that the Japanese indigenous concept of amae indicates a specific quality of relationships namely; Interdependence, which is not captured by the western concepts of the attachment and dependency. The study found that Japanese mothers consider attachment security to be the most desirable of the three concepts (Attachment, Dependency and Amae) whereas Amae is considered the least desirable.

C. Takeo Doi, Kiyoshi Ogura (2008): Pointed that such feelings of an infant towards his/her mother are the same to that towards anybody who must depend on another, and the process of identification on the part participants' of the one who does depend and the other who is depended upon.

2. Studies have focused on the mother's attitude and its impact on the child dependency as follows:

A. Tsumori Makoto: (2009) Have measured the relationship of the child's personality and the mother's attitude (subjects were 71 kindergarten children of four and five years old). The results pointed out that, mothers of children who are more dependent in kindergarten as well as in family are more rejecting and negative than mothers of children who are less dependent in kindergarten.

B. Bousha, David M., et al (1984) Three groups of mothers with known history of child abuse, neglect, and child maltreatment. Their children were observed in their homes. Dysfunctional Ss showed significantly fewer positive behaviors than did the controls on verbal and nonverbal and physical aggression; the neglectful mothers had

the lowest overall rates of interaction, the maltreated children also exhibited fewer positive behaviors and more aggressive behaviors.

The Problem: It is necessary to focus on the children attitude and inner felling. Rising the following questions:

1. Are of the children have a dependent attitude towards parents?
2. Are of the children have aggressive feelings towards parents?

Method of the study:

A Clinical Study (*Sample Survey*) by using a random sample. A small-sample work a kind of pilot study; exploring and contributing to similar studies of large sample. Small-sample studies are fruitful for future studies. In addition; research using qualitative approach is desirable to engage in theoretical sampling where the aim is to approach people who ought to be the most informative. Glyins and et al. (2006)

Tools:

1. **(FMCI) Father Mother and Child relationship Inventory:** FMCI is a child self-report measure of relationship with the father and mother at both daily life scenes and studying circumstances scenes. At each scene, parents attitude to child has two traits; refusal – acceptance and control – understanding; child’s attitude to parents has two traits; dependency – independency and resistance – reliance .. with sub-classifications for attitudes. Harano Kotaro (1998)

2. **(K.F.D) Kinetic Family Drawings:** KFD is a projective drawing test which allows the child in an easy way to express his/her feelings and the dynamic family relationship, emotions, aggression, which cannot be expressed through verbal talk. And easy to conduct and exceeds linguistic and cultural limits. Burns, R and Koufman, H (1970. 1972)

Sample: Letters had been sent to the parent of 6th graders in a Japanese elementary school (MOTOYAMA DAI NI, Kobe, Japan), for allowing children to share the work. “as an essential step for measuring attitudes in Japan”. 60 parents represents 60 students agreed to share the research work, the 60 students were given the:

1. (FMCI) Father Mother and Child relationship Inventory.
2. (K.F.D.) Kinetic Family Drawings.

One student didn’t respond to the questionnaire FMCI, and just 30 students accept the K.F.D. test because it was difficult to give all students (60 students) to draw individually, or separately during the school time. So the number of students answered the questionnaire was 59, while the students respond to the drawing test was 30 students.

A sixth grade fifty-nine Japanese elementary school students aged 11-12 years old, while only one boy aged 10 years old were included in the research work; (31 girls, A.M. 11.73; S.D. 0.25) and (28 boys, A.M. 11.68; S.D. 0.47). While, T. score was no significant (- 0.556).

Results:

1. FMCI:

Table (1): Parent’s attitude toward the child (daily life scenes).

No.	Acceptance	Blind	Ideal	Average	Authoritative	Neglect	Under-	No. of
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	receptive	love			despotic	refusal	standing	students
Girls	7	3	11	4	4	1	1	31
Boys	3	7	7	-	7	3	1	28

Table (2): Child attitude toward parents.

No.	Dependent childish pampered Reliance	Ideal	Average	Resistance Rebellious	Independent	estrangement	No. of students
Girls	12	10	5	2	1	1	31
Boys	10	5	3	6	2	2	28

1.1 Regarding to the daily life scenes :

1.1.A. Parental attitude:

- Parental common attitude towards children both (Girls – Boys) was almost (acceptance attitude) if I consider the blind love and ideal attitude are an acceptance attitude.
- parental blind love and authoritative / despotic attitude towards boys were more common than were towards girls.
- parental refusal / neglect attitude towards boys was more common than was girls.
- parental understanding attitude was same towards both girls and boys.

1.1.B. Children attitude towards parents:

- children common attitude (both girls and boys) towards parents were dependency (childish – pampered – reliance).
- Ideal attitude towards parents were more common in girls than boys.
- Resistance / rebellious attitude towards parents was more common in boys than girls.
- According to the difference of the sample number of girls. There were no significant differences were observed in average and estrangement attitude.
- Independent attitude in both (girls and boys) was the less attitude towards parents. So as estrangement attitude.

Table (3): Parent's attitude toward the child (studying circumstances sconces).

No.	Acceptance receptive	Blind love	Ideal	Average	Authoritative despotic control	Neglect refusal	Under-standing	No. of students
Girls	4	4	13	2	4	2	2	31
Boys	4	2	5	2	9	3	3	28

Table (4): Child attitude toward parents.

No.	Dependent childish pampered Reliance	Ideal	Average	Resistance Rebellious	Independent	estrangement	No. of students
Girls	20	-	4	1	3	3	31
Boys	15	1	2	2	3	5	28

1.2. Regarding the studying circumstances:

1.2.A. Parental attitude towards children:

- Parental ideal attitude towards girls was more common than boys.
- Parental authoritative / despotic / control attitude towards boys was more common than girls.
- Parental acceptance / receptive and average attitude towards both boys and girls were same.
- Parental blind love attitude towards girls was more lightly than boys however parental refusal / neglect and understanding attitude towards boys were more lightly than girls.

1.2.B. Children attitude towards parents:

- Dependency (childish – pampered – reliance attitude) was the common attitude in both (girls and boys) towards parents (an indicative percentage).
- Independent attitude towards parents was same in both girls and boys (low percentage).
- No indicative differences between girls and boys have been shown in the ideal average resistance and estrangement attitudes towards parents.

2. K.F.D drawing :

According to the projective drawing tests perspectives, dynamic analysis has shown, correlated with FMCI results.

2.1. Feelings of aggression had shown through:

2.1.A. Denial the human body image (parents – self) image as if machine, cartoon and image of body distortion.

2.1.B. Refusing family relations; missing eyes, ears, hands ...; give back facing to parents, closing eye and draw compartments. All in all have been shown as follows:

2.1.B.1. Eleven students have shown strong indication of aggressive inner feelings towards parents and distorted human body image those students were:

- a. Six students have dependent attitude toward parents.
- b. Three students have independent or rebellious attitude toward parents.
- c. One student has dependent attitude in the daily life scene and rebellious attitude in the studying circumstances scenes.
- d. One student has an estrangement attitude toward parents.

2.1.B.2. One student has shown aggression toward parents (distorted parental body image) this case has a pampered attitude toward parents in the daily life and independent in the studying scene.

2.1.B.3. Fourteen students have shown less indication of aggressive inner feelings and distorted body image. (through drawing distorted hands or legs), however, repressed aggression had seen through drawing (closing hands) those students were:

- a. Seven students had dependent – reliance and childish attitude toward parents.
- b. One student had estrangement and pampered attitude.
- c. Two students had independent – rebellious attitude.
- d. One student had estrangement attitude.
- e. One student had both attitudes reliance and rebellious attitude that may indicate to

a confused attitude towards parents.

- f. One student had a rebellious attitude.
- g. One student didn't answer the FMCI questionnaire.

2.1.B.4. Four students had not shown aggressive inner feelings or distorted body image, however, no family communication have been shown:

- a. Three students have dependent, pampered, childish or reliance attitude toward parents.
- b. One student had independent attitude.

2.2. Psychological castration had obviously seen through omission of hands or legs.

2.3. No psychological and normal warm family communication have been observed (omission of eyes ears, give back facing to parents, closing eyes and drawing compartments).

Results conclusion:

- Students had dependent common attitude toward parents in the daily live scene and studying circumstances.
- Independent attitude was in low percentage in both girls and boys towards parents in the daily life and studying circumstances scenes.
- Resistance attitudes towards parents in the daily life scenes was more common in boys than girls.
- An estrangement attitude in low percentage (girls and boys) in the daily life and studying circumstances scenes towards parents has been observed.
- Twenty-six students from thirty – student respond to K.F.D. – had aggressive inner feelings toward parents (strong or less indication of aggression).
- Four students from thirty had not indication of such aggressive inner feeling toward parents.
- Sixteen students from thirty had dependent, reliance, childish or pampered attitude toward parents.
- Six students from 30 had independent attitude toward parents.
- Four students from thirty had dependent / reliance attitude in the daily life scene and independent / rebellious attitude in the study scene.
- Two students from thirty had estrangement attitude toward parents.
- One student from thirty hadn't answer the F.M.C.I. she had less indication of aggressive inner feelings toward parents, however, she had an indication of psychological castration and strong indication of no family communication or refusing the family relations (draw compartments).
- Twenty-three students from thirty had shown no family communication.
- Seven students only had shown family communication as follows:
 - a. One student only had shown normal family communication, no distorted human body image.
 - b. Two students had shown family communication especially with father – however, strong indication or less aggressive inner feelings toward parents (distorted body image) had been shown.
 - c. Two students had shown family communication within the eating time. Indicating

to love needs.

- d. Two students had shown aggressive parental communication.
(Please refer to the students drawings (figures) listed below)

Discussion:

“Mother” “Parents” “Family” “Groups” “Community” “Society” and “Cultural”, have strong impact on the individual personality, despite; arguments, all theoretical perspectives almost agree with the important influence of the interpersonal relations in the contacts of a system (“mother” “family” “group”) on the personality. Psychodynamic perspective appreciated the power of unconscious and how early childhood shaped the person’s current psychological state. Gabbard, Glen (2005). Humanistic perspective, believed that the individual has inbuilt potentials that might help him to build a strong personality by the unconditional positive regard and empathetic understanding. Schneider, K and et al (2001). Behavioral and cognitive behavioral perspective that have been rooted in the behaviorism where environmental events predict the way we think and feel. Beck, A. and et al (2007). Family–Systems perspective is emphasizing the family relationships focusing on the socio-cultural context as it form the family system and all kinds of interpersonal relationships. These relations involve some level of interdependency. Berscheid, E, and Peptau, LA. (1983).

Since it is best to understand the childhood development as embedded in a variety of social and other ecological contacts, including community and cultural contexts that may impact of family processes of child development. Bronfenbrenner (1979) in Richard M. Learner, et al (2003). Japanese inherited system of dependency in the early childhood through the family and group may be characterize the children.

The current study showing that the children suffered a double injure/hurt such dependent tendencies, at the same time, lack of warm family relations; such situation rises aggression towards the inner objects (parents) and self as they are parts of self (distorted human body image, refusing the parental situation). In regard to the questions mentioned above children had dependent common attitude towards parents no significant indication between girls and boys have been observed. Most of them had shown aggressive inner feeling towards parents, parental emotional deprivation and family warm relations; feeling of sadness, inadequacy and psychological castration.

Referring to Harry Stack Sullivan, (interpersonal Psychoanalysis) “Personifications embody one’s assumptions, schemata, internalised representations of others and reflected appraisals of the self”. They can form the basis for the later ambiguities in interpersonal relations that Sullivan termed “Parataxic distortion” a very similar concept to the standard psychoanalytic Transference / Projection mechanisms. Paul Brinich; Christopher Shelley (2002) p. 65.

So that, those children who had shown resistant or rebellious attitude towards parents are consider to be normal and they react in a healthy way in such situations.

Finally, it is necessary to mention with Erikson that “society must early prepare for parenthood in its childhood and it must take care of the unavailable remnants of infantality in its adulthood”. Erick H. Erikson (1963).

Recommendations:

A further researches is recommended to emphasis the results.

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option=com_content&...&itemid=116](http://www.psycinfo.net.womensforum.com/index.php?option=com_content&...&itemid=116).

Appendix Students Drawings

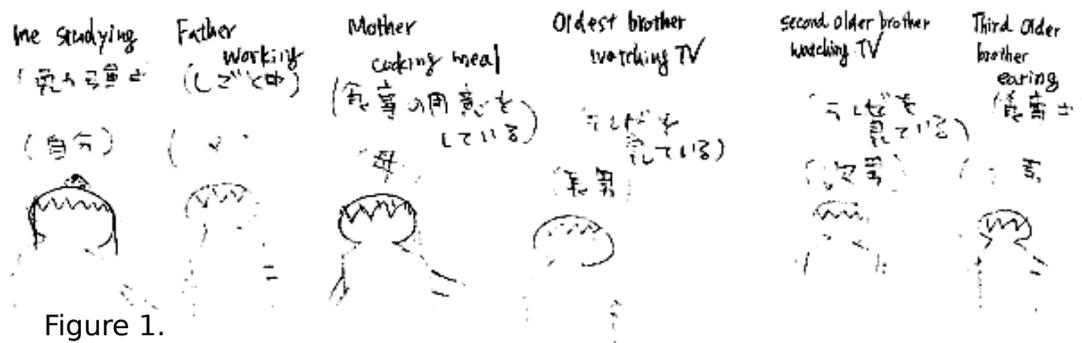


Figure 1.

Figure 1. A girl, she had a rebellious attitude toward parents in the daily life and independent attitude in the studying circumstances. She had shown strong indication of aggressive inner feeling toward parents – family – self (distorted human body image), un human family communication and feelings, refusing the family situations (omission of human facial features, hands and legs where human beings can communicate, identification with mother (long here) and father attachment (father close to her). No motor action can be seen that may indicate to such a depressive sign.



Figure 2. A girl, she had a dependent attitude toward parents in both daily life and studying circumstances; she had shown an aggressive inner feeling toward parents (strong indication of unhuman body image of parents with no human feelings – seems to be machines). Identification and attachment with father (sitting beside him and studying together); maternal and love deprivation can be seen through (long distance between mother and her, mother suppose to be ironing “giving love”, but she didn’t and draw “shaded X” under the ironing table “No love No warmness”, she is vacuuming) and lack of motor action.

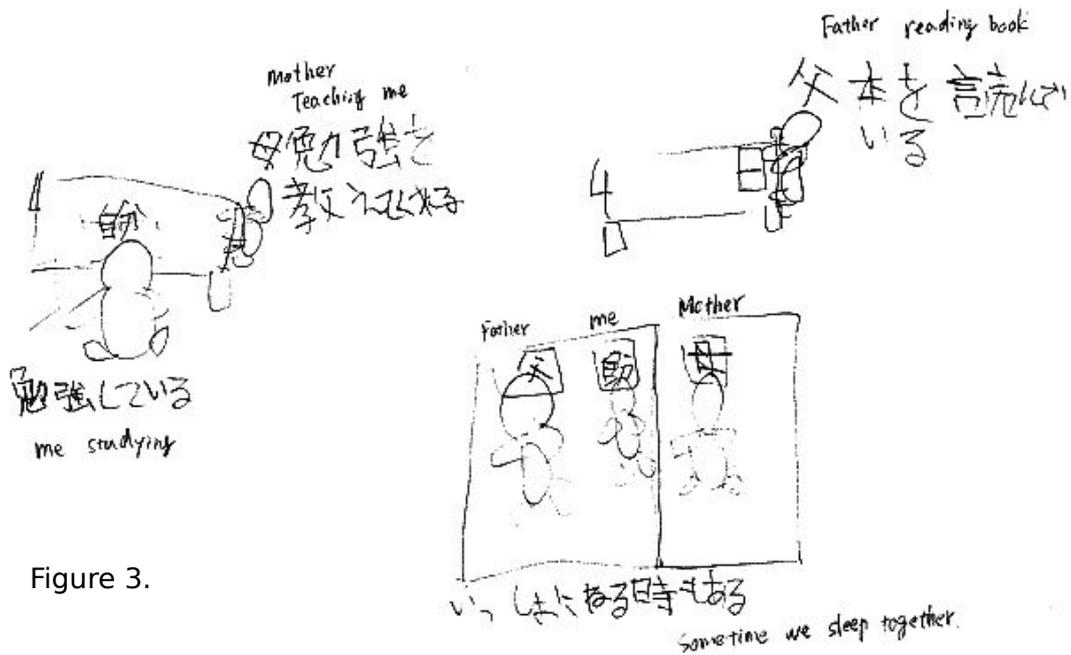


Figure 3.

Figure 3. A boy, he had a dependent attitude toward parents in both daily life and studying circumstances. (omission of the human facial features and body parts “distortion” may indicates to such aggressive feeling and refusal of the family communication. Maternal attachment and Oedipus situation (studying with mother and sleeping between parents), however, father attachment can be seen (a compartment holding him and his father only) that may indicate to such hesitating of the process of identification draw tiny persons may indicate to such feeling of inadequacy.

Figure 4.



Figure 4. A boy: he had a dependent attitude toward parents in the daily life and rebellious in the studying circumstances. He had shown aggressive inner feelings towards parents especially father (distorted and tiny persons had been drawn the figures of parents and the older brother) and long distance between him and father), lack of human family communication, childish image of parents comparing with self image and refusing the family situation (while parents looking to his way / direction he neglecting them with a narcissistic attitude).

Figure 5.

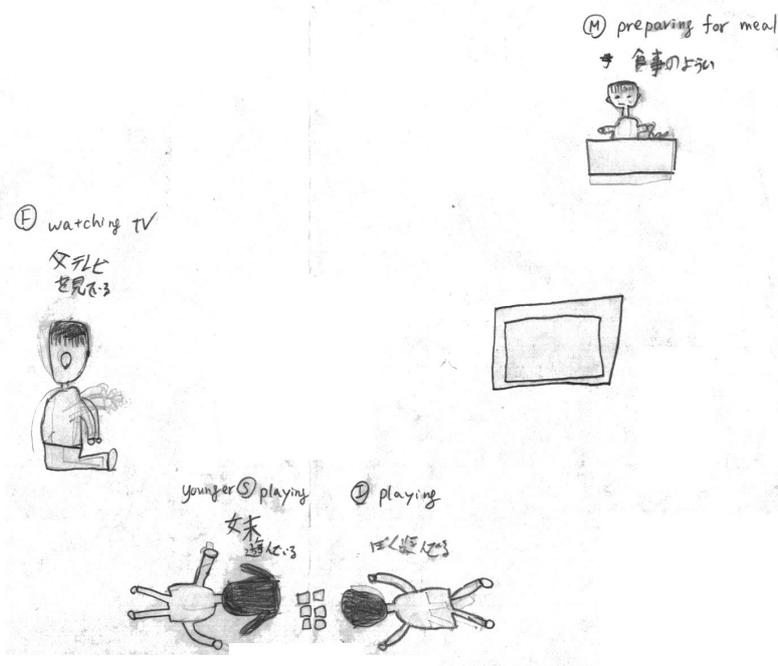


Figure 5. A boy, he has an average attitude in the daily life and reliance in the studying circumstances scenes. He had shown aggressive inner feeling towards parents through depicting a childish image of the parents that showing helplessness; refusing of the family situation (draw back facing); no family communication and parental deprivation especially mother whom has seems to be more dominant than father (long distance between him and the drawing figure of the mother on the top of the paper). Maybe there is a way of communication with sister but in a refusing reaction to the family. Ambivalent feeling towards all the family members have seen through erasing the drawings; inadequacy feeling has seen through draw tiny persons and indication of no motor action that may be indicates to such depressive sign.

Figure 6.

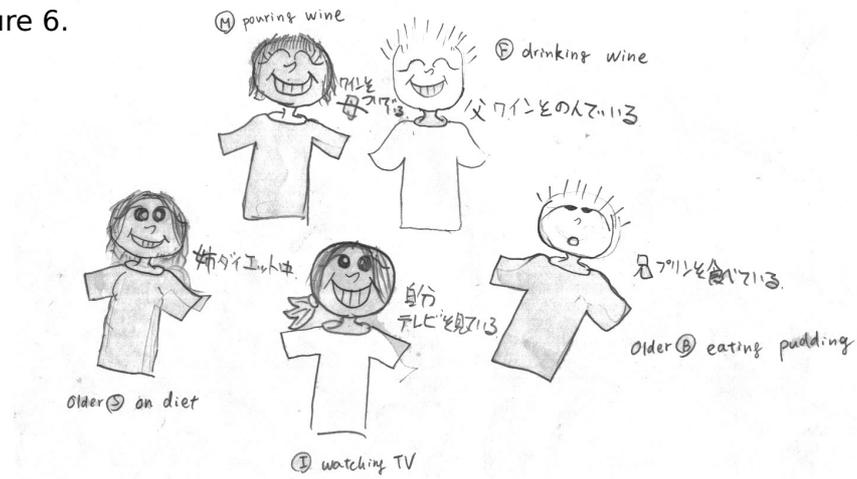


Figure 6. A girl, she has an average attitude in the daily life and independent attitude in the studying circumstances scenes towards her parents. She had shown an indication of aggressive inner feelings towards parent “distorted body image – as if cartoon characters), emotional conflict, no family communication and psychological castration (omission of legs, arms, hands; teeth prominent), parental closed eyes may indicate to lack of parental care; no motor action have been seen.



Figure 7.

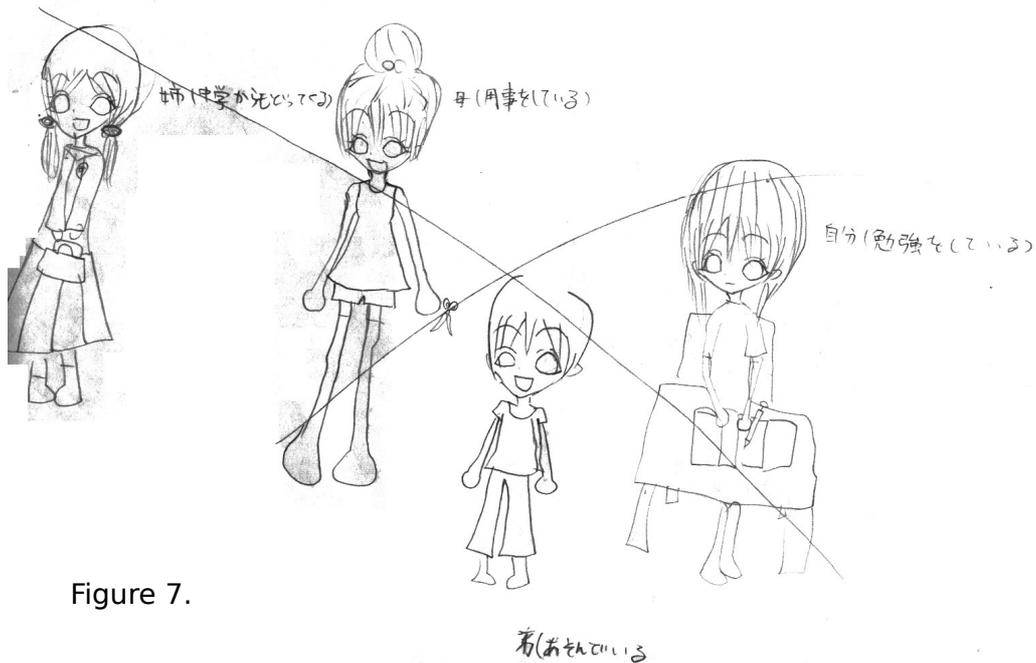


Figure 7.

Figure 7. A girl, she had an independent attitude in the daily life and estrangement attitude in the studying circumstances toward parents. She had an inner feeling of aggression toward the family (closing hands, omission of the apple eye, draw “X sign” on the family on the back of the paper); maternal deprivation “she is busy on cleaning” aggressive feeling toward her younger brother (Mother holding a scissors toward her brother on the drawing back); mother may be a threatening figure. Draw a closing mouth after opening mouth in the back of the paper “denial of verbal aggression”; father’s absence and lack of family communication can be seen through “omission of the apple of the eye and closing mouse”.

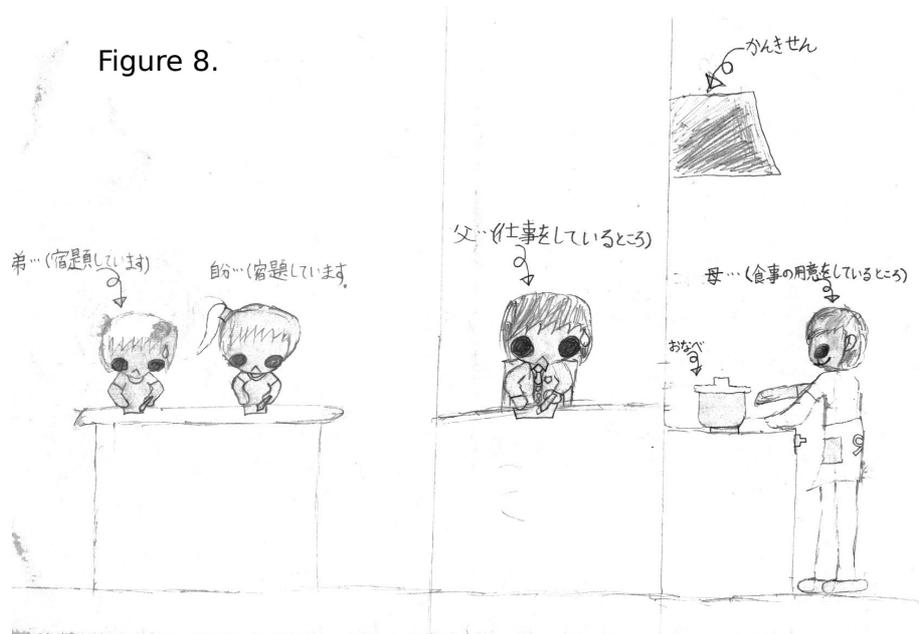


Figure 8. A girl, she didn't answer the F.M.C.I; she had shown a maternal deprivation "draw compartments and long distance between mother and her", love need 'mother cooking food 'love' and oral deprivation, identification with father (studying like him). An indication of scanning the word for information can be seen through draw large eyes, however, small and closed mouth may indicate to such a denial mechanism of verbal aggression.



Figure 9.

Figure 9. A girl, she has a pampered attitude in the daily life scene and average in the studying circumstances scenes toward parents. She has shown such a denial mechanism of verbal aggression “closed mouth all figures”, however, feelings of sadness and lack of warm family communication had obviously seen through draw “folded compartmentalization, facial features”.



Figure 10. A girl, she has a dependent / childish attitude toward parents in the daily life scene and studying circumstances. She had shown such a verbal aggression “closed mouth” and aggression towards mother “cutting her hands through the paper side” since she was very busy “washing dishes” and gave back face to the family and indication of such maternal deprivation can be seen. Normal family communication specially with father and feelings of sadness had obviously seen.

Impact of group training of how to cope with stress on general health of those who suffer from Hepatitis B

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Introduction

Although review of relation of physical illnesses with psychological variables in the present century is very attractive, but it seems this subject has been viewed since very long ago means old Greece physicians. They believed the Man physical health is influenced by psychological health and based on this they were finding cause of any illness from people life style (Sodoro, 1990 & Daneshniya, 1386).

For example, the wise Hippocrates detailed references about the relationship between psychological factors and Physiologic traits (Reese, 1983).

From those views to new age researchers seems that health can be affected by psychological factors. In other words, our attitudes and lifestyles can increase or stop our physiological functions (Koe, 1988).

Previous Reviews in recent years shows that, psychological factors are associated with disease pathology (Bolger and schilling, 1991), that one of these psychological factors affecting disease is stress. Stress and people reactions to it could be a factor of increasing the risk of developing diseases (Danhour & Haskell, 2004). What health knowledge and the humanities today is paying special attention to it, is not only prolong human life age, but it should be noted that additional years of human life and health in the physical and mental relaxation eventually be passed. If such conditions do not provide scientific advances to provide longer life and the consequence would be risky (Shamloo , 1364).

Methodology

This is a semi-experimental study with two groups of control and experimental with pre and posttest. In the study subjects has been trained by Immunization against stress in a group way in the experimental group (men and women) while this method was not run on the control group. 28 patients as a statistical sample was drown from the statistical population,

people who suffered by hepatitis B, randomly. At first each group was 14 individuals (7men and 7 women).

During the training (intervention) for the experimental group, one gent and a lady in the second and fifth sessions due to personal problems did not participate in training programs. Due to equivalence in the groups two persons (one male and one female) who scores equivalent to those removed from the control group. The range of participants' age in this study was between 38 to 68 years old. Both the groups have been used ordinary medical care at the time of intervention.

Research Tools

General Health Questionnaire 28 - GHQ

The original questionnaire has been made by Goldberg in 1972 for screening of Non-psychotic psychological disorders for treatment centers and other societies. The original form of this questionnaire is consisted 60 questions. The questions are about individual general health with emphasis on psychological, physical and social issues. The 28 short Form General Health Questionnaire in this study was used was made by Goldberg and Hillar first in 1979 and developed based on factorial analysis over the form of 60 questions. Tis short form like the original one includes four subscales that each one has seven questions. The Factors are: 1) physical symptoms 2) anxiety and sleep disturbance 3) social dysfunction 4) Depression

Results

Table 1: Mean of **age** of two groups

Mean	Experimental Group	Control Group
Men	44.83	51.5
Women	54.17	56.67
Average	49.5	54.08

Regarding to table 1 the mean of age of experimental group was 49.5 years (men and women 44.83 and 54.17 respectively) and age mean of control group was 54.08 years (men and women 51.50 and 56.67 respectively).

Table 2: Mean of **General Health** of two groups in pre and post-test

Mean	Experimental Group		Control Group	
	Pre-test	Post-test	Pre-test	Post-test

Men	27	17.17	19.17	20.33
Women	24.67	17.33	26.17	25.50
Average	25.83	17.25	22.67	22.91

Based on table 2 Average General Health of experimental group in pre-test was 25.83 (men and women 27 and 24.67 respectively), and in post-test was 17.25 (men and women 17.17 and 17.33 respectively) whereas average General health control group in pre-test was 22.67 (men and women 19.17 and 26.17 respectively) and in post-test was 22.91 (men and women 20.33 and 25.50 respectively).

Table 3: Mean of **Physical Symptoms** of two groups in pre and post-test

Mean	Experimental Group		Control Group	
	Pre-test	Post-test	Pre-test	Post-test
Men	5.50	4.83	3.67	3.83
Women	7.30	5.17	5.83	5.83
Average	6.42	5	4.75	4.83

Regarding to table 3 Mean of physical symptoms in pre-test of experimental group is 6.42 (men and women 5.50 and 7.30 respectively) control group is 4.75 (men and women 3.67 and 5.83 respectively) whereas mean of experimental group in post-test was 5/00 (men and women 4.83 and 5.17 respectively) and in the control group was 4.83 (men and women 3.83 and 5.83), respectively).

Table 4: Mean of **anxiety and insomnia** of two groups in pre and post-test

Mean	Experimental Group		Control Group	
	Pre-test	Post-test	Pre-test	Post-test
Men	8.33	5	5.33	6.83
Women	7.17	5.33	8.33	9.16
Average	7.75	5.17	6.83	8

Table 4 shows that mean scores of anxiety and insomnia of experimental group in pre-test was 7.75 (men and women 8.33 and 7.17 respectively) and average of control group in pre-test was 6/83 (men and women 5.33 and 8.33 respectively) while in the post-test of anxiety and insomnia in the experimental group, mean score was 5/17 (men and women 5 and 5.33 respectively) and in the control group was 8 (men and women 6.83 and 9.16 respectively).

Table 5: Mean of **Social interaction Disorder** of two groups in pre and post-test

Mean	Experimental Group		Control Group	
	Pre-test	Post-test	Pre-test	Post-test
Men	8.50	5.50	6.33	6.50
Women	7	5.83	7.17	6.33
Average	7.75	5.67	6.75	6.42

Table 5 says that mean scores of Social interaction Disorder in the experimental group in pre-test is 7.75 (men and women 8.50 and 7 respectively) and in post-test is 5.67 (men and women 5.50 and 5.83 respectively) whereas average score of Social interaction Disorder in pre-test of control group is 6.75 (men and women 6.33 and 7.17 respectively) and in post-test is 6.42 (men and women 6.50 and 6.33 respectively).

Table 6: Immunization training verse stress in the experimental & control group in post-test of General Health

Variable	d.f	M.S2	F	Influence rate	Statistical P.
Age	1	1.29	0.12 N.S	0.007	0.06
Education	1	4.56	0.42 N.S	0.024	0.09
Pre-test	1	1505.28	138.11**	0.89	1
Group membership	1	375.09	34.42**	0.67	0.99
Gender	1	2.95	0.27 N.S	0.02	0.08
Gender & Group membership reaction	1	13.25	1.22*	0.07	0.18

For testing this hypothesis that Immunization training verse stress, increases level of General Health in the experimental group compared to the control group in post-test. Table 6 shows there is significant difference between remained General Health scores of subjects based on group membership (both the experimental and control groups) by discarding effect of all control variables. Therefore the main hypothesis is accepted ($P < 0/0001$).

Table 7: Immunization training verse stress, decreases Post-test mean scores **of physical symptoms**

Variable	d.f	M.S2	F	Influence rate	Statistical P.
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Age	1	2.06	1.75**	0.093	0.24
Education	1	0.0006	0.001 N.S	0.000	0.05
Pre-test	1	167.34	141.45**	0.893	1
Group membership	1	12.45	10.52*	0.382	0.86
Gender	1	1.93	1.63*	0.087	0.23
Gender & Group membership reaction	1	0.59	0.49*	0.028	1

To examine this hypothesis that Immunization training verse stress, decreases Post-test mean scores of physical symptoms of patients who suffered by hepatitis B in the experimental group compared to the control group. Table 7 shows there is significant difference between remained physical symptoms scores of subjects based on group membership (both the experimental and control groups) by discarding effect of all control variables. Therefore this hypothesis is accepted ($P < 0/005$).

Table 7: Immunization training verse stress, decreases Post-test mean scores **of Anxiety & insomnia symptoms**

Variable	d.f	M.S2	F	Influence rate	Statistical P.
Age	1	7.13	1.57*	0.08	0.22
Education	1	3.64	0.8*	0.04	0.14
Pre-test	1	214.81	47.34*	0.74	1
Group membership	1	42.39	9.34*	0.36	0.82
Gender	1	1.45	0.32 N.S	0.02	0.08
Gender & Group membership reaction	1	0.64	0.14 N.S	0.01	0.06

To examine this hypothesis that Immunization training verse stress, decreases Post-test mean scores of anxiety and insomnia symptoms of patients who suffered by hepatitis B in the experimental group compared to the control group. Table 7 shows there is significant difference between remained anxiety and insomnia symptoms scores of subjects based on group membership (both the experimental and control groups) by discarding effect of all control variables. Therefore this hypothesis is accepted ($P < 0/007$).

Table 8: Immunization training verse stress, decreases Post-test mean scores **of social reaction disorder symptoms**

Variable	d.f	M.S2	F	Influence	Statistical
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				rate	P.
Age	1	0.11	0.09 N.S	0.005	0.06
Education	1	0.004	0.003 N.S	0.000	0.05
Pre-test	1	100.48	82.45**	0.83	1
Group membership	1	10.18	8.35**	0.33	0.78
Gender	1	0.56	0.46 N.S	0.03	0.10
Gender & Group membership reaction	1	4.18	3.43**	0.17	0.42

To examine this hypothesis that Immunization training verse stress, decreases Post-test mean scores of social reaction disorder symptoms of patients who suffered by hepatitis B in the experimental group compared to the control group. Table 8 shows there is significant difference between remained social reaction disorder symptoms scores of subjects based on group membership (both the experimental and control groups) by discarding effect of all control variables. Therefore this hypothesis is accepted ($P < 0/001$).

Table 9: Immunization training verse stress, decreases Post-test mean scores **of depression symptoms**

Variable	d.f	M.S2	F	Influence rate	Statistical P.
Age	1	4.46	1.12*	0.06	0.17
Education	1	0.05	0.01 N.S	0.001	0.05
Pre-test	1	78.66	19.66*	0.54	0.99
Group membership	1	36.81	9.20*	0.35	0.82
Gender	1	5.54	1.38*	0.08	0.20
Gender & Group membership reaction	1	4	1*	0.06	0.16

To examine this hypothesis that Immunization training verse stress, decreases Post-test mean scores of depression symptoms of patients who suffered by hepatitis B in the experimental group compared to the control group. Table 9 shows there is significant difference between remained depression symptoms scores of subjects based on group membership (both the experimental and control groups) by discarding effect of all control variables. Therefore this hypothesis is accepted ($P < 0/008$).

Discussion

Due to the fact that the present study has been done for the purpose of review of group training impact on general health of patients who suffered by hepatitis B, in brief the present findings showed that there is significant difference between group training of coping with stress and patients' general health statistically. On the other word being familiar with effective management methods of stress can be decreased through providing an opportunity for individuals to cope with stressful situations, and developing of the progress of the disease can reduce. And through this reduce mortality in people. Ones suffered to hepatitis B cause depression, anxiety and other negative psychological states because of some limitations that by reduction the negative psychological states can cause individual better performance and increase his life satisfaction. Result of this study is in line with Peterson and Bolling (1997). Their research shown that application of stress management methods and coping methods reduce confusion and improve general health in coronary heart patients. As such the results of this study are agreed with results of Blumenthal et al (2005) which intervention causes general health improvement. By learning immunization methods against stress increase ones capability verses events; and ones encouragement in using this method in daily life causes positive way in him and this reduce individual avoidance to face with opportunities. Since one of the anxieties reason is assessment of situations as a threatening that comes from negative thoughts in person (Havtoon et al, translated by Qasemzadeh, 2001). Identify and challenge with negative thoughts provides an opportunity for individual that re-evaluate these thoughts and change them that this subject cause anxiety reduction on individual. Other findings of the study showed that there is no significant different in rate of immunization training impact against stress via group way in both genders in all aspects of the study such as general health, physical symptoms, anxiety and insomnia, social reaction disorder, and depression. Therefore via training these methods develop people coping and managerial ability to face with stressful situations and provide an opportunity for people to control more their own life events and encounter with situations more effectively and this increase individuals general health and decrease psychological problems that

comes from non-controlling of life and inability on encountering with stressful situations. Therefore rate of effectiveness of this method specify by kind of application not gender of people.

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Information Processing During Unconscious Thought in Complex Decision Making

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INFORMATION PROCESSING DURING UNCONSCIOUS THOUGHT IN COMPLEX DECISION MAKING

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Abstract

On the basis of the unconscious thought theory's assumptions, we tested the hypothesis that some period of unconscious thought helps people to structure and organize information in order to make accurate judgments in complex decision making. The results showed no evidence of unconscious thought effect on the participants' accuracy of judgments. We suggest that people make their judgments online, while being presented with information, and that these judgments do not change after some period of unconscious thought. We also found that individual style of thinking might influence the way participants process the information during information acquisition phase.

Introduction

Living in the world as human beings, we are expected to make decisions almost all of the time, from simple decisions such as choosing between different towels or different sets of oven mitts to complex decisions such as choosing between different cars or apartments. According to Baron (2007), decision making involves searching for options, goals, and evidence, and making inferences about the available options based on the evidence and goals. In this view, making a decision entails that one should first collect information, search for available options and determine ones' goals, that is, the criteria by which the options should be evaluated. One should then search for evidence that helps in determining the extent to which each option achieves ones' goals. Finally, one should infer which option is most likely to achieve these goals. In this process of inference, each option is strengthened or weakened on the basis of the evidence, in light of the goals. According to this view of decision making, the best decision is the one that best helps us to achieve our goals and making the best decision entails that one should take into account all characteristics of the options at hand. These characteristics should be weighted in accordance with their importance for goal achievement and one should compute the overall value of the options by summing together the values assigned to these characteristics. The decision should then be to choose the option with the highest value.

Role of conscious deliberation in decision making

Conventional wisdom suggests that the best way to make a good decision is to use conscious deliberation. Contrary to this conventional wisdom, however, recent research suggests that complex decisions may be best made without conscious deliberation. In particular, Dijksterhuis and Nordgren (2006) argued that whereas simple decisions may indeed be better tackled by conscious thought, decisions about complex matters can be better approached with unconscious thought (see also, Dijksterhuis, 2004; Dijksterhuis & Van Olden, 2006). Dijksterhuis and colleagues gave a nice example of study demonstrating the benefits of unconscious thought in complex decision making (Dijksterhuis et al., 2006)

The Unconscious Thought Theory

To explain the benefit of unconscious thought in complex decision making, Dijksterhuis and Nordgren (2006) developed a theory called The Unconscious Thought Theory (UTT). This theory distinguishes between two modes of thought: unconscious and conscious. Conscious thought is defined as “*object-relevant or task-relevant cognitive or affective thought processes that occur while the object or task is the focus of one’s conscious attention*”, while unconscious thought is defined as “*object-relevant or task-relevant cognitive or affective thought processes that occur while conscious attention is directed elsewhere*” (Dijksterhuis & Nordgren, 2006, p. 96).

The theory further assumes that unconscious and conscious thought have different characteristics that make each mode preferable to use under different circumstances. One of these characteristics is the information processing capacity of the two modes of thinking. Unconscious thought is thought to have virtually unlimited capacity for processing information, while the capacity of conscious thought is assumed to be severely limited. Due to its low capacity, conscious thought cannot take all relevant information into account simultaneously in the case of complex decisions. This leads people to focus on a limited portion of the information and disregard other relevant information. Therefore, conscious thought may not be the best mode to produce a good decision when people deal with complex decisions in which the amount of information exceeds the limited capacity of conscious thought (see also, Wilson and Schooler, 1991). Instead, such complex decisions may be better made using unconscious thought because this mode of thought does not suffer from low information processing capacity. This allows unconscious thought to take more information into account, providing it with better features to handle complex decisions.

According to the unconscious thought theory, other than the processing capacity, another reason for why unconscious thought may lead to better decision than conscious thought is that unconscious thought leads to a change of a mental set. People often approach a problem using inappropriate heuristics and they may focus on irrelevant information and ignore relevant information. Not thinking about the problem for a while may lead people to disregard the inappropriate heuristics and attenuate the biasing effect of irrelevant information. Unconscious thought, then, allows people to give the problem a fresh look and an unbiased new start.

The change of mental set is thought to occur because unconscious thought slowly integrates information to form an objective summary judgment (Dijksterhuis, 2006). If people are presented with a large amount of information in a relatively short period of time, the memory representation of that information is likely to be disorganized. In order to be able to evaluate the information to arrive at a decision, the individual pieces of information should first be associated and integrated. According to the unconscious thought theory, unconscious thought helps people to integrate and organize the information. That is, unconscious thought is assumed to turn an initial, disorganized set of information into a clearer and more integrated representation.

Problems for the Unconscious Thought Theory

So far we have discussed some of the unconscious thought theory’s assumptions which might explain Dijksterhuis and colleagues’ recent findings demonstrating the superiority of unconscious thought over conscious thought in complex decision making. However, this theory is controversial because many studies have not been able to replicate the effect found by Dijksterhuis and colleagues. In particular, studies by Payne et al. (2008), Acker (2008), Newell

et al. (2009), Calvillo and Penaloza (2009), Lassiter et al. (2009) and Waroquier et al. (in press) did not find evidence for the superiority of choices made unconsciously. Thus, while the unconscious thought theory constitutes an intriguing theory in assuming that information continues to be processed and evaluated during a distracting task, the available evidence is mixed with regard to whether this is indeed the case.

The present study

Given the inconsistency in the results of studies examining the unconscious thought effect, a first aim of the present study was to determine whether we could replicate this effect. A second aim was to gain insight into the nature of the processes that underlie unconscious thought in complex decision making. In particular, we examined the unconscious thought theory's assumption that unconscious thought slowly integrates and organizes complex information in memory to form a better summary judgment. Therefore, our first hypothesis was: *Increasing the duration of unconscious thought should increase the accuracy of judgments.*

In addition, we predicted that people would be able to make more accurate judgments when presented with structured and organized information as opposed to when this information was disorganized (see Strick, 2009). However, the assumptions of the unconscious thought theory which is engaging in unconscious thought should help people to structure and organize the information in memory, also led us to form our second hypothesis: *If unconscious thought structures information, then the difference between grouped and random information presentation should dissipate as the duration of unconscious thought is increased.*

Individual differences

Asides from examining the aforementioned hypotheses, we were interested in determining whether there might be individual differences in the quality of judgments made based on conscious and unconscious thought. In particular, we examined whether people who are considered to be reflective thinkers perform differently in the conscious and unconscious thought conditions than people who rely more strongly on intuition. To this end, we added the so-called Cognitive Reflective Test (CRT; Frederick, 2005) in our study.

The CRT consists of three items that each pose a mathematical problem for which one answer is intuitively appealing, but factually incorrect. Accordingly, people with high CRT scores are considered to be reflective thinkers who slowly and deliberately process information. Their information processing requires effort, motivation, and concentration, as well as the execution of learned rules. On the other hand, people with low CRT scores are considered more intuitive thinkers. These people quickly and spontaneously process information with little conscious deliberation (Frederick, 2005). Reflective processing seems to share characteristics with conscious thought, in the sense that it requires more deliberative effort and the implementation of strategies. Meanwhile, intuitive processing appears to be similar to unconscious thought in that it does not require attention and in that it is unaffected by the difficulty of the problem at hand. Based on the assumption that cognitive styles measured by CRT share characteristics with conscious and unconscious thinking, we sought to determine whether there would be differences people with high and low CRT scores in their performance in a conscious and unconscious thought condition.

Method

Participants

A total of 33 bachelor-degree Psychology students from University of Groningen participated in the study. Participants were 9 men and 24 women ranging in age from 18 to 33 ($M = 20.42$, $SD = 2.80$). They were given course credits for participating in the study.

Design

The experiment had a 2 (mode of presentation: grouped versus random) X 4 (duration of the delay condition: 0, 80, 160 and 240 seconds) within-subjects design. Each of the eight combinations of delay and presentation condition was used once in the experiment. To ensure that there was no systematic relationship between trial number and condition, the order of the conditions was determined using a latin square. In addition, the stimuli we used in the different conditions were distributed across conditions in such a way that each stimulus type was used equally often in each of the conditions across the different participants in the study.

The main dependent variable of interest was the accuracy of the participants' judgment. In order to measure the dependent variable, we asked participants to assign a rating to each of the choice options on a 9-point scale. The accuracy of the participants' judgment was operationalized as the difference in ratings assigned to the best and worst option, with higher scores indicating better judgments.

Stimuli and Apparatus

The stimuli used in the experiment were drawn from four categories of objects, namely cars, apartments, notebooks and roommates. Each category had four choice options, which were each characterized by 12 attributes that could be positive or negative. One option was characterized by 9 positive attributes (the best option), two by 6 positive attributes (the intermediate option) and one by 3 positive attributes (the worst option). The number of positive and negative attributes determined the objective value of the options. For each category of choice options we constructed two lists of attributes. Each list of attributes was used equally often in each of the eight conditions to ensure that any differences between conditions could not be due to the use of different stimuli.

Procedure

Prior to beginning the study, participants were asked to complete a consent form and they were told that they would participate in a study concerning decision making. They were then seated in cubicles, with a computer in front of them, on which one of the tasks was presented. Each participant completed three tasks. The first was to fill in the Cognitive Reflection Test (CRT; Frederick, 2005). The second task for the participants was the judgment task. This task was performed on the computer and consisted of a total of 8 trials. On each trial, the participants were presented information about four choice options from the same category, as previously mentioned. Depending on the mode of stimulus presentation, the attributes of each option appeared sequentially per option (the grouped condition) or the attributes for all four options were randomly intermixed (the random condition).

Following the stimulus presentation, participants were assigned to one of four delay conditions (i.e. 0, 80, 160 and 240-delay condition). In the 0-delay condition they were asked to assign a rating to each option immediately after receiving the information. The rating was made by assigning a number from 1 to 9 to each option (1 is the worst possible rating, 9 is the best). In the other conditions, they were asked to do another task for some period of time prior to assigning

the rating. This task required participants to create a word from 7 randomly selected letters (5 consonants and 2 vowels) that appeared on the screen. Depending on the condition, participants executed this task for 80, 160, or 240 seconds. Following this period participants were asked to rate each of the four choice options for which they had received information prior to conducting the word task.

In the third task, participants were asked to make a rank-order of the twelve attributes for each category of choice options. They were presented the twelve attributes of each category of choice options on a sheet of paper and were asked to assign a number from 1 (the most important attribute) to 12 (the most unimportant attribute) to each of the twelve attribute.

Results

Only 21 participants (63.6 %) were included in the analysis. The results of nine participants were excluded from the analyses because these participants did not comply with the task instructions such that they produced non-words and/or a very small amount of words in the distracting task. Three other participants had to be excluded due to missing data. The remaining participants were 4 men and 17 women ranging in age from 18 to 33 ($M = 20.38$, $SD = 3.36$).

Judgment Task – Objective Value

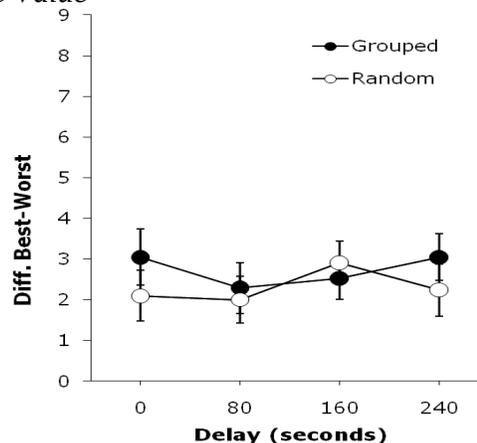


Figure 2. Mean difference between the ratings of the best and the worst options as a function of presentation condition and delay condition, based on objective value. Error bars show the standard errors of the mean.

As in previous research (Dijksterhuis et al., 2006), we used the difference in ratings assigned to the best and worst option based on the objective value, as an index of the accuracy of participants' judgment. Higher scores on this index indicate higher accuracy of judgments. Figure 2 shows the average scores on this index plotted across presentation and delay conditions. These results show that the mean difference between ratings of the best and worst options were

all greater than 0 ($M = 2.52$, $SD = 0.36$). This indicates that participants were able to differentiate the best option from the worst option in all conditions.

The results shown in Figure 2 also illustrate that there were no effects of stimulus presentation condition and delay conditions on the accuracy of judgment. There did seem to be a small difference between the grouped and the random condition in the condition with a 0-second delay, but the difference between the two conditions did not dissipate as we predicted and performance also did not improve with longer delays.

The results of a repeated measures analysis of variance (ANOVA) confirmed that there was no significant main effect of stimulus presentation condition ($F [1, 20] = 1.68$, $p = .21$), no significant main effect of delay condition ($F [3, 57] = 0.43$, $p = .73$) and no significant interaction of these factors ($F [3, 57] = 0.80$, $p = .50$). These results show that presenting attributes in a grouped arrangement did not help the participants to make better judgments compared to judgments made after random stimulus presentation. Moreover, the lack of an effect of delay condition indicates that the participants did not make better judgments following a delay as compared to the judgments they made immediately after stimulus presentation.

Judgment Task – Subjective Value

One possible reason for why we did not find support for our predictions may be that the ratings participants assigned to the different options were influenced by subjective values which need not necessarily match the objective values of these options. Thus, if the relationship between subjective and objective values differed across the different types of choice options, then this may have impacted the effects of presentation and delay conditions. In a subsequent analysis, we sought to determine whether the subjective values were of influence on participants' ratings, and on the effects of presentation and delay condition. To this end, we analyzed the participants' ratings using the subjective values of each option as the basis for determining the accuracy of these ratings.

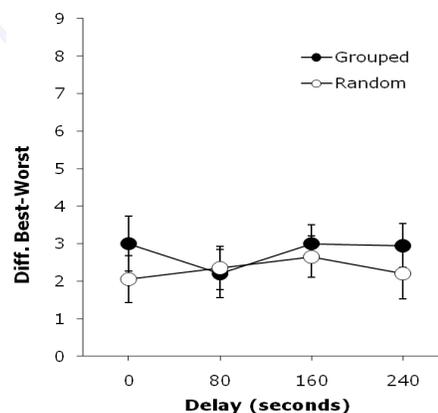


Figure 4a. Mean difference between the ratings of the best and the worst options as a function of presentation condition and delay condition, based on subjective value. Error bars show the standard error of the mean.

Comparing these results to those obtained using objective value as a criterion for judgment accuracy, it is clear that the results for subjective values were equivalent to those obtained for objective values. A repeated measures ANOVA of the effects of presentation and delay condition on the difference in ratings for the best and worst options (see Figure 4a) showed that there was no significant main effect of stimulus presentation condition ($F [1, 19] = 3.02$, $p = .09$), no significant main effect of delay condition ($F [3, 57] = .27$, $p = .84$) and no significant interactions

of these factors ($F [3, 57] = .54, p = .66$). These statistical analyses show that the findings with subjective values replicate those observed using objective values.

Alternative measures of judgment accuracy

In addition to the previous analyses, we conducted several analyses using alternative indices of the accuracy of judgments such as the mean difference between the ratings of the best option and the average ratings of other options and a measure of the degree to which the rank order of the options based on objective or subjective values matched the rank order based on the assigned ratings. The results of these additional analyses also did not find significant effects of stimulus presentation condition and delay condition, confirming the results of previous analyses.

Judgment Task – Cognitive Reflective Test (CRT)

In a final analysis, we compared the performance of participants scoring high and low on the CRT task. The results for the CRT task showed that on average, participants answered 1.52 of the three items correctly. To determine whether reflective and intuitive thinkers performed differently on our judgment task, we categorized the participants into a high and a low CRT group. The high CRT group consisted of 10 participants who answered 2 or 3 questions correctly, while the low CRT group consisted of 11 participants who answered 0 or 1 questions correctly.

Figure 5 shows the results of the judgment task for people scoring high and low on the CRT task. An analysis using CRT performance as a between-subjects variable, and delay and presentation condition as within-subjects variables showed one significant effect, which was an interaction between presentation condition and CRT performance ($F [1, 57] = 7.88, p = .01$). This effect is shown in Figure 6. As can be seen in this figure, people with a low CRT score made better decisions than people with a high CRT score ($M = 3.43$ with $SE = .55$ versus $M = 1.95$ with $SE = .58$, respectively), whereas there was no difference between people with high and low CRT scores in the random condition ($M = 2.35$, $SE = .54$ versus $M = 2.27$, $SE = .522$, respectively). These results indicate that reflective thinkers performed worse than intuitive thinkers when the attributes of the different options were grouped per option as opposed to being presented in a random order. We will return to a possible interpretation of this finding in the ensuing discussion.

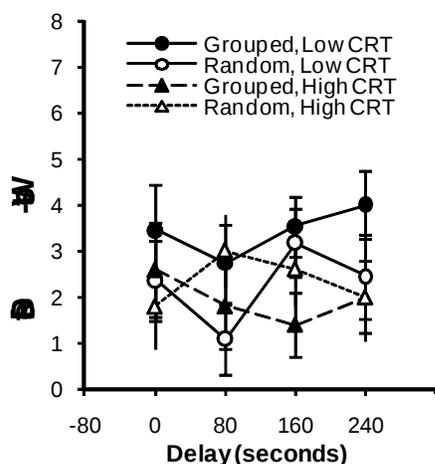


Figure 5. Mean difference of ratings between the best and the worst options as a function of the presentation condition and CRT performance across different delay conditions. Error bars show the standard error of the mean

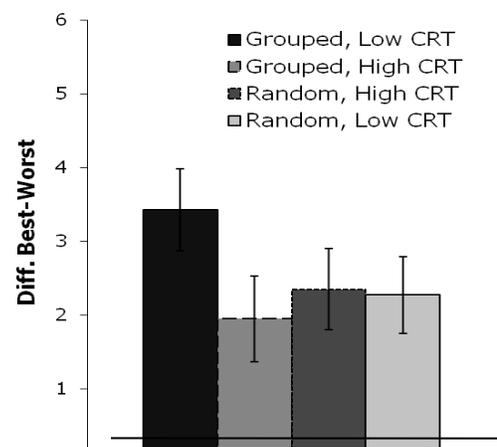


Figure 6. Mean difference of ratings between the best and the worst option as a function of the presentation condition and CRT performance. Error bars show the standard error of the mean.

Discussion

In the following sections we will discuss our findings regarding each hypothesis.

Hypothesis 1: Increasing the duration of unconscious thought should increase the accuracy of judgments.

The results of the present study show that this hypothesis is incorrect. There was no significant effect of delay condition on the accuracy of judgment. This result was confirmed by several analyses using different indices of judgment accuracy, including measures of accuracy based on objective and subjective values. These results indicate that some period of unconscious thought does not help the participants in making accurate judgments.

A possible explanation for this result is that the decision making process has already occurred during information acquisition or encoding. According to this view, participants process each attribute as it is presented and they reach a final judgment at the end of the information presentation. This judgment is then later retrieved from memory and reported at the time of response. Thus, there is no difference between the judgments made immediately and the judgments made after some period of unconscious thought.

In line with the current findings, several previous studies did not show a difference between immediate judgments and judgments in an unconscious thought condition. Waroquier et al. (in press) manipulated the extent to which people can form first impressions during information acquisition by modifying task instructions before participants received the information (i.e. to form an impression versus to memorize attributes of options). They found that contrary to the unconscious thought theory's predictions, judgments performed after a period of unconscious thought were equivalent to those performed immediately after receiving the information. Moreover, in both the immediate and in the unconscious conditions, preventing participants from making their decision online (i.e., under memorization instructions) decreased the accuracy of judgments (see also Lassiter et al., 2009). Newell et al. (2008) investigated the idea that the judgment task involves the online updating of options throughout the presentation acquisition phase. They found evidence to support this claim and argued that the idea of online judgment would provide a plausible explanation for why there was little or no difference between immediate judgments and judgments made after unconscious or conscious thought.

Hypothesis 2: If unconscious thought structures information, then the difference between grouped and random information presentation should dissipate as the duration of unconscious thought is increased.

The present study found no evidence to support this hypothesis. Analyses of various measures of judgment accuracy revealed no significant effects of presentation condition, nor of the interaction between presentation and delay condition. The participants seemed to be able to make more accurate judgments in the grouped condition than in the random condition immediately after information acquisition. However, the mean difference between both conditions did not dissipate with increasing periods of unconscious thought and it was insufficient to yield a significant effect of presentation condition. These results indicate that some period of unconscious thought did not help participants to structure and organize information.

Cognitive reflection task and judgment accuracy

Interesting results were found when we compared performance on the judgment task for people scoring high and low on the CRT task. In the grouped condition, people with low CRT scores were able to make better judgments than people with high CRT scores, whereas people with high

and low CRT scores did not show different performance in the random presentation condition. A possible explanation of this effect is that the grouped presentation condition encouraged people with high CRT scores (reflective thinkers) to apply analytical thinking during encoding. This entails that they attempted to utilize strategies and deliberately think about the information to make their decision. Assuming that this mode of thinking is subject to capacity limitations, it is likely that this approach would lead to information overload and less accurate decisions. On the other hand, people with low CRT scores (intuitive thinkers) would be less likely to apply analytical thinking; hence they would not be affected by the limited capacity of information processing and able to make more accurate decisions. According to this account, the lack of difference between people with high and low CRT scores in the random presentation condition may be explained by assuming that the unstructured information provided in this condition discouraged people with high CRT scores to apply analytical thinking due to the overwhelming complexity of the information to be tackled. As a consequence, people with high CRT scores would also apply a non-analytical strategy in the random condition, resulting in equivalent performance between people with high and low CRT scores.

Implications for Unconscious Thought Theory

Given that previous studies that did find evidence for an unconscious thought effect all used a between-subjects design, it seems that one reason for why we may have failed to replicate the unconscious thought effect is our use of a within-subjects design. However, it is important to note that previous studies that did not replicate the effect also used a between subjects design (Payne et al., 2008; Calvillo & Penaloza, 2009; Newell et al., 2009). Thus, the use of a between subjects design does not appear to guarantee that one will find a benefit of unconscious thought. Indeed, if we analyze only the data from the first trial, making our within-subjects design equivalent to a between subjects design, we again do not find any effect of unconscious thought.

Another possible reason for why we failed to replicate the unconscious thought effect may lie in the stimuli we used. We devised new stimuli (i.e. notebooks and roommates), which might not be as good as those used in other previous studies. In response to this criticism, however, it is important to note that we selected the attributes of the stimuli based on ratings and complied the new stimuli with the criteria specified by Dijksterhuis et al. (2004). Indeed, it seems unlikely that our choice of stimuli led to the failure to replicate the unconscious thought effect as we also did not observe the effect when we only analyzed trials with cars, that is the stimuli for which Dijksterhuis et al. (2006) did observe this effect.

It is not entirely unexpected that we did not replicate this effect. In line with the main findings of the present study, several previous studies have also failed to replicate the effect even though they used identical methods as those used by Dijksterhuis et al. (2006). Payne et al. (2008) compared the accuracy of judgment in three thought conditions: conscious thought for a fixed time, self-paced conscious thought, and unconscious thought. They found that self-paced conscious thought is similar in effectiveness to unconscious thought. In addition, Acker (2008), Newell et al. (2009) and Calvillo and Penaloza (2009) also did not find evidence for superiority of choices made unconsciously. Taken together, these findings make clear that the unconscious thought effect is not a very robust effect in that it may depend critically on subtle characteristics of the task and the instructions given to the participants.

Conclusion

In summary, the findings reported here provide no evidence for the claim that when making a complex decision, people will think unconsciously about this decision while they are distracted by another task. Our results suggest instead that people make their judgments online, while being presented with information, and that these judgments do not change after performing a distracting task. Our results also suggest that there might be individual differences in how people process the information during information acquisition phase. An interesting issue for future research will be to further explore the relationships between conscious and unconscious decision making on the one hand, and reflective and intuitive thinking on the other.

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A Comparison of Thailand and Taiwan Bottled Tea Markets

Based on Consumption Values Theory

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ABSTRACT

In the world of beverage markets, consumers' drinking preferences change over the period of time. This study focuses on bottled tea markets by comparing consumer behaviors in both Taiwan and Thailand. It is crucial to gain better understanding the values underlying consumers' bottled tea purchase choices. By emphasizing on the behavior of consumers, the intent is to isolate the values motivating behavior and define the relative contribution of each type of value as a function of buyers' choices. The Theory of Consumption Values postulates that market choices are determined by multiple consumption values, rather than multiple product attributes.

Thus, this research intends to apply the theory of consumption values with the bottled tea consumption behaviors of both Thai and Taiwanese consumers. It identifies consumers' consumption values and the role of these values in purchasing behavior. Data were collected through questionnaire distribution conducted in both countries. The collected data was analyzed by using discriminant analysis technique in which independent variables were derived from factor analysis. Results show that Taiwanese consumers focus on emotional and conditional values, however, Thai consumers put more weights mainly on emotional value, social value, and epistemic value.

Results from this study could help to better comprehend and differentiate consumer behaviors regarding product attributes, consumption values, culture differences, and perceptions.

Keywords: Thailand, Taiwan, Consumption Value Theory, Bottled Tea

Introduction

In the past, human consumed only to fulfill basic needs. In the midst of 21st century, consumers' lifestyle changes and related needs for more natural and healthful products are increased; people are seeking for healthy lifestyles to be balanced with rapidly growing economics and society. As a result, many companies try to produce and offer healthier products to customers range from environmental friendly electric appliances, green automobile, organic food and the new age beverage is one of them. The new age beverage includes bottled water, flavored water, sports and energy drinks, vegetable/fruit juice blends, and iced tea etc. (Hannaford, 2003).

Thailand's non-alcoholic beverage market can be segmented into following sectors: carbonated drinks, fruit and vegetable juice, bottled water, functional drinks, bottled tea and coffee, powdered concentrates and traditional Thai drinks. Bottled green tea popularity has been increasing as well as fruit and vegetable juice. A positive trend shows a high growth potential for some product types especially healthy drinks (Eischen, 2005).

The overall soft drinks market was dramatically changed by the sudden success of bottled green tea. A lot of new brands and newly launched products are flooding the market. More importantly, the bottled tea consumption per capita in Thailand remains quite low compared with Taiwan. This, together with the continued increase in health awareness among Thai consumers will stimulate growth of the bottled tea consumption. Additionally, with the very large population of over 65 million people, the demand for soft drinks in Thailand can be considered very dynamic.

Tea drinking is a more common behavior in Taiwan than in Thailand. Tea shops are available in every corner. Taiwanese know the differences between good tea and normal tea. For Taiwanese, tea exists in daily life as a media of food, and appears in every moment of life in many different types and flavors. Moreover, the price of tea is almost the same as the price of bottled water and less expensive than other non-alcohol beverages like fruit and vegetable juices. On the contrary, drinking tea in Thailand is not common; tea is considered as one of many kinds of beverages available in the market. Taiwan tea market offers more varieties of flavors and kinds compare to the ones in Thailand. The channels of distribution for bottled tea in both markets are mainly convenient stores and supermarkets.

To our knowledge, there has been little research on a comparison between Thai and Taiwanese bottled tea consumption behaviors in relation to consumption values. In bottled tea market, there is a great variety among consumers in terms of their needs. Consumers buy products according to their perceptions and preferences. Therefore, it is crucial for companies to comprehend consumers' cognitive patterns in terms of their attitudes towards the attributes of bottled tea, both physical and emotional; so that the company will be guided in the development of the products and services to meet consumers' needs.

This research focuses on the application of the theory of consumption values regarding the bottled tea consumption, a comparison between Thai and Taiwanese consumers to serve as useful information for beverage companies, students and any interested parties. It is noted that the definition of "bottled tea" in this research is the same as "Ready-To-Drink or RTD tea"

Methodology

According to the theory of consumption values (Sheth, Newman & Gross, 1991a), there are five main consumption values regarding bottled tea consumption to be studied (1) functional value, (2) social value, (3) emotional value, (4) epistemic value and (5) conditional value. The definitions of each value was described as follows.

1. Functional value. “The perceived utility acquired from an alternative’s capacity for functional, utilitarian, or physical performance. An alternative acquires functional value through the possession of salient functional, utilitarian, or physical attributes. Functional value is measure on a profile of choice attributes. (Sheth, Newman, & Gross, 1991b)
2. Social value. “The perceived utility acquired from an alternative’s association with one ore more specific groups. An alternative acquires social value through association with positively or negatively stereotyped demographic, socioeconomic, and cultural-ethnic groups. Social value is measured on a profile of choice imagery”. (Sheth et al., 1991b)
3. Emotional value. “The perceived utility acquired from an alternative’s capacity to arouse feelings or affective states. An alternative acquires emotional value when associated with specific feelings or when precipitating or perpetuating those feelings. Emotional value is measured on a profile of feelings associated with the alternative”. (Sheth et al., 1991b)
4. Epistemic value. “The perceived utility acquired from an alternative’s capacity to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge. An alternative acquires epistemic value by questionnaire items referring to curiosity, novelty, and knowledge”. (Sheth et al., 1991b)
5. Conditional value. “The perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker. An alternative acquires conditional value in the presence of antecedent physical or social contingencies that enhance its functional or social value. Conditional value is measured on a profile of choice contingencies.” (Sheth et al., 1991b)

A questionnaire survey was used to collect the data. As the initial step of designing the questionnaire, data were gathered from focus groups by meetings from both Thai and Taiwanese bottle tea drinkers and non-drinkers, additionally, twenty telephone interviews were conducted for Thai respondents who reside in Thailand at convenience. Participants were asked by using open-ended questions relating to functional, social, emotional, epistemic and conditional values. This initial step produced 36, 19, 15, 7, and 17 items for each of the above five values respectively. Dichotomy was used a measurement for each item in which the respondents choose between “Yes” and “No” option.

The questionnaires were distributed in both Thailand and Taiwan. Three hundred and ten Thai respondents and two hundred and eight Taiwanese respondents have answered the questionnaires.

Results

Demographic information of respondents in both countries are shown in Table 1.

Table 1. Demographic Information

Measure	Items	Thai		Taiwanese	
		Frequency	(%)	Frequency	(%)

Gender	Male	152	49.0	117	56.3
	Female	158	51.0	91	43.8
Age	15 years old or below	-	-	3	1.4
	16 – 24 years old	54	17.4	101	48.6
	25-34 years old	189	61.0	77	37.0
	35-44 years old	51	16.5	14	6.7
	45-54 years old	16	5.2	9	4.3
	55 years old or above	-	-	4	1.9
Education	High school or below	3	1.0	16	7.7
	College	48	15.5	74	35.6
	Bachelor's degree	168	54.2	66	31.7
	Master's degree	88	28.4	46	22.1
	Doctorate's degree	3	1.0	2	1.0
	Other	-	-	4	1.9
Monthly Average Income	Below 25,000	136	43.9	124	59.6
	25,001-49,999	123	39.7	64	30.8
	50,000-74,999	33	10.6	15	7.2
	75,000-99,999	13	4.2	4	1.9
	100,000 or above	5	1.6	1	.5
Monthly Average Spending	Below 5,000	23	7.4	52	25.0
	5,001-10,000	103	33.2	87	41.8
	10,001-15,000	60	19.4	31	14.9
	15,001-20,000	58	18.7	13	6.3
	More than 20,001	66	21.3	25	12.0
Occupation	Office worker	213	68.7	66	31.7
	Government Officer	53	17.1	1	.5
	Business owner	8	2.6	2	1.0
	Student	12	3.9	102	49.0
	Housewife/househusband	1	.3	5	2.4
	Other	23	7.4	32	15.4
Drinking Frequency	Seldom (never, seldom or less than 3 times per month)	198	63.9	99	47.6
	Often (4-5 times per month, 2-3 times per week, everyday or other)	112	36.1	109	52.4

Factor analysis were then conducted for both Thai and Taiwan respondents to examine the validity as well as the possible factors in each consumption value category. The result was summarized in Table 2.

Table 2. Factors in each consumption value category derived from factor analysis

Consumption value	Factors (Taiwan)	Factors (Thailand)
Functional Value	Weakness Manufacturer Health Benefits and Concerns Choices Product's Attribute	Flavor Manufacturer Health Benefits and Concerns Choices
Social Value	Conservative Person Commuter Low Income People	Commuter Student Conservative Person
Emotional Value	Freshness Persuasion Uncertainty	Freshness Persuasion Awareness
Epistemic Value	Curiosity	Boredom
Conditional Value	Financial Gathering Stated Benefits	Gathering Stated Benefits

The next step is to use stepwise discriminant analysis of bottled tea choice factors from Taiwan and Thai consumers. Average scores were calculated by averaging items in each component and used as independent variables. Consumers' drinking frequency that was divided into drinker and non-drinker groups were used as dependent variables.

Table 3 indicates the results of the stepwise discriminant analysis of bottled tea choice factors from Taiwanese consumers. Of the 15 extracted factors, only two are retained by the stepwise procedure. These factors reflect the positive and negative contributes associated with bottled tea drinking and non-drinking. Emotional value factor dominates in discriminating the Taiwanese bottled tea drinkers and non-drinkers in this study. Bottled tea drinkers feel uncertainty whether or not they should buy bottled tea. Additionally, conditional value factors showing reasons for Taiwanese consumers that they will drink bottled tea when there is a social gathering, activities with families and shopping with their friends.

Table 3: Result of Discriminant Analysis (Stepwise) of Taiwanese Consumers.

	Coefficients Non- Drink/Drinker	Mean responses	
		Non- Drinker (N=99)	Drinker (N=109)
Emotional value (3) (uncertainty, unhealthy when I drink bottled tea)	.831	.49	.72
Conditional value (2) (I will drink bottled tea when I am with my family, join activities and go shopping)	.537	.65	.77

Eigenvalue	Wilks' lambda	Chi-squared	df	Significance
.143	.875	27.312	2	.000

Table 4 provides the results of the stepwise discriminant analysis of bottled tea choice factors from Thai consumers. Of the 13 extracted factors, only five are retained by the stepwise procedure. These factors reflect the positive as well as negative feelings associated with bottled tea drinking and non-drinking. Social and emotional value factors are the most influential in discriminating the bottled tea drinker and non-drinker for Thai consumers. People who they think that are likely to drink bottled tea are people who are in rush, travelers and who like to go to convenient store. Bottled tea drinkers feel cool and refresh when they drink bottled tea and they will drink bottled tea when they feel tired from work or activities. The emotional value factor still plays a role in Thai consumers' decision making, consumers drinking tea based on its packaging and fashionable feeling. Moreover, they will decide to drink or not to drink bottle tea because of the environmental and health awareness. Lastly, according to epistemic value factor, Thai bottled tea drinkers also like to try new product.

Table 4. Results of Discriminant Analysis (Stepwise) of Thai Consumers.

Thai Consumption Values	Coefficients Non- Drink/Drinker	Mean responses	
		Non- Drinker (N=198)	Drinker (N=112)
Social value (1) (hurry people, traveler, commuter)	.419	.83	.95
Emotional value (1) (freshness, feel cool when drink, drink when tired and happy when drink)	.438	.67	.88
Emotional value (2) (persuasive, attractive and in-trend)	-.392	.68	.60
Emotional value (3) (environmental and health awareness)	.428	.38	.53
Epistemic value (1) (boredom, bored with other beverages, like to try something new and different)	.411	.66	.78

Eigenvalue	Wilks' lambda	Chi-squared	df	Significance
.20	.83	55.87	5	.000

Conclusion

The results in current study indicated that there are differences exist between consumers in both countries. Thus, to enter overseas bottled tea market it is important to create tailor-made marketing and management strategies.

In Taiwan, consumers choose whether or not to drink bottled tea from its physical attribute for example, they will drink diet or beauty bottled tea if it demonstrates the stated benefits, or is thirst-quenching. Manufacturer's consistency is also important because regular tea drinkers will be able to tell if the taste changes. The authors of the theory suggested that using reinforcement oriented promotional techniques which will encourage users to experience for themselves how well a product can perform its functional purposes. (Sheth et al., 1991a) Additionally, bottled tea is associated with attractiveness, fashionable, excitement. The package design is very important since packaging is considered the silent salesman at the point of purchase. According to Geoffrey Hallows, a consultant at Heawood Research, there are two aspects to packaging. "First, there is the physical function. Second, there is the psychological function and that is the one you have got to get right". (Victoria, 2003) Sales promotion is still crucial in urging consumers to make a decision e.g. lucky draw, premium gift, sampling and advertising etc.

Lastly, Beverage Company should built conditional social value for the bottled tea market. "Conditional social value often dominates in situations where cultural norms dictate behavior." (Sheth et al., 1991a) From above-mentioned results, Taiwanese consumers will decide to drink bottled tea when there is a gathering; hence, marketers should create conditional social value feeling e.g. an advertising showing that everyone will drink bottled tea at parties, picnics or meetings etc.

On the contrary, Thai consumers focus mainly on emotional value; advertising should focus on its freshness, happiness, in-trend and attractive packaging. Moreover, new product should be launched since Thai consumers always like to try new products. People do not drink only those beverages that they perceive as healthy all the time. Besides drinking water, what health-conscious Bangkok residents actually drink in their daily lives ranges from milk or drinking yogurt, coffee, green tea, ready-to-drink fruit juice, ready-to-drink soy milk, fresh fruit juice and chocolate beverages. Therefore, there is still a room for a variety of bottled tea in Thai beverage market. When launching a new product, the beverage company should encourage product trial to allow consumers to aware of new product and experience firsthand the epistemic value provided by the products. (Sheth et al., 1991a)

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Correlation Study on Anger and Academic Achievement

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Abstract

Anger is a part of human response, yet it correlates on various unhealthy aspects of human life conditions. Spielberger (2004) for example has explained that anger in and anger out may cause various several medical concerns in the long run; on the contrary, various physical complains of a person may relate to the way the person expresses anger. In educational life, the way a student expresses anger may influence the academic achievement. The less capable the student manages anger, the worse the anger gives impact on academic achievement. This study is based on correlating behavioral anger response with academic achievement of students of a private university. Using correlation data analysis indicates that students with lower GPA score have more anger concerns than students with higher GPA score. Follow up analysis on several individual students indicates that they who have lower GPA score tend to have difficulties in managing their anger and tend to use their anger energy as a form of self-destructive behavior.

Keywords: anger, achievement, students

Introduction

Any form of inconvenience, unpleasantness, or unsatisfied feelings in daily activities may cause anger (Clare & Centerbar, 2004), and those feelings appear as the result of the cognitive responses toward the condition that triggers or stimulates such feelings (Boeree, 1998). Anger is a form of human natural response (Linden, Hogan, Rutledge, Chawla, Lenz, & Leung, 2003). Any person may get angry toward an upsetting or an inappropriate condition (Boeree, 1998), yet the anger expression of each individual may be different (Linden [et.al.](#), 2003). In an educational setting, anger may influence a student's educational achievement (Lebelle, 2000). Various conditions potentially can stimulate student's anger. Unsatisfied feelings toward educational process can stimulate anger among students, and the way the students express their anger can influence their achievement (Lebelle, 2000) and also their health (Linden [et.al.](#), 2003).

The frequencies of anger also can influence the psychophysical condition of a person. High intensity anger can create emotional reaction resulting destructiveness and threatening health (Linden, [et.al.](#), 2003). Anger condition relates to educational achievement (Labelle, 2000) besides

influencing health (Spielberger, Johnson, Russell, & Crane, 1985). Various studies on anger reported that expressing anger or holding anger by repressing it are potentially threatening health, particularly heart problems (Spielberger et. al., 1985). Various studies on anger associated with social environment reported that the way a person expresses anger relates to social expression, and there are significant differences on anger expression between males and females (Boman, 2003). Linden et al (2003) reported that there are 6 forms of anger expression, and thus more than just the previously three forms of anger as being reported by Spielberger et. al. (1985). The six anger forms are: a) direct anger out, b) assertion, c) social support-Seeking, d) diffusion, e) avoidance, and f) rumination.

Spielberger et. al. (1985) clearly stated that *anger in* and *anger out* are potentially creates negative impact on heart functioning, whereas anger control is health anger expression. As Linden et. al. (2003) mentioned that there are actually six rather than three forms of anger, there may be more variety of anger expressions associated with health and educational achievement. Besides, the concept of anger by Linden et. al. (2003) may broadened and add more information of the anger concept of Spielberger et. al. (1985).

This study was conducted on university students in relation to efforts on paying more attention on educational condition and situation in a university. Various conditions in a university may stimulate anger, the interactions between members of an institution have potency to stimulate anger, and requirements in an educational setting can stimulate anger among students thus influencing their educational achievements as well as their health. This research is aimed at anticipating some conditions that have possibilities of inhibiting educational processes. In order to measure the anger response, this research uses BARQ (*Behavior Anger Response Questionnaire*) (Linden et. al., 2003).

Anger

Anger is a form of natural human response which can influence and threaten health from psychosomatic to heart problems (Linden et. al., 2003). Pauls and Stemmler (2003) reported that anger relates to heart activities. When a person gets angry, the heart activity escalates and the glands will release body chemical liquids as a form of defense mechanism. If the anger condition remains for a long period of time, and the person represses anger, the glands will release excessive amount of body chemicals and cause feeling of unpleasant and imbalance.

Pauls and Stemmler (2003) mentioned that when a person feels threatened, the person needs to defend the self. In order to defend the

self, the body will produce large amounts of chemicals to anticipate the threatening situation. Thus anger is a form of natural response toward a perception of threat. Anger even relates strongly with fear (Pauls & Stemmler, 2003). Every person can experience anger even though the person has no hostile feeling toward a particular situation or condition. However, when the condition provokes threatening atmosphere and the person feels unable to deal with the provoking stimuli, he or she will get angry (Linden et. al., 2003).

Hostile is a form of character of a person that stimulates the feeling of disgust, indignation, contempt, and resentment (Linden et. al., 2003). Hostility tends to remain as an attitude of a person and this attitude is directed toward a particular and specific object. Anger, may remain as long as the provoking stimuli exists and will disappear when the provoking stimuli does not exist anymore (Linden et. al., 2003). Normally anger is triggered by an unexpected situation that does not suitable to the individual. The gap between the expectation and the reality often times stimulates anger because a) the situation is perceived as a form of inhibition, b) the person feels unable to control the situation (Boeree, 1998). Therefore, environmental aspects have influence to stimulate anger.

According to Bouree (1998) a person may direct the anger externally to others or internally to the self. They who direct anger externally will tend to produce fight response, sometimes conduct destructive behavior toward the external object. Spielberger [et.al.](#) (1985) also reported that anger may be directed externally (*anger out*) or internally (*anger in*), and both will have negative consequences toward health, primarily on heart problems, because the escalation of heart activity during anger. The longer the anger remains, the harder the heart works and resulting fatigue. Furthermore, Spielberger et al (1985) explained that besides anger out and anger in there is anger control. Anger control is an appropriate anger response by controlling the anger toward appropriate direction so that does not create any destructiveness whether externally or internally.

Anger Response

In various studies on anger, Linden et. al. (2003) explained that the way a person expresses anger consists of six forms which are: a) *direct anger out*, b) *assertion*, c) *support-Seeking*, d) *diffusion*, e) *avoidance*, and f) *rumination*. The direct anger out concept is similar to the concept by Spielberger et. al. (1985), thus a person tends to get angry to others and possible to conduct destructive behavior to others or to the environment. However, assertion (assertiveness) is a form of *anger control* (Spielberger et. al., 1985) thus directing anger by controlling it, non destructive and non resisting anger as well but transforming anger into alternative acts in accordance the needs yet appropriately.

Support seeking act is a form of behavior in order to increase ability to do something and at the same time reducing helplessness in dealing with provoking stimuli. This act may appear in a form of gathering a group of people or hiding the self behind the power of others in order to obtain support on the anger behavior. Diffusing is blending or unifying anger emotion with other forms of emotion, sometimes with cognitive and behavior. These unification forms of emotion, cognition, and behavior may seemingly a unified form of act but on the other hand in anger context may appear as a form of confusion. Avoidance is an act keeping a distance of a person who tends to feel helpless in dealing with the provoking stimuli. Rumination is a form of repetitious thinking process on a particular topic for an extended period of time. The anger response in a form of rumination makes a person keeps the provoking stimuli over and over again and resulting feeling of unpleasant, yet the person may never conduct any effort to take action to deal with the stimuli. As a result the thinking process will remain stagnant on the same problems for a long time and he or she will have difficulties to free the self from anger.

Anger and Gender

Various reports explained that cultures influence anger behavior (Boman, 2003). For example in a particular culture, a wife should not express anger to her husband since it is inappropriate, but the husband can express anger to his wife. In some cultures, women are allowed to express anger in a particular fashion, and men have different way anger expression. For example, crying as anger expression is allowed for ladies in many cultures, but crying as anger expression is considered as inappropriate for males. Thus anger relates to gender (Boman, 2003). Boman (2003) reported that in the US there is significant different between female and male anger expression. Boman conducted his research on 102 US high school students (55 males and 47 females; 87% Caucasian, 13% Asian, and 5% Caucasian-Asian). According to Boman (2003) adolescent males tend to behave more physically than females in expressing anger such as being physically aggressive, and this tendency creates hostility. Such condition does not exist among adolescent females.

Achievement

In many societies, a person's intelligence is normally evaluated based on the achievement (Deckers, 2010). An achievement is a result of an act that causes change (s), associated with a person's need to gain something fast (Beck, 2004), and a continuous effort to do the best for the sake of work improvement and innovation (Rogelberg, 2007). Need of achievement is a motive to obtain success with the characteristic of doing better than before, that surpasses the previous internal and external standard. The standard may be based on work standard, school standard, other people standard or from the self. A person's need of achievement may be considered passive until being activated by a clue to achieve such

as by the act of learning (Deckers, 2010). A high achiever tends to take mediocre level of risk taking behavior and tend to choose mediocre level of challenge in order to evaluate their success (Rogelberg, 2007).

McClelland explained that the development of achievement need relates to positive reward on the previous achievement (Beck, 2004). Spence and Helmreich (Beck, 2004) explained that the dimension of achievement relates to satisfaction on conducting a particular task which creates feeling of mastery. Furthermore, the ability to accomplish a task is associated with feeling of completion, and ability to compete (competitiveness) with others.

Method

Participants

This quantitative non experimental research was conducted on students of a private university with age range of 18-30 years old.

Instrument

The research instrument is *Behavioral Anger Response Questionnaire (BARQ)* by Linden et. al. (2003), using Likert scale and contains 37 items of questionnaire that reflects 6 factor models that consists of a) *Direct anger out*, b) *Assertion*, c) *Support-Seeking*, d) *Diffusion*, e) *Avoidance*, and *Rumination*. The participants select one out of four answer possibilities on each item: Never, Rarely, Often, and Always.

Data Analysis.

Analysis was conducted by using SPSS 17 for Windows release to see the correlation between anger and academic achievement.

Conclusion and Discussion

Based on 161 participants' responses (29 male and 132 female), the result indicates that students who have less anger response tend to have more improvement on their GPA as the semester moves on, and they who have more anger response tend to have decline on their GPA. They who have trend toward declining GPA tend to express anger in forms of assertiveness, anger out, social support seeking and rumination. They who have trend of inclining GPA tend to express anger in forms of avoidance and diffusion. Further analysis also indicates that females tend to be responsive on anger than males, and female students tend to use social support form anger. The correlation study also indicates that the older the students the lower the anger response; and the younger the students the higher the anger response.

Cultural aspect may influence the result on this anger research. Indonesian society tends to educate the people to accept whether positive or negative life conditions by not expressing anger, for anger form of behavior is considered as reactive. Thus, the society tends to behave more passively in dealing with various kinds of life challenges. It is therefore suggested that we explore anger much further in relations to socio-cultural norms.

High achievers participants tend to use avoidance response in dealing with anger since they may not have any other alternative to deal with the feelings. Some of them tend to rationalize the condition thus doing more cognitively in dealing with anger. The lower achiever participants tend to use assertion or using social support in order to gain support in anger, or in behaving destructively.

Difference response on anger associated with gender may relate to the condition that female tends to be more responsive toward emotional turmoil in anger response, whereas males tend to rationalize the feeling thus tend to act more cognitively. Besides, parent's roles in educating their children influence the way the individual expresses anger.

This research also obtains pictures that culture apparently has unique influence on anger expression, and cultural influence is transformed from parents to children. For example mothers have more influence on how children dealing with anger since mothers have more interactive time with children at home compare to fathers. However, we may need further study on influence on parent-child relationships on anger responses.

The older participants tend to show lower anger response compare to the younger ones, and this may relate to maturation. The more mature a person tend to have more experience in managing the emotion, thus having more ability to control the anger response.

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The logo for the International Association for Frontiers in Psychology (iafor) is centered on the page. It features the lowercase letters "iafor" in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue one in the foreground and a light red one behind it, creating a sense of depth and movement.

**Work Stress and Outcome of Stress Among Managers in Malaysia: A Structural
Equation Modeling Analysis**

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Work Stress and Outcome of Stress Among Managers in Malaysia: A Structural Equation Modeling Analysis

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Work stress is always associated with manager's satisfaction, mental and physical well being. Nevertheless, there are limited studies on causal relationship of stressors, satisfaction, organization, mental and physical well being by using structural equation modeling analysis (SEM) among managers in Malaysia. The purpose of the present study is to ascertain the causal relationship of stress and the outcome of stress on managers' well being. This was a cross sectional research, which consisted of 338 managers from various private sectors in Klang Valley and Kuala Lumpur, Malaysia. Pressure management indicator questionnaire was used as the measurement instrument in this study. The SEM results indicate work stress has the direct effect on satisfaction, mental and physical well being. Meanwhile, satisfaction has direct effect on organization and mental well being, organization has the direct effect on mental well being. Mediators also have been identified in the study. The impact of work stress shows mental well being has greater effect on physical well being compare to work stress.

Key Words: Work stress, satisfaction, mental well being, physical well being

Introduction

Work stress incurred cost not only to the organization, but the nation as well. Western countries have well documented the cost of stress; the U.K. has lost 28.5 million days in 2010 (Health and Safety Executive, 2010), whereas in the European country, work stress has affected 22% of the employee well being (European Foundation for the Improvement of Living and Working Conditions, 2007), in the U.S. work stress has costs 300 billion in health care (Schwartz, 2004). In Selangor and Kuala Lumpur, Malaysia, there were 3,118 managers quitted their jobs (Ministry of Human Resources, 2009). However, there were 18,366 and 7,806 workers from Selangor and Kuala Lumpur registered with the Ministry of Human Resources, Malaysia, as new employees in the same year (Ministry of Human Resources, 2009). This may cause by the work stress at their work place.

Work stress is influenced by perception of one (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Hence, terms such as perceive job stress was used in stress study (Chiu, Chien, Lin & Hsiao, 2005; Leung, Siu & Spector, 2000; Spector, Cooper & Anguilar-Vafaie, 2000). According to Sulsky and Smith (2005), stress is complicated; it consisted of stimuli, cognitive appraisal, outcome of stress, and moderator to alleviate the outcome of stress. Work stress in this present study refers to the demands and challenges that caused unwanted outcome to the employee (Williams and Cooper. 2002).

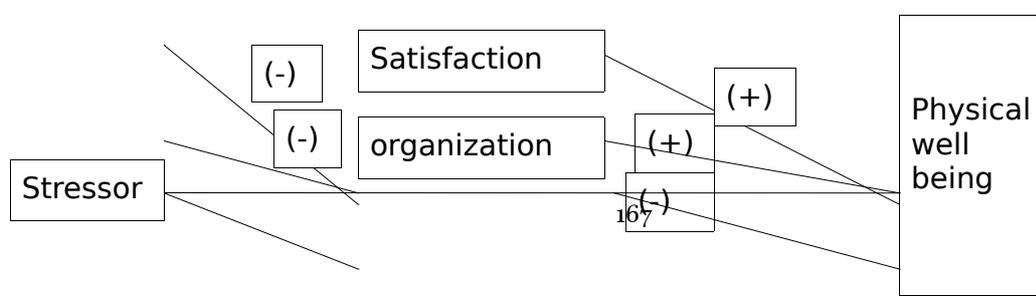
Work stress is always related with negative outcome such as job satisfaction, organizational commitment and employee's well being. Work stress is negatively associated with job satisfaction and organization commitment (Chiu et al., 2005). Managerial work stress also reported negatively related with job satisfaction (Kirkcaldy, Trimpop & Williams, 2002) and organization (Lu, Tseng, Cooper, 1999). Work stress affect job satisfaction and organization mean while it also has inversed relationship with manager's mental and physical well being (Siu, Lu & Spector, 2007; Lu, Siu, & Cooper, 2005; Kirkcaldy, Trimpop & Williams, 2002).

Job satisfaction and organization commitment are focused on the emotional bond to the organization. According to Lee and Henderson (1996), job satisfaction and organizational commitment are attachment to the organization rather than the job only. Job satisfaction results from the perception that one's job fulfills and the values of the organization are synchronize with their values (Locke, 1986). High job satisfaction contributed to general well being (Schultz & Schultz, 2006), whereas low job satisfaction will cause absenteeism and high turnover rate (Furnham, 2005). Organizational commitment is the extent of an individual identifies with an organization and committed to its goal (Kreitner & Kinicki, 2008). The outcome of job satisfaction and organizational commitment are the same when the stress level is high. High organizational commitment will decrease the turnover rate and absenteeism, and vice versa (Meyer & Herscovitch, 2001). Study in China, Hong Kong and United Arab Emirates depicted, job satisfaction is positively related with organization among the workers (Siu, 2002; Yousef, 2002).

Mental well being refers to the ability to live productively, the capacity to live to the fullest, ability to love and cooperate with others, adjusting to the world, and being efficient (MacDonald, 2006). Physical well being the word literally mean one free from critical and chronic illness. Physical illness cause by work stress can be detected through one physiology reaction such as headache, backache, high blood pressure, increase of heart palpitation and allergic (Stranks 2005; Greenberg, 2004). Employees who do not able to cope with stress will experience physical strain (Quick & Quick, 1984). High level of stress is related with low mental well being and physical well being, whereas low level of stress is related with good mental and physical well being (Siu, Lu & Spector, 2007; Spector, Cooper & Aguilar-Vafaie, 2002; Siu, Cooper & Donald, 1997).

Satisfaction and mental well being is positively related with physical well being (Siu, Spector, Cooper, Lu, & Yu, 2002). In Kirkcaldy, Petersen and Hubner (2002) study, organizational security and organizational commitment are the subscale of satisfaction. The result depicted satisfaction was positively related with mental physical well being. In another words, organization security and organizational commitment may be positively related with physical well being. The conceptual model of this study is stressor negatively associated with outcome of stress which are satisfaction, organization, mental and physical well being. In the other hand, satisfaction, organization and mental well being are positively related with physical well being. Refer to Figure 1.

The purpose of the research is to investigate the causality of stress and outcome of stress, and the relationship of observed variables in the outcome of stress. There are limited study of the causality of work stress and outcome of stress among the managers in Malaysia. Therefore, the present study is to examine the relationship of stress, satisfaction, organization and mental well being on to physical well being among the managers in Malaysia. This research is to improve the physical well being of the managers in Malaysia generally.



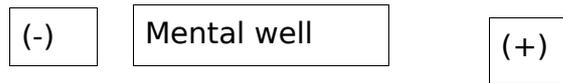


Figure 1: Conceptual model

Method

The data were gathered from 338 managers from Klang valley and Kuala Lumpur Malaysia. Klang Valley and Kuala Lumpur are chosen because of both area are the city and concentration of various industry. Managers participated in the present study were from various industries. There were 176 female (52%) and 162 male (48%), aged between 25 and 59 (mean= 33.72, SD= 7.83), 72 Malay (51%), 142 Chinese (42%) and 24 Indian (7%).

The Pressure Management Indicator questionnaire (PMI) was used in the present study (Williams, 2000). PMI is a compact and reliable stress measurement tool (Williams & Cooper, 1998). PMI is a comprehensive measurement tool as well. It is a 6 point Likert scale. Sources of stress encompasses of workload, relationship, recognition, organization climate, personal responsibility, managerial role, home/work balance and daily hassle. The higher scores mean higher stress one that would experience. The outcome of stress is measured by satisfaction, organization, mental and physical well being. Satisfaction is measured by job satisfaction and organization satisfaction. Organisation is measured by organisational security and organisation commitment. Mental well being is measured by state of mind, resilience and confidence level, whereas physical well being is measured by physical symptoms and energy level. Higher score mean higher satisfaction, organization, mental and physical well being.

Data Analysis

Structural equation modeling (SEM) was used in this present study because SEM able to determine the casual relationship of the observed variable in single model. AMOS was used to identify the measurement model of stressor, satisfaction and mental well being. Modification index was used for repeated testing on the measurement model to verify the variables. After a few testing on the measurement model, few variables were removed from the measurement model. Goodness of fit indices such as Chi-square, Normed Fit Index (NFI), Goodness-of-fit index (GFI), the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI) and Tucker-Lewis index (TLI) were used to determine whether the model fit with the data collected.

Result

After several testings on the measurement model by using modification index, the goodness of fit indices for the measurement models are shown in Table 1.

Table 1 Goodness of Fit Indices for the measurement models

Measurement model	χ^2	df	NFI	GFI	RMSEA	CFI	TLI
Sources of stress	58.65	23	.96	.96	.07	.98	.96

Satisfaction	28.00	9	.96	.97	.08	.98	.97
Organization	19.99	9	.931	.98	.00	.96	1.0
Mental well being	7.26	5	.99	.99	.04	.99	.99
Physical well being	11.05	5	.98	.99	.06	.99	.98

The result depicted the measurement models are fit with the data collected and met the requirement according to CFI, GFI, NFI, which is larger than 0.9 (Hu & Bentler, 1999; Kline, 2005, Bentler, 1990), TLI larger than .95 (Hu & Bentler, 1999) and RMSEA less 0.08 the (McDonald & Ho, 2002).

The overall model of stress, satisfaction, organization mental and physical well being has the good fit with the data: $\chi^2 = 1.211$, $df=2$, $GFI=.99$, $NFI=.99$, $RMSEA=.00$, $CFI=1.00$, $TLI=1.01$, and $n=338$. Sources of stress has negative path coefficient with satisfaction (-.34, <0.001), mental well being (-.24, <0.001) and physical well being (-.16, <0.001). The result shows stress has negative direct effect with satisfaction, mental and physical well being, but stress does not have significant direct effect with organization. Refer Figure 2.

Figure 2: The standardized path coefficient and goodness of fit indices of stress, satisfaction, organization, mental and physical well being model

There are casual relationships between the outcomes of stress. Satisfaction has positive path coefficient with organization (.54, <0.001) and mental well being (.19, <0.001), whereas organization has positive path coefficient with mental (.30, <0.001), and mental has positive path coefficient with physical (.52, <0.001). The result shows satisfaction and organization do not have direct effect on physical well being, nevertheless satisfaction and organization have indirect on physical well being. In other words, satisfaction and organization through mental well being affect physical well being. Mental well being is the main factor, which affects physical well being, even though stress can be another factor that affects physical well being.

Stress has an indirect effect on organization through satisfaction, but stress is not related with organization significantly. According to Hair, Black Babin and Anderson (2010), the indirect effect more than 0.08, the value is sizable. Therefore satisfaction is fully mediated stress and organization. Stress does not have an indirect effect neither through satisfaction nor organization to mental. Nevertheless, there is direct effect from stress to mental. Stress is significantly related with physical and has sizable value for indirect effect from stress through mental to physical (-0.12). Hence, mental is partially mediated stress and physical. Satisfaction is significantly related with mental and has sizable indirect effect from satisfaction through organization to mental (0.16). Hence, organization is partially mediated satisfaction and mental. Refer to Table 2.

Table 2: Analysis of direct and indirect effect for the variables of stress, satisfaction, mental and physical

Path variable	Indirect effect	Direct effect
stress → satisfaction → organization	-0.18	-0.01
stress → organization → mental	0.00	-0.24
stress → satisfaction → mental	-0.06	-0.24
stress → mental → physical	-0.12	-0.16
satisfaction → organization → mental	0.16	0.19

Discussion

The purpose of the article is to examine the causal relationship of work stress and the relationship of the outcomes of stress on physical well being. After analysis, the result shows that stress is negatively related with satisfaction, mental and physical well being. This is consistent with the previous study (Siu, Spector, Cooper & Lu, 2005; Lu, Kao, Cooper, & Spector, 2000; Cooper, Kirkcaldy & Jennifer, 1994). Work stress will produce negative feeling toward job and reduce mental and physical functioning of managers.

This study reveals work stress does not have direct effect on organizational commitment and security, but it affects organization indirectly through job satisfaction. Work stress is not related with organization this is because of satisfaction fully mediate stress and organization. Managers who have high level of job stress will have low level job satisfaction which affects their commitment and feeling toward organization security.

Satisfaction is related to organization and mental well being. As discussed earlier in the above paragraph, satisfaction is the mediator for stress and organization, so it is not a surprise that satisfaction is related with organization. Managers who have high level of job satisfaction will have high mental well being. The result is supported by previous study (Lu, Siu & Cooper, 2005; Lu, Kao, Cooper, & Spector, 2000; Cooper, Kirkcaldy & Jennifer, 1994). The result explains that high level of job satisfaction will allow managers to have clearer state of mind and ability to cope with problems.

Organization is positively related with mental well being. According to Storseth (2006), organizational commitment and mental well being has bidirectional relation. Employee who has low organizational commitment will affect their mental well being and vice versa. Furthermore, mental well being affects physical well being positively. The result explains that managers with clear mind and confidence will have higher state of energy and better physical health. The result is supported by other researchers (Lu, Siu & Cooper, 2005; Siu, 2002; Lu, Kao, Cooper, & Spector, 2000; Cooper, Kirkcaldy & Jennifer, 1994).

Mental well being is positively related with physical well being, and the direct effect of mental well being and physical well being is greater than work stress and physical well being. The result is corroborated with Siu (2002). In her study, the results indicated mental well being is related with physical well being. Furthermore, mental and physical well being has stronger relation compared work stress and physical well being. Hence, mental well being has stronger impact on physical well being compared to work stress on physical well being. This may due to perception and mindset that affect the managers mental health. Perception and appraisal toward the environment affect an individual emotion (Lazarus, 1999). Hence, a stressful situation is perceived by one, it will affect his / her emotion and physical eventually.

The result indicated organization partially mediate satisfaction and mental well being, and mental well being also partially mediate stress and physical well being. According to Baron and Kenny (1986), there are two types of mediator. There are fully mediated and partially mediated. Partially mediated is the independent variable and dependent variable is significant related, before or after adding the mediator in the relationship of independent and dependent variable. In other words, the relationship of independent variable and mediator is significant and higher compared to the independent with the dependent variable. The result showed satisfaction and organization relation is stronger than satisfaction and mental, whereas stress and mental relation is stronger than stress and physical. This result is supported by the previous study (Siu, 2002). According Kobasa, Maddi and Kahn (1982), organizational commitment provides the sense of belonging (Cited in Siu, 2002). The sense of belonging will enhance the positive outcome such as managers will have better mental state.

There are two implications of the present study. Firstly, work stress has direct effect with satisfaction, mental and physical well being, whereas mental well being also has direct effect on physical well being. Nevertheless, satisfaction and organization contribute to indirect effect on physical well being. Therefore, higher management should aware of the employees' work stress level, organizational commitment and their mental well being, in order to reduce the cost of management. Employees who are not healthy may incur more cost in term of money and lost of working days. Furthermore, it may cause the organization to lose human asset. Secondly, organization is the mediator for satisfaction and mental well being, mental is the mediator for work stress and physical well being, and satisfaction is the mediator for work stress and organization. The higher management by identify the mediator they are able to control the outcome of stress in a more effective way.

The present study is to examine the relationship of work stress and the outcome of stress among the mangers. Hence, the future study should test the model on other occupational groups in order to be generalized to the population.

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Active or Lazy: what motivates workplace performance?

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“Brave New World: Hearts and Minds”

Active or Lazy: what motivates workplace performance?

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This article describes the pilot research aimed to define motives lying behind counterproductive behavior (procrastination) during

creative task performing. The main hypothesis was that the level of procrastination varied depending on the needs and values that prevail in employees, was approved. It was found that need in self-actualization, values of stimulation and achievement predict low level of procrastination, while need in comfort and safety and value of conformity predict high level of procrastination.

Keywords: motivation, needs, values, creativity, counter-productive behavior, procrastination

Today's businesses prioritize work effectiveness, and psychology is looking for ways to improve human resources. One of the major job performance parameters is *professional productivity*, which is defined as the effective use of professional resources to achieve the goal (Druzhilov, 2003). While one part of productivity research is devoted to studying the factors that increase productivity (Munchinsky, 2006), another part of the research is interested in understanding the counterproductive workplace behavior which are destruction of property, misuse of information, poor-quality work, alcohol, inappropriate verbal and physical actions, and misuse of time (Cullen & Sakett, 2003). The last component has recently attracted a lot of scientific attention and received the term *workplace procrastination*. It is said to bring significant money losses to companies and employees (Ferrari, 2010; Steel, 2007). There were a number of researches done to study motivation influencing the productivity of job performance, but limited amount of researches discussed the motivation behind counterproductive behavior and, particularly, behind workplace procrastination.

Work Motivation

The whole set of driving forces that stimulates person activity at the workplace and have a certain goal orientation may be called *work motivation* and it is defined by Pinder (1998) as "a set of energetic forces that originate both within as well as beyond an individual's being, to indicate work related behavior, and to determine its form, direction, intensity, and duration" (as cited in Munchinsky, 2006).

Motivation was defined by Pitchard, Harrell, DiazGrandos, and Guzman (2008) as a resource (energy

pool) allocation process whereby energy spreads across actions and tasks to maximize the person needs satisfaction.

One of the most discussed motivation theories is the Need Hierarchy Theory (Maslow, 1970) which differentiates between the following five types of needs that most people behave to satisfy: physiological, safety, social, self-esteem, and self-actualization. At any particular time a person has certain needs to satisfy. However, satisfaction is not limited to simply meeting one's needs. Other factors like personal values are also involved. *Personal values* refer to personal goals that are able to stimulate human behavior and regulate workplace performance, in order for people to achieve their goals (Bojovich, 1995; Gannon, 2002; Schwartz, 2006).

Thus in the research we considered needs and personal values as regulators of professional performance.

The general assumption of the research was that people will differ in the level of procrastination depending on the needs and values that prevail in them.

Procrastination, laziness, and performance

Procrastination is the purposive and frequent delay in beginning or completing a task to the point of experiencing subjective discomfort (Diaz-Morales, Cohen, & Ferrari, 2008). It can be characterized by counterproductive, needless and delaying behavior (Shraw, Wadkins, & Olafson, 2007). Chronic procrastinators are characterized people with low motivation, but gross laziness (Ferrari, Johnson, & McCown, 1995).

Even if most researchers consider procrastination and laziness as synonymous (Thakkar, 2009), there are still some who claim that procrastination is not the same as laziness (Ferrari, 2010). Everyone procrastinates and can be lazy, but not everybody can be called a procrastinator. Some people spend more time procrastinating, others delay or interrupt their work with counterproductive activities occasionally.

Nevertheless, being manifested from counterproductive behavior, procrastination is said to negatively affect workplace performance. Steel (2007) and Mehrabian (2000) found a strong negative relationship between performance/career success and procrastination. In addition, delays made until deadline and the problems caused by that were discussed by Gersick (1989) and Ferrari (2010).

Creativity

In discussions of professional activity professional creativity often is claimed to be more favorable and is said to require much more resources (Amabile, 1996; Woodman, Sawyer, & Griffin, 1993) than in comparison with a routine performance (Borman & Motowidlo, 1997).

Career commitment is significantly greater in people with radical creativity when in people with incremental creativity and routine performance (Madjar, Greenberg, & Chen, 2011). It might look like creative task attracts more interest and, thus, reduces procrastination, however it was found out that creativity sometimes takes more time than necessary to finish the task (Cohen & Ferrari, 2010; Schraw, Wadkins, & Olafson, 2007) The search for inspiration or new ideas may lead to procrastination, however it was discovered that the link between creative process and procrastination is very weak, for people usually do not delay finishing the task.

That is why it may be more reasonable to understand the effect of procrastination on productivity by assessing the results of a creative task. But it is also not clear on what exactly motivates employees to be creative because nowadays we have very limited knowledge about motivators of creativity or routine work (Ford, 1996; Unsworth & Clegg, 2010).

Schwartz value theory (2006) has 10 values that form a motivational continuum with two bipolar dimensions: openness to change (hedonism, self-direction, and stimulation) and resistance to change (security, conformity, and tradition). It was mentioned that openness to changes is one of the important characteristics for professional creative activity (Amabile, 1996; Bojovich, 1995).

Authors define motivation of professional creativity as a motivation that has highly inspired thinking as its basis that leads to the creation of new ways, means, and methods of performing professional task. As a result, it forms and improves significant social and professional qualities (Kashapov, 2006).

Thus the research is aimed to understand the effect of motivation on procrastination during the creative task performance.

Motivation of Procrastination

There is not much said about the different types of employees' motivation that influence their counterproductive behavior or influences procrastination. However, existing findings in the field of procrastination can help us to build assumptions.

Ferrari (2010) mentioned that people delay a lot of tasks with no regard to the needs these tasks satisfy. At the same time people will procrastinate if they expect that their needs are not going to be met. We may say that there are no definite answers if needs or values will affect level of procrastination. However, we are able to build some hypotheses based on the researches done in the field of procrastination.

According to Ferrari (1991) procrastinators are interested in strengthening their social skills. Amabile (1988) pointed out that conformity usually restricts creativity (as cited in Andriopoulos, 2001). Thus, we hypothesize that the need in communication and belonging, as well as value of conformity (it was also mentioned earlier as related to resistance to changes) will positively predict the level of procrastination.

Self-actualization need, which represents the need to be the best we can be, was connected to perfectionism by Ferrari (2010) and assumed that it will positively predict the delay in tasks. Striving for achievement and self-actualization are acknowledged as aspects of perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990) cited in (Walsh & Ugumba-Agwunobi, 2002). However, self-handicapping behavior and motivation was found in procrastinators (Ferrari, 2010), which tells us that procrastinators may have a low development of achievement value. Thus, we hypothesize that need in self-actualization will be positively related to perfectionism, while value of achievement will be related negatively.

Procrastinators delay tasks to avoid discomfort (Ferrari, 2010), Still (2007) has discovered that people increase their procrastination while in the anxious state. Sensation seeking has been found to have low correlations with procrastination (Steel, 2007). At the same time Ferrari (2010) mentioned that procrastinators like to delay tasks because they like the thrill of the last minute rush. Thus, we hypothesize that need in

comfort and safety, as well as value of safety will predict low level of procrastination, while values of stimulation and hedonism will predict high level of procrastination.

Choi and Moran (2009) claim that procrastination may be active. The word 'active' refers to a category called active procrastinators. These individuals purposely put off work until the deadline because they perform better when under pressure. For active procrastinators, they plan the schedules beforehand and make time for other unrelated activities, until the deadline nears whereby they then get their motivation to finish up their original work when challenged by time factors (Chu, & Choi, 2005; Deci, & Ryan, 1985).

However, Ferrari (2010) argues their opinion, stating that procrastinating is opposite to being active. Opposite of active procrastination is passive procrastination (Chu, & Choi, 2005). Passive procrastination, or normal procrastination, is described as people who refrain from working on their original assignments and are more inclined to do other things that give more gratification (Tice, & Baumeister, 1997). Contributing factors can simply be a dislike for the task (Steel, 2007). Burka, & Yuen (1983) refer to this as an "irrational delay" because the person holds off doing work, despite knowing that the outcome will not turn for the better (Steel, 2007). This is in contrast to active procrastinators, who know that they will achieve the results that they want. Procrastination due to task aversion, anxiety or inability to meet perfection (Burka, & Yuen, 1982) is more plausible than procrastinating to get motivation (active procrastinator), and this is supported by Ellis & Knaus (1977) who approximated that about 95% of college students procrastinate.

Thus, we hypothesize that motivation of general activity (discussed below) will negatively predict the level of procrastination.

Hypothesis 1: the level of procrastination will vary depending on the needs and values that prevail in employees.

Hypothesis 2: motivation of general activity, comfort, and values of safety, and achievement will positively predict the productivity in creative task; while motivation of self-actualization, communication and belonging, value of

hedonism and stimulation, and conformity will negatively predict productivity in creative task due to procrastination.

The effect of remaining needs and values (physiological need, self-esteem, value of power, benevolence, universalism, self-direction, and tradition) was not included to our study, because their relation with procrastinating behavior is unclear.

METHOD

Participants and Procedure

We conducted our research on 49 employees in Russia, being not precise in differentiating the participants by their gender, age, marriage or education because previous researches reported in Ferrari (2010) found no significant differences in level of procrastination depending on these socio-demographic characteristics. 30 women and 19 men participated in the research. The mean age was 31 year, SD – 3.45.

We contacted 80 employees that have already participated in Yaroslavl State University researches and invited them to participate in the study. We explained that the research studied possible effect of personal qualities on employee performance, and at the end of the task they'll be given the feedback about their personal qualities. The response rate was 61.25.

Before completing assessments, participants were assigned code numbers and assured that all information will be kept confidential.

At the first stage the participants completed the questionnaires that they had during their free time and were required to bring it along in order to participate in the professional thinking test. Each worker at the office room did the test separately. This took about 40 minutes. Besides the standard instruction, no additional stimuli or encouragement were used.

Measures

Diagnostic of creative productivity and procrastination was done using “Diagnostic of Professional Creative Thinking” method, developed by A. Leybina. The method passed the proper verification procedure of professional and personal development at the Yaroslavl State University in 2004-2006. The criteria of creativity and activity were used as main indicators of professional productivity. The diagnostic procedure was organized in the following way: the participants received the set of items (equal to each person) and the standard instruction. The test was completed within 15 minutes, but we made some changes to the instructions in order to assess procrastination. We told participants that they had to spend 40 minutes in the office. During that time limit they had to complete the task. Generally, people required half of the allocated time to do the task. But because of the extra time they were allowed to browse at the selection of magazines offered. After they were finished with the task they had to say, “I’m done!”

The following indicators were used:

(O) – the indicator of originality which is determined as the relation of concrete idea originality to the general amount of ideas (was assessed by the table of standard answers).

(F) – the indicator of fluency, which is determined as the amount of ideas proposed in a given interval and is calculated by the formula $F = X/N$ where X – amount of ideas and N is the amount of minutes person spent from the beginning of the test till she/he said “I’m done!” This parameter of the test shows the procrastination.

(C) – the indicator of complexity which is determined as the amount of ideas created.

(Fl) – indicator of flexibility, which is determined as the variety of the ideas related to the amount of ideas.

All the coefficients were calculated by E.P. Torrance formulas (cited at Tunik, 2006).

Each activity was monitored and categorized as important (related to the task) and not important (not-related, like using personal phone, magazines browsing, etc.). The final creativity coefficient was multiplied on the amount gotten after dividing important activity on unimportant activity, which varied from 10 to 0.1. The higher were the results for

these test, the higher was productivity and the lower procrastination.

Needs were assessed using the “Method of personal motivational structure assessment” (Milman, 1990). The questionnaire contained items that were created while considering labor activity and casual activity. The method assesses the following variables:

Life support motivation refers to pragmatic and physiological needs. *Comfort and safety motivation* refers to need for comfort and safety. *Motivation of status and prestige* refers to need for self-assessment. *Communication and belonging motivation* refers to the need for communication and belonging. *General activity motivation* was described by Milman (1990) as the one reflecting vitality, subject’s desire of energy and some activity (integrates physiological and comfort and safety needs). *Creative activity motivation* reflects the need for self-actualization, as well as *motivation to be useful for society*.

Personal values were assessed by Schwartz value inventory adapted by Karandashev (2004). The following value variables can be assessed using the questionnaire: Power, Achievements, Hedonism, Stimulation, Self-direction, Benevolence, Universalism, Tradition, Conformity, and Safety.

Control variables. It was already mentioned that the possibility of participants demographic characteristics would confound the relationships examined was very low. We expected that political events or economical changes might affect the performance that’s why the research was done within one month (August 2008). It was possible that time of the day and day of the week may also affect productivity, which is why the meetings with participants were conducted on Tuesdays, Wednesdays and Thursdays from 11:00 till 16:00 (2 hours before or 2 hours after lunch). The participants were asked to come after the 1-hour rest (that they were not rushing for lunch or resting during the test). All of the participants claimed to be in the proper state. Due to minimize the influence of personal creativity only the factors of fluency and important – unimportant tasks were used in “Diagnostic of professional creative thinking”.

RESULTS

Table 1 shows mean and standard deviation for the variables.

A multiple regression was conducted to assess the effect of employees' different types of motivation and values on the level of activity (procrastination) in performing the task.

The value of R^2 was .93 (adjusted R^2 was .88), a value that was highly significant, $F(20,28) = 19.06, p < .001$. The standard error of the estimate was 3.15.

Some independent variable alone correlated significantly with the dependent variable, as it is shown in Table 1. Motivation of creativity ($r = .87, p < .01$), motivation of comfort ($r = -.56, p < .01$), motivation of being useful for society ($r = .32, p < .05$), motivation of communication ($r = -.60, p < 0.01$), value of achievement ($r = .75, p < .01$), value hedonism ($r = .40, p < .01$), value stimulation ($r = .52, p < .01$), and value safety ($r = .28, p < .05$).

Table 1
Descriptive Statistic and Variable Inter-Correlations (N=49)

	M	SD	1	2	3	4	5
1. Activity Level	23.37	9.20					
2. M-General Activity	21.08	5.79	-.03				
3. M - Creativity	24.90	7.80	.87**	-.02			
4. M - Comfort	21.88	6.13	-.56**	.27*	-.43**		
5. M – Useful for society	25.10	6.95	.32*	.49**	.31*	-.08	
6. M - Communication	23.53	6.20	-.60**	.22	-.45**	.90**	-.07
7. M - Basic Needs	19.76	6.27	-.29*	.51**	-.14	.63**	.24*
8. M – Status	21.20	8.26	.13	.27*	.28*	.31*	.41**
9. V – Achievement	10.88	7.10	.75**	-.14	.73**	-.32*	.16
10. V – Hedonism	10.16	5.59	.40**	-.05	.27*	-.14	.12
11. V – Stimulation	16.61	9.45	.52**	.08	.39**	-.27*	.28*
12. V – Conformity	12.12	6.45	-.16	.01	-.25*	-.04	-.07
13. V – Safety	12.08	6.78	.28*	.26*	.20	-.03	.16

Table 1
Continued

	6	7	8	9	10	11	12	13
6. M - Communication								
7. M - Basic Needs	.57**							
8. M – Status	.27*	.48**						
9. V – Achievement	-.39**	-.20	.16					

10. V – Hedonism	-.27*	-.01	-.09	.38**			
11. V – Stimulation	-.30*	-.06	.13	.20	.29*		
12. V – Conformity	-.04	.02	-.21	-.39**	-.04	.11	
13. V – Safety	-.02	.03	.32*	.34*	.07	.29*	-.10

Note: M = motivation, V = Value

* $p < .05$; ** $p < .01$



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Table 2
Semipartial r values and beta values together with significance tests for independent variables in the multiple regression analysis

Variable	Coefficients			
	Semi-partial r	beta	t	sig.
1. Activity Level			2.95	.006
2. M-General Activity	.042	.068	.85	.401
3. M – Creativity	.168	.358	3.40	.002
4. M – Comfort	-.116	-.383	-2.34	.026
5. M – Useful for society	.053	.078	1.07	.293
6. M – Communication	.038	.117	.76	.452
7. M - Basic Needs	-.021	-.041	-.43	.672
8. M – Status	.034	.062	.69	.493
9. V – Achievement	.137	.312	2.77	.010
10. V – Hedonism	.046	.063	.94	.355
11. V – Stimulation	.174	.257	3.51	.002
12. V – Conformity	.020	.073	.405	.688
13. V – Safety	-.004	-.006	-.08	.936

Note: M = motivation, V = Value

Semipartial r values and values of beta for all the independent variables are shown in Table 2 together with the results of significance test. The following independent variables were accounted for the significant amount of unique variance of the dependent variable.

The motivation of creativity ($beta = .36, p < .01$) contradicts to our hypothesis. We expected that people with higher motivation of creativity will procrastinate more, however it is obvious that they procrastinated less.

Motivation of comfort and safety ($beta = - .38, p < .05$) was opposite to our hypothesis. Whereas it was predicted that procrastination would be lower in those who need of comfort and safety it was actually found that they have higher level of procrastination.

Value stimulation ($beta = .26, p < .01$) contradicts to our hypothesis. It was expected that employees with higher stimulation orientation will procrastinate more, however they procrastinated less.

Value of hedonism, motivation of general activity, to be useful for society, communication and belonging appeared to be not able to predict procrastination, which, again, contradicted our hypothesis.

However, our predictions about value of achievement ($\beta = .31, p < .01$) were supported. Value of achievement was shown to be negatively related with procrastination.

The expectations towards value of conformity ($\beta = -.16, p < .05$) were also proven. This variable is able to positively predict level of procrastination.

We should notice that even if our Hypothesis 2 was approved only partially, Hypothesis 1 that people will differ in the level of procrastination depending on the needs and values that prevail in them has been proven.

DISCUSSION

It was found out that needs and values can predict level of employee motivation during the creative task performance.

High orientation on achievement value can predict low level of procrastination, which goes in accordance with theory (Ferrari, 2010). People, suffering from learned helplessness and self-handicapping behavior may react with anxiety towards a task that seems tough or complicated for them. On the contrary, people with achievement value are guided by the idea of overcoming difficulties, reaching the highest level with lesser regards to the challenge (Schwartz, 2006).

High value of conformity makes employees look for accepted structures and strategies (Schwartz, 2006), thus, tasks that require a great deal of creativity might be frustrating for them. Their procrastination may have been produced by an expectation of guidance and clear ideas, and it could somehow be difficult for them to deal with a task that was expected to be assessed by others (researcher). This supports the theory and confirms our predictions. There were several needs and values that were found to affect procrastination differently, judging from the conclusions made based on the literature review.

Motivation of creativity, which represented the need in self-actualization (together with motivation of commonwealth which was found to have negative

correlation with procrastination), was able to predict low level of procrastination, while it was expected that this would correlate with high procrastination. This finding could be explained by results from Cohen and Ferrari (2010). Even if creativity may require time to finish the task in comparison with simple replication, it may actually lead to faster performance. We can make a conclusion that need in self-actualization may not necessarily lead to procrastination, for it can even reduce the procrastination unless the trait perfectionism is involved.

It was found out that need in comfort and safety predicts high level of procrastination while value of stimulation predicts low level of procrastinating behavior in creative task. This finding may clarify the question that Ferrari raised in his latest work (2010); in that thrill is the consequence but not something that procrastinators were originally looking for. Farley frequently emphasized the thrill-seeking trait of creative people (Barron, 1988; Farley, 1981). According to Maslow's Need Hierarchy (1970) the needs of higher order (self-actualization) cannot be met unless the needs of the lower order are satisfied. Thus, we may assume that individuals with low level of safety need satisfaction will get no or low interest in creative task which may lead to procrastination. This might be supported with the fact that need in communication and belonging showed highly significant positive relations with procrastination level.

Future research

The research conducted can be considered as a pilot. Due to limited amount of participants we were not able to provide the full exploration of motivation laying behind counterproductive behavior in creative tasks. We expect to enlarge the number of participants to confirm our findings and build the structural equation model of motivation of procrastinators. It may be also useful to conduct not one, but several assessments of procrastination (e.g. self-reports and expert assessments, provided by managers and supervisors), in order to decrease the influence of other factors on the performance. We assume that the characteristics of the task, personal issues or some other motivational factors might affect creative performance of the participants.

CONCLUSION

Counter-productive behavior has become a widely discussed problem in today's society. Psychology science has discussed the topic of motivation: 'how should we motivate people to work better?', but so far nothing was mentioned about what motivates counterproductive behavior. It is obvious that employees who practice counterproductive behavior are similar to productive employees, in terms of motives and values. In our opinion, knowledge of the motives and values that reveal in counterproductive employees will open a lot of opportunities for trainings and assessment and may also help to deal with such a problem as workplace procrastination. The results of discussed research showed that procrastination do vary depending on the motives that prevail in employees and it is possible to predict the level of procrastination by assessing needs and values of the worker. Need in self-actualization, values of stimulation and achievement predict low level of procrastination while need in comfort and safety, as well as value of conformity predicts high level of procrastination.

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The motives and semantic attitudes of the Chinese and Russian teachers, their influence on the emotional well-being of students Alexandrova Tamara, Far Eastern State University for Humanities, Russia

Psychological research considers motivation-semantic attitudes of person as mechanism of stable orientation on any activity (including - professional) and selective attitudes to a phenomenon meaningful for personality.

Education, as an important sphere of human vital activity is the most important source for the development the motivation-semantic attitudes for a person. Within this system the value-semantic core of personality is formed through experience of values, humans master the ways of communication interaction within the system «Human-Human» which in many respects determines the strategy and quality of life an individual.

We consider the motivation-semantic attitudes to be fundamental within the structure of personality of teachers and their activities.

The motivation-semantic attitudes of teachers determinate their willingness for a certain perception of students (either status or personality) and their willingness for interaction with them, and influence on students' personal development as subjects of educational space.

According L.S. Vygotsky, motivation sphere of teacher must determine the educational situation, as the educational situation is determined not only by educational material, but also by the nature of the interpersonal relation within the system «Teacher-student». L.S. Vygotsky laid the foundation of the personal approach in psychology. He wrote that «personality become what it is, through what it presents for others».

Human nature is self-sufficient. Human nature possesses a specific phenomenon: capability of creative, willingness to preserve and develop personal characteristics in the educational process. The attempts to improve the educational process through the modernizing the contents of educational material do touch the motivations and personal attitude of the subjects. Thus, such improvement of education does not promote the emotional well-being and personal development of students. The successfulness of teacher's activity depends on the orientation to the emotions and feelings of students. Teachers, in comparison of other professions, are in specific situation. They are a powerful factor of personal development of students. It is difficult to overestimate the value of personal characteristics of teachers, their motivation-semantic attitudes, which determine the students' own personal meanings. The world of existential objects in the conditions of social objectivation sharply narrows the possibility of their spiritual interaction. Group dominates in society, social interaction are mechanical. Society itself as result turns out to be the system, in with «public relations of the person reality introduce with person, residing outside of people and on people». The person in such society is deprived of «free intimacy» of relations. An individual lives in society where unfreedom dominates. This results in the sufferings of person, his spiritual discomfort, which testifies that the individual is alive and his spirit is not destroyed. Liberty to thought and creative activity are the must, otherwise there is no sense. Consequently, teacher as personality is involved in process of general dialectical relationship between the presented meanings of the participants of educational space and is an active factor of dynamics of these individual meanings. B.S. Bratus name the attitude to the other person «the very general criterion, watershed, distinguishing the personal from unpersonal in sense-formation, which can referred to other layer of the psychological reflection».

The value orientation of the teachers can not but influence the value-semantic space of their students. The psychological microclimate and emotional well-being of students in educational, depends on motivation-semantic and value orientation of teachers.

The motivation-semantic attitudes, being a core formation of personality, in process of interaction in system «Human-Human» profound and presented two base opposite positions: orientation on Human (anthropooriented) and orientation on status, formal perception the other (imperative-scientistic). The motivation-semantic attitudes of teachers influence the emotional well-being of students as important factor of their development.

The anthropooriented motivation-semantic attitudes of personality generate the «the effect of value continuum» which determines the so-development of congruous derivative from personal qualities of the subject of interaction.

The anthropooriented attitudes of teachers, their willingness to act, determined by future as the reason of activity, aim them at choice of new educational technologies, or «mild», psychologically capacious.

The imperative-scientistic attitudes of different teachers are of reduced (stereotyped) nature and identical in its contents, even of teachers of different nationalities (Chinese and Russian).

The specific of the motivation-semantic attitudes of personality of teachers, concluding in their value essence, in their relationship with their professional-semantic identifications, with different levels of intellectual and emotional flexibility.

The goal and value of anthro-oriented motivation-semantic attitudes of teachers is to admin the existential of students' personality and their base needs.

The positive interconnection between the emotional well-being of student and motivation-semantic attitudes of teachers is a phenomenology process which changes the concept about nature and laws of formation of personality. The specific feature of anthropooriented motivation-semantic attitudes of person is in natural generation of such derivatives personal qualities of teacher, as empathy, tolerance, authenticity, self-reflection, and the functions, connected with ensuring the emotional well-being of students' personally and meaning generating interactions as bases of the productive development of personalities.

Our research defined the nature of the influence of teacher' motivation-semantic attitudes on emotional well-being of student and their psychological health as a whole. This information allows revealing the reasons, holding up process of the personal development of subjects in educational space. At most render concrete marking the conditions for emotional well-being of students does the preventive maintenance of professional deformation of teachers.

Firstly, we studied the attitudes of teachers in the acquisition of new educational valuables: revealing the priority orientation of individual, or subject-knowledge orientation. Practically these orientations can correlate with attitude of any individual to acceptance of others or estranging from them.

Our research of the emotional well-being of Russian and Chinese schoolchildren (Harbin) allowed defining the leading motivation-semantic attitudes of their teacher.

The analysis of the results of the testing Russian teachers allowed dividing all respondents into 3 groups:

1) with dominance of motivation-semantic attitudes of anthropo-oriented type (19.1% of teachers from sample)

2) with dominance of motivation-semantic attitudes of imperative-scientific type (58,3 % from the sample);

3) the group of teachers without dominance attitude of any type (22,6 %) There are reasons to suggest that they were in process of value personal-professional self-determination.

Russian teachers showed absolute of dominance of the imperative-scientific motivation-semantic attitudes in contrast to anthropo – oriented (58,3 % and 19,1 % respectively).

We consider this as one of important reasons of the broad circle of problems in education as the imperative-scientific attitudes in their real manifestation depersonalize individuals and impede their self development.

86.2 % of Russian students taught by the teachers of the first group showed emotional well-being. This indicate different level of emotional well-being of students in process of interaction with there teachers.

Proceeding with the study of the semantic attitudes of Chinese teachers, we suggested that alternative motivation-semantic attitudes would be revealed, many of them would be oriented on the ideas the Eastern philosophy. However, our students did not confirm this suggestions. We found no one with expressed anthropo-oriented motivation-semantic attitudes among Chinese teachers. Only 9,7 % of teachers from the sample showed no dominance of specific attitude, but 90,3 % showed absolute of dominance of imperative-scientific motivation-semantic attitudes. Imperative-scientific attitudes of Chinese teachers showed the idea of totality as inherent state Chinese schools (where the research was conducted). The system «Teacher-student» showed the absolutism of status interaction in the educational process.

Chinese teachers are distinguished by a very-high level value-orientation unity- 89%. In Russian school the maximum level was only 64 %.

In connection with the dominance of imperative-scientific attitude of Chinese teachers in would be possible to suggest a low-level emotional well-being of Chinese students. However, research of Chinese students proved thus suggestion wrong. The Chinese students showed no asthenic emotion.

These results allow make a conclusion about rather high level of the emotional well-being of Chinese students, despite absolute dominance of imperative-scientific motivation-semantic attitudes of Chinese teachers.

Our observations during visiting lesson in Chinese schools discovered a limited range of the ways of interaction between teachers and students, with rigid imperative attitude. But they are positively by students, an natural ways of the interaction system «Adult-child», identical to their

mentality. This helps teachers to control the classes of up to 60 student. An ideal discipline is maintained.

We found our essential difference in basic motivation-semantic attitudes of Russian and Chinese teaches. Chinese teaches have no antipodean motivation-semantic attitudes which determines a high level of value-orientation unity in their pedagogical groups. We did not reveal any interconnections between emotional well-being of Chinese students and imperative-scientistic attitudes of their teaches.

The Russian teachers, oriented to on person, as our observations show, do not hide behind the screen of their professional status. They are capable to feeling a varied palette of emotions: from creative inspiration to sadness and remorse, they show willingness to deal with problems and relations with students. Students, as a rule, can expect serious attitude, respect and support from such teachers.

The task of teacher is help children overcome stresses, find confidence in themselves, encourage, good qualities and actions of children. Our research has show that emotional stability of students' life in educational institution is the strongest factor, which stimulates the process of development of students' personalities. If children know that their teachers wait for them, unconditionally accept them, treat them in proper way, their expect the good, and this makes them stronger and calm. The «keys» from their emotional well-being are in hands of their teachers.

The emotional well-being of Chinese students is not connected with motivation-semantic attitudes of their teachers. In connected with their other factors beyond the educational activities, and is possibly determined by national mentality and the culture of China.

The results obtained are explained by high prestige of Teacher in China, respectful children's attitude to adults, rooted in the centuries – old traditions of Asian culture. Unconditional acceptance of positions and actions of adult in normal for a suppressing majority of students. They are not afraid to go school, do not experience negative emotions from imperative way of the interaction between teachers and students. As those are usual ways of contacts in the system «Human-Human» with senior generation as a whole. We shall add the higher prestige of education in modern China and understanding that the education can change the life quality.

There is critical difference in behavior of people from different countries. Culture consists of beliefs, attitude, and customs which separate people. Contempt for someone else's culture restricts our capability of understanding of behavior of people.

Unlike Western cultures, where personality is defined as something from others, possessing certain qualities, in Chinese culture the personality is considered in social and family context. A human is defined through his relationships with other people.

This theory has confirmed by research of I-concept of Markus and Kitayama, about the people, living in individuals' society, independent I is characteristic. Such an I, which characterizes the person as an «independent, self-sufficient autonomous human unit». On the country, people living in group cultures (for instance, in China), have interdependent I. They

define themselves through their own relations with their environment and membership in different group.



The Relationship between Parenting Style and Self-Regulated Learning among Taiwanese Junior High School Students

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Abstract

Recent studies on students' learning environment affected the development and use of self-regulated learning strategies, but, relatively little attention has been paid to the role of the family context in fostering or impeding the development of these skills. This study examined the differences of Taiwanese junior high school students' parenting styles and self-regulated learning on the basis of gender, grade and family's socioeconomic status. Besides, this study also examined the prediction of parenting styles to self-regulated learning. Participants were 1140 students from junior high schools in northern Taiwan. The instruments included Parental Authority Questionnaire and Motivated Strategies for Learning Questionnaire. Parenting styles and Self-regulated learning were significantly different in terms of junior high school students' gender, grades and their families' socioeconomic status. Parenting styles predicted self-regulated learning of Taiwanese junior high students, and played important roles.

Keywords: Parenting Style, Self-Regulated Learning

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1. Introduction:

The relationship between parenting styles and developmental outcomes in children and adolescents has long been the topic of interest to researchers. A number of parenting characteristics have been found related to developmental outcomes in

children (Baumrind, 1971; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Parenting is a complex activity that includes many specific behaviors that work individually as well as together to influence child outcomes. The construct “parenting style” is used to capture normal variations in parents’ attempts to control and socialize their children (Baumrind, 1991). Researchers suggested that categorizing parents according to whether they are high or low on parental demandingness and responsiveness creates a typology of four parenting styles: Authoritarian, Authoritative, Indulgent, and Uninvolved (Baumrind, 1971, 1989, 1991; Maccoby & Martin, 1983).

Parental responsiveness which can also be referred to as parental warmth and supportiveness is defined by Baumrind (1991) as the “extent to which parents intentionally foster individuality, self-regulation and self-assertion by being attuned, supportive and acquiescent to children’s special needs and demands”(p.62). Parental demandingness refers to supervision, disciplinary efforts and willingness to confront the child who disobeys as well as expectations and claims that force the children to become integrated into the family whole (Baumrind, 1991).

Authoritarian parents are highly demanding and directing, but not responsive. They expect their orders to be obeyed without explanation. These parents provide well-ordered and structured environments with clearly stated rules. Authoritative parents are both demanding and responsive. They have clear standards for their children’s conduct. Their disciplinary methods are supportive. That is to say, authoritarian parents attempt to shape, control, and evaluate the behavior and attitudes of their children in accordance with an absolute set of strict standards, using punitive measures for control. Authoritative parents tend to use strict sanctions only when necessary, encourage autonomy and independence, and are consistently responsive and warm. (Grolnick & Ryan, 1989). Indulgent parents (also referred to as "permissive" or "nondirective") are more responsive than they are demanding. They are untraditional and mild, do not demand mature behavior, do allow considerable self-regulation and avoid confrontation. Uninvolved parents are low in both responsiveness and demandingness, tend to show little warmth or attention to their children, while providing them with little and/or poor guidance (Baumrind, 1991).

Work on gender differences suggests that girls tend to be generally more susceptible to socialization practices than boys, whereas parental control tends to be more critical for boys' well-being than for girls' (Pomerantz et al., 2005; Weiss & Schwartz, 1996). Research on age-related differences suggests that as children get older, outward displays of warmth and affection and direct disciplinary encounters by parents lessen, as verbal communication and discussion increase. Parents also tend to provide greater opportunities for autonomy and self-regulation as children enter

adolescence and early adulthood (Maccoby, 2007). However, some evidence indicates that parenting in working class and low socioeconomic status families tends to be more authoritarian (Fisher & Lerner, 2005). This study examined the differences of Taiwanese junior high school students' parenting styles and self-regulated learning on the basis of gender, grade and family's socioeconomic status. As students were unlikely to know their parents' income, socioeconomic status was based on the student's self-report of parents' occupations and educational status. Socioeconomic status was then allocated to "high income", "middle income", or "low income".

Rohrkemper (1989) referred that self-regulated learning as a process of adaptation; self-regulated learner is one who is in charge of his/her own behaviors and emotions to control learning processes (Byrnes, Miller, & Reynolds, 1999; Rohrkemper, 1989). The self-regulated learner is also an individual who understands the motives and strategies that are necessary for learning to occur (Boekaerts, 1996; Pintrich & De Groot, 1990; Schunk & Zimmerman, 1994; Wolters, 1998). Self-regulated learning involves the process by which learners personally activate cognitions, affects and behaviors that are systematically oriented towards learning goals (Schunk & Zimmerman, 2008).

Social cognitive theory views self-regulated learners as thoroughly integrated within their learning environment. Bandura (1986) postulates that the person, the behavior, and the environment are inseparably entwined to create learning in an individual. As learners understand why it is important to learn something and believe that they can accomplish the learning, they will self-regulate their learning.

The self-regulated learner purposefully uses metacognitive strategies that incorporate self-monitoring and evaluative components that allow for self-observation, self-judgment, and self-reaction (Zimmerman, 1989). The self-regulated learner is one who is intrinsically motivated and feels able to succeed (Schunk & Zimmerman, 1994).

One of the basic components of self-regulated learning is self-regulated learning strategies. Self-regulated learning strategies include cognitive learning strategies and meta-cognitive learning strategies to control cognition (Pintrich, 1999). Cognitive strategies are used to refer to cognitive processes and behaviors that students use during actual learning experiences to complete an assignment or to accomplish a goal implied by the academic task (Boekaerts, 1996). Rehearsal, elaboration and organizational strategies have been identified as important cognitive strategies related to academic performance in the classroom (Pintrich, 1999; Pintrich & De Groot, 1990). Meta-cognition refers to the awareness, knowledge and control of cognition. There are three general processes that make up meta-cognitive self-regulatory activities: planning, monitoring, and regulating (Pintrich, Smith, Garcia & McKeachie, 1991).

Another component of self-regulated learning are motivational beliefs.

Knowledge of cognitive and metacognitive strategies alone is not enough to promote student achievement; the student also must be motivated to use these strategies (Pintrich & De Groot, 1990). Pintrich (1999) has concentrated on four general types of motivational belief in his empirical work, namely self-efficacy beliefs, task value beliefs, goal orientation and test anxiety. Self-efficacy belief is defined as peoples' beliefs about their capabilities of producing designated levels of performance that exercise influence over events that affect their lives.

Moreover, some studies found that self-regulated learning and academic achievement can be predicted by parenting styles. The relationship between parenting styles and developmental outcomes in children has long been the subject of interest to researchers. A number of parenting characteristics have been found to be related to developmental outcomes in children (Rashmi, Elizabeth, Diana & Carol, 2005). In these aforementioned pieces of research parenting style appears to be a key resource for childrens' self-regulation.

According to Martinez-Pons (1996) parental self-regulatory modeling, applying goal setting, motivation and strategy usage, is observed by elementary students who, in turn, reflect this in their own self-regulation. Purdie, Carrol and Roche (2004) explored the relationship between parenting behavior and adolescents' self-regulation processes. They found a notable correlation between self-regulation and parental efficacy which influences school related behavior. In addition to the importance of parenting styles for self-regulated learning, research on parenting styles has also demonstrated the importance of parenting style to academic learning and achievement (Cheung, Chang & Catherine, 2008; Lola & Shrinidhi, 2008; Marc, Erin & Aisha, 2007). In this study, we investigated parenting styles and their relationships with self-regulated learning in Taiwanese context.

2.Methodology:

2.1 Participants

Participants were 1140 students from junior high schools in northern Taiwan. The response rate was 94%. The sample included 592 girls (51.9%) and 548 boys (48.1%), 388 first graders (34%) , 382 second graders (33.5) and 370 third graders (32.5%). Their age ranged from 14 to 16 years old. Of the sample, 16.7 percent were from high income families, 29.7 percent from middle income families, 53.6 percent from low income families.

2.2 Instrumentation

* $p < .05$ *** $p < .001$

The second research question concerned the differences of Taiwanese junior high school students' self-regulated learning on the basis of gender, grade and family's socioeconomic status.

Data in Table 2 indicate that significant differences on the strategies of cognition and meta-cognition were found among the gender groups. Furthermore, girls have better cognition and meta-cognition strategies than boys.

Table 3 reveals that significant differences on the strategies of Cognition and active of plan were found among the grade groups. Moreover, the third grade students have better cognition strategy than second grade students; and the first grade students have better active of plan strategies than second grade students.

Table 4 shows that significant differences on all of strategies were found among the gender groups. Also, high and middle SES's students have better self-regulated learning strategy than low SES's.

Table 2. One-Way ANOVA showing influence of self-regulated learning on the basis of gender.

	Source	SS	df	MS	F	Post Hoc
Extrinsic motivation	Between Groups	2.21	1	2.21	2.14	
	Within Groups	1173.21	1138	1.03		
	Total	1175.91	1139			
Cognition	Between Groups	19.91	1	19.91	24.80**	$A_2 > A_1$
	Within Groups	913.37	1138	0.80	*	
	Total	933.28	1139			
Meta-cognition	Between Groups	8.75	1	8.75	10.63**	$A_2 > A_1$
	Within Groups	937.11	1138	0.82		
	Total	945.87	1139			
Active of plan	Between	1.48	1	1.48	1.89	

Groups			
Within	891.93	1138	0.78
Groups			
Total	893.41	1139	

** $p < .01$ *** $p < .001$ ※A₁:boy A₂:girl

Table 3. One-Way ANOVA showing influence of self-regulated learning on the basis of grade.

	Source	SS	df	MS	F	Post Hoc
Extrinsic motivation	Between	5.11	2	2.56	2.48	
	Groups					
	Within	1170.80	1137	1.03		
	Groups					
	Total	1175.91	1139			
Cognition	Between	7.00	2	3.50	4.30*	B ₃ > B ₂
	Groups					
	Within	926.28	1137	0.82		
	Groups					
	Total	933.28	1139			
Meta-cognition	Between	4.91	2	2.45	2.96	
	Groups					
	Within	940.96	1137	0.83		
	Groups					
	Total	945.87	1139			
Active of plan	Between	5.54	2	2.77	3.55*	B ₁ > B ₂
	Groups					
	Within	887.87	1137	0.78		
	Groups					
	Total	893.41	1139			

* $p < .05$ ※B₁:first grade B₂:second grade B₃:third grade

Table 4. One-Way ANOVA showing influence of self-regulated learning on the basis of family's socioeconomic status.

	Source	SS	df	MS	F	Post Hoc
Extrinsic motivation	Between	18.38	2	9.19	9.03***	C ₂ > C ₁
	Groups					C ₃ > C ₁
	Within	1157.53	1137	1.2		
	Groups					
	Total	1175.91	1139			
Cognition	Between	28.04	2	14.02	17.61**	C ₂ > C ₁
	Groups				*	C ₃ > C ₁
	Within	905.24	1137	0.80		
	Groups					

	Total	933.28	1139			
Meta-cognition	Between Groups	56.38	2	28.19	36.04**	C ₂ > C ₁
	Within Groups	889.48	1137	0.78	*	C ₃ > C ₁
	Total	945.87	1139			
Active of plan	Between Groups	29.58	2	14.79	19.47**	C ₂ > C ₁
	Within Groups	863.83	1137	0.76	*	C ₃ > C ₁
	Total	893.41	1139			

*** $p < .001$ ✕ C₁: low SES C₂: middle SES C₃: high SES

Table 5 shows that, the final research question concerned predictors explained students' self-regulated learning. According to the R² change in Table 5, the relative importance of each variable in predicting students' self-regulated learning was as follows in sequence: (a) authoritative, (b) authoritarian, (c) indulgent, and (d) uninvolved. All variables were significant predictors, explaining as much as 58% of the variance in reporting student's self-regulated learning. Meanwhile, the output of multiple regression showed that the value of VIF for each variable was small (<10). No serious collinearity problem detected.

Table 5. Results of multiple regression analysis for variables predicting students' self-regulated learning

Variables	R	adjusted R ²	F Change	β	VIF
authoritative	.70	.47	350.77***	0.53	2.151
authoritarian	.75	.56	226.49***	0.25	1.633
indulgent	.76	.57	156.72***	0.14	1.280
uninvolved	.76	.58	119.76***	0.08	1.198

*** $p < .001$

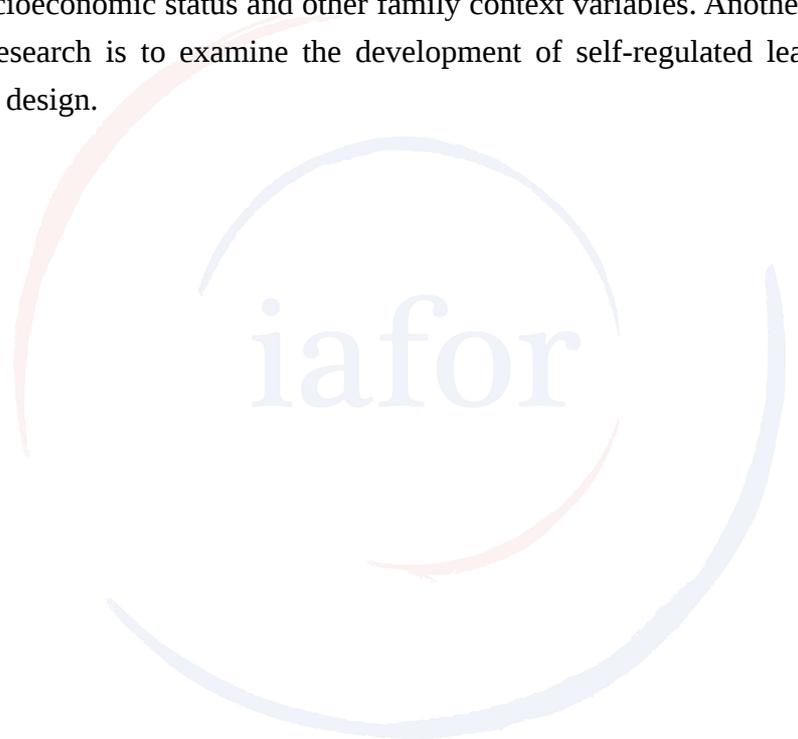
5. Conclusions:

The present study indicates that parenting style does not significantly influence the performance of students based on gender. This is consistent with researches by Yusuf, Agbonna and Yusuf (2009). The study is also in line with that of Fisher and Lerner (2005) and Maccoby (2007) which concluded that parenting styles were significantly different in terms of junior high school students' grades and their families' socioeconomic status. And self-regulated learning were significantly different owing to junior high school students' gender, grades and their families' socioeconomic status.

This study also revealed that self-regulated learning (extrinsic motivation,

cognition, meta-cognition and active of plan) were influenced by parenting styles. The present study indicates that self-regulated learning of those students with authoritative parents is higher than that of the students with authoritarian, indulgent and uninvolved parents. If the parents give their child enough opportunities to be autonomous and involve their child's needs enough, they can provide suitable conditions for the child to be self-regulated. This way, the children's autonomous feelings are fostered and they become more competent at determining their own learning objectives, start to believe in their own skills and abilities more.

In addition, we have suggestions for further research are proposed: A direction for future research suggested by the present study is to study self-regulated learning within the framework of a model that includes aspects of culture, parenting styles, families' socioeconomic status and other family context variables. Another suggestion for future research is to examine the development of self-regulated learning using longitudinal design.

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**The Stockholm Syndrome:
A Human Dilemma Between Domestic Violence and Fear of Freedom.
Retaining Insecurity rather than Finding Opportunities in Uncertainty.**

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Abstract

Public has realized on the stockholm syndrome as a form of dependency of a person who surrenders the self to others in exchange for security at the cost of insecurity. Stockholm syndrome became recognized by public after the robbery incident in a bank of Stockholm, when the two hostages finally married the two bank-robbers after defending them in court. The syndrome has been extensively studied across cultures primarily on wives who claimed as being victimized by their husbands and feel helpless in their marital relationships, yet unwilling to free themselves for various reasons associated with social perception and family responsibility including child development. Fromm has explained that one of the greatest human dilemmas relates to fear of freedom, because when a person releases the self from one condition he or she will be entangled with another condition which contains with uncertainties. This paper discusses a number of case studies on domestic violence including physical, sexual, verbal abuses and emotional negligence, and how the clients responded to the situation to remain in a dilemmatic situation. Three wives associated their choice to remain in domestic violent life with financial security and child education. One husband associated his choice to remain in an emotional negligence with religious dogma. People have choice to live, but many choose to retain in insecurity rather than finding opportunities in uncertainty.

Keywords: Stockholm syndrome, Fear of freedom, Human dilemma, Erich Fromm

The Stockholm syndrome

Stockholm syndrome is a condition in which captives tend identify with and sometimes feel extremely warm feelings for their captors (Pope & Garcia-Peltoniemi, 1001). The label Stockholm comes from the city of Stockholm, Sweden, where the incidence took place. The Stockholm Bank robbery incident on August 23, 1973 brought this term into condition where captives remain dependent to captors, and so it is applied to conditions where abuse victims remain dependent to the abuser included in the case of domestic violence.

In marital cases, clients may not disclose marital violence as a result of fear of their partner, fear of marital dissolution, or fear of intervention by law enforcers (Satiadarma, 2004). Cultural aspects also play a significant role in abuse cases in Indonesia, particularly in domestic violence (Satiadarma, 2004). In almost all reports of wife abuse cases in Indonesia (Kartika, 2002; Santi, 2002) mentioned about the influence of cultural aspects toward the incidence to happen. For example, an abused wife may not easily free herself from marital

relations associated with abuse because filing a report may not immediately obtain protection thus the reporter will be even more vulnerable to receive further abuse from the spouse. The society also does not pay enough attention on such cases and this may be a form of social negligence. On the other hand, not being reported tends to put the victims also in a threatening condition. For example a case in south Jakarta in early 2011 resulting wife murder by a husband who experienced enduring stress yet not being reported although he frequently had conducted abusive behavior on his wife.

In the context of human interpersonal relations, Fromm (1941) mentioned that people tend to live in a dilematic condition since they want to release themselves from bondage, yet at the same time once they free themselves from one bondage they will be in another new bondage. Ehrensaft and Vivian (1996) reported that victims of domestic violence often did not report the aggression since they considered it as (a) being caused by external circumstances or other marital problems, (b) being caused by their partner's behavior in nature, (c) their partner did not really mean to inflict any harm, (d) an unstable event that would not recur, thus as an incident that may only be occasionally exist and will not last continuously, and (e) being followed by contrition from the partner. A few spouses also indicated that they wished to protect the perpetrator (Satiadarma, 2004) and they are not aware of their vulnerability to remain in such condition.

These case studies are aimed at finding reasons of abuse victims for remaining dependent in their marital relations although they have repetitiously experienced being abused by their partners including in forms of physical abuse (hitting, kicking, slapping), verbal abuse or being emotionally neglected.

Escape from freedom

Fromm (1941) explained that human tended to feel lonely and isolated from nature and from other people. This feeling of isolation is specific to human nature, not found in any other species since other species never isolate themselves but tended to always live in nature. Such isolation is distinctive to human nature. When life progresses and a child must live separately from the parents. The child may find freedom and become independent, but he or she will feel helpless and isolated. The child then adrift in an alien world, which is not his or her nature, but the child must then relate and perhaps serve the alien world. Freedom thus gradually becomes negative condition for a person. At one point a person will find freedom from any attachment, but at the same time he or she will feel helpless and isolation. Meanwhile, isolation creates unpleasant feelings, and in order to escape from isolation, one needs to get attached to others. This become dilematic to an individual.

In order to deal with such dilematic condition, one may need to unite the self with others, and share the life with others, or one needs to escape from freedom by authoritarianism, destruction, or automaton conformity. Escaping from freedom by authoritarianism means conducting act of submissiveness to an authority, thus becoming masochistic, or becoming the power authority thus conducting sadism way of behavior. Using destruction is a form of escaping powerlessness by destroying the social agents that deliver the sense of isolation.

Whereas using automaton conformity means adopting the pseudo self to take a role act as the expectation of others. All of these way of escaping is actually acquiring a new bondage.

In his subsequent writings, Fromm (1955) for example explained that animals in general are all equiped by nature to meet various life conditions whereas human with the power of imagination and reasoning has lost the interdependence with nature. Human may try to to rise above the nature and thus use the act of authoritarianism to master nature. As a result, they destroy nature, yet they basically are longing to nature by their rootedness to nature. Thus this remain as dilematic. They want to be integral part of nature, yet they destroy nature.

Simlilarly in many human relationships, people want to be an integral part of a social agent (such as in marital relationship), yet they want to take the authority, or take the role of submissiveness, being destructive to their partners, or accept the pseudoself by taking the role as the society expect although they have to deny their own self.

The Subjects

The Story of Mrs O (65)

Previously Mr O (75) came for counseling regarding his complaints of Mrs O attitude which recently (for almost 2 years) tended to avoid Mr O request for having sexual relationships. Mr O was a diabetic patient and having erectile dysfunction and expected Mrs O being supportive while having sexual relationships with him. He tried to use medications, food supplements, and alternative medicine as well with no avail. He stated as becoming more depressed due to his wife avoidance behavior, thus he seeked sexual pleasures with other women.

In order to cross-checked Mr O story, the therapist asked Mrs O to come, and she presented a contradictive story which was supported by her daughter (40). Mrs O had known and tolerated Mr O extra marital affairs for years, but recently she could not tolerate anymore since Mr O had relationships with their servant at home. Mrs O felt helpless for eventhough she might fire the servant and replace with a new one, Mr O might repeat his action to the new servant as well.

Previously Mr O had relationships with an office girl, and Mrs O fired her. However, since these couple developed multi industrial business, when Mr O opened a new office, the office girl was recruited again. The girl was previously assisting the office for various administrative job, but finally turned to be Mr O mistress, which gradually was no secret to many employees. According to Mrs O such condition influence the employees respect to them, but Mr O's reaction was harsh, as he had been acting such way to Mrs O ever since they got married.

They started their business almost 40 years ago, they were considerably poor and had a very limited financial support. They lived in small cheap apartment at the very beginning, but their struggle was padi off as they succesfully developed their business enterprises. Their car industry related business branched out into various kinds of business service. Mr O harsh

attitude to Mrs O had been going since they got together, and Mrs O expected that such tendency would gradually disappear when a person grew older. Mrs O expectation was on the contrary with the reality. Their recent financial condition supports Mr O to conduct his various plans.

According to their daughter, all the business progress was mainly based on Mrs O ability in promoting and expanding the business. Mrs O agreed that she was mainly being used by her husband as business instrument as well as sexual instrument. Sometimes she was feeling enslaved, but on the other hand she felt that she had been doing what a wife suppose to do for her husband. She stated however: “ I do not mind he eats noodle outside the house, but do not bring the dirty bowl inside the house”. She experiences painful feelings as her husband told her clearly that he had relationships with others since she was unable to help him to release his desire. He also gave rough and abusive comments about her, bullied her for being less supportive than what he expected.

She realized that they were old, and expected him to change his attitude and became more mature as getting older. She did not want to file any report of being abused, rather asking on how to change Mr. O’s attitude. She would keep the marital relationships and felt useless to improve her husband attitude.

The Story of Mrs. L (Lady)

Mrs.L (40) came for a counseling session with complaints of being emotionally, verbally abused and neglected. She married a business man for more than 20 years and has 3 children of 18 (male), 16 (female), and 14 (male). They were from an upper-class social family and the family was selected as one of “The Families of The Year” in a luxury national magazine. Her husband was considered as a successful businessman, and she actively was involved in social activity and recognized as one of the Women of The Year. They contributed a large sum of money to a few numbers of institutions.

She appeared in a rather classy dress and worn large rectangular sunglasses which protected her swollen eyes, due to crying, from being seen by others. She almost entirely cried during the first session, and stated of having pain almost all the time since her husband was mean to her emotionally. She showed pictures of hers from he young adolescent years and explained that she had been abused physically by he husband previously, including being kicked on her stomach. During the last one and half years, since they returned from a pilgrimage, her husband stopped the physical abuse, but he often bullied her in front of other people. When she was asked about reporting the incident to a lawyer, she did not want to do so since that might give a negative image to the family. When her husband was also asked to join the session, he stated that he regret his acts, he did not want to do it again. When a family session was conducted the three children, primarily the girl spoke harshly to the father. The father remain in control, acted cool, and the children blamed the father of being superficial. The children witnessed how their father abused their mother, they witnessed how their father used to slap and kick their mother. They agreed that such incident did not happen anymore

recently, but mentioned that their father often blamed sometimes even yell at their mother in front of public. He showed his authority upon her.

She explained that she was raised in a democratic and loving family, her mother loved and cared for her, and she turned to be a very good student with high achievement at school. However, she considered she was unprepared for social life interaction, and her family was shocked when they found that she was pregnant. She felt guilty because of such incident which influenced the social perception on her family. The family set up an immediate wedding ceremony and she got married with the man who turned out to be an abusive husband.

She had been abused since they got married, and she had been feeling helpless. She wanted to terminate the relationships, but was afraid that would even ruin her family image. She felt she was the cause of all negative image about her family, and she should not make the condition even worse. She admitted that her husband was good as the family backbone of the family financial resources, he had been a successful businessman. He was extremely dominant but also had financial strength. Recently he had been having conflicts with the children and disagreed that their daughter was planning to study in medical department. He finally allowed their daughter to study medical.

She complained that she was tired of being abused verbally and emotionally, but feel helpless to confront her husband. She wanted to retain the marital relationship and asked for more strength in dealing with her abusive husband.

The Story of Mrs. N (65)

Mrs N came for a counseling and complained about her unhappy marital relationship for over 40 years. Her husband, who works as the head and trainer of the engineering department of an international company never took her traveling although they live handsomely on financial bases, and their children now study and live in Australia. They have been married for 40 years, and her husband often travel abroad for business reasons as a part of his job and responsibility of the department head.

She admitted that she never realized about this until recently she sent her third child to Australia to study and stayed with her other children who have graduated and live in Australia. She admitted that over the years she might have been busy taking care of her children, she took care her children well, drove the children to school, to extracurricular activities, cook for her children (for husband as well). During her leisure she reads book at home, sometimes she joins the trip with groups in the parishioners which seemingly fulfill her leisure all these years.

Recollecting memories from the past she just realized that she has never had any experience to travel together with her husband. Each time they went to Australia to visit her children, they did it separately. Reexperiencing her past she remembered that they started to live in a limited financial support as students, her rented room was small, and her fiancée (now

husband) came regularly with lots of emotional support until they got married. Soon they got married, they moved to rent a small house and the husband started to look for a job. They started to get busy with personal careers, her husband became a technician, and she took the role of wife, and then as a mother. She believed that she had to take good role of a wife and a mother, thus taking care of the household and raising up children.

She sometimes felt lonely at home, rarely join any social activity rather than just get together in church for one or two hours in a week. She expected her husband to take her somewhere together, but he never did that since he had no time to do so associated with his job. They did sometimes go out for dinner with the children, but never go for only the two of them. She did not pay much attention on this, until the youngest child left home for Australia, and then she started to realize that all these years she had no emotional support from her husband.

When they both came for counseling, her husband agreed he had not time for spending leisure with her and considered that now she had been too demanding because feeling of taking care no one else. In the recent two years she had been upset and feel being neglected but unable to do anything. She could join ladies activities in church but that did not satisfy her at all. They both did not think to live separately for their religion does not agree with that, but she remain to feel suffering without knowing what to do.

The Story of M (Man) and W (Wife)

M (35) came for a counseling session with complaints of having marital problems which had lasted for two years. He previously had had counseling sessions with a senior psychologits for a few times but had no progress.

M married W (33) about 6 years ago and they now have a 5 year old boy. They previously lived in a small rented house and M started a printing business, whereas W was still an active national athlete. A year after they got married they have a baby boy, M business was progressing, and they moved to a new house, a larger one, their own house. Life was apparently getting much better. In the meantime, during pregnancy W had a medical checkup and introduced to a medical doctor (D) who conducted business in lab test. In order to improve their family life, since W had also terminated her activity as national athlete, W joined the business with D.

Their family financial condition improved well, M's printing business is getting larger, the lab test business of D was progressing as well, but W relationships with D began to interrupt M and W family life. As the year progresses, W became more distant to M, and when M came for counseling, they had left their sexual interaction for more than two years; moreover, W tended to avoid M's touch. W did not want to even hold hands with M when they walk in a mall. W often had business meeting with D, and M always picked up W after the meeting.

M complained as being confused on what to do. He did not want to get divorced even not wanting to live separately. He mentioned he never had any affairs and always tried to do well in conducting his role as a husband. He believes that separation between couples was against

his religion. W mentioned that she did not love M anymore, but concerned about her child, thus did not want to get divorced. M admitted that in order to release his sexual drives he masturbated. W did not want to know about how M conducted his sexual life but did not want M to have affairs as well. At the same time W did not feel like having sex with M, nor did she feel of having romantic time with M.

M felt being neglected yet retain the marital relationships and remain dilematic in the relationships.

Conclusion & Discussion

It is indeed interesting that in numbers of marital counseling cases the reporting spouses complained about being abused or neglected but they would rather maintaining the marital relationship for the sake of religious beliefs, economic reasons, and social roles. Mrs O keeps complaining in tearful fashion for knowing her husband is having various extramarital affairs, meanwhile she has been managing the family business that gives financial supports including to her husband to remain conducting the affairs in the office or at home. Mrs O considers that she has to keep the role as a wife, as expected by the society.

Mrs L remained dependent to her husband for economic and financial reasons. It is understandable that she was not well trained for being independent, and has been having rather luxury life based on her husband financial support although being abused for years. She keeps coming for counseling in a tearful fashion, and counseling becomes stress management for her. Mrs N choose to remained in the marital relationship despite of having been feeling emotionally neglected; she choose the alternative to join parishioners activities to fulfill her leisure. She periodically comes for a counseling on how to deal with emotional upset for being neglected over the years. She does not want to take any act of separation since her religion does not allow her to do so. Similarly, Mr M does not want to file a divorce because his religion does not agree on such decision although his wife has conducted extramarital affairs with her business partner who is a medical doctor. Mr M remains ambivalent toward the situation, feeling uneasy, occasionally comes for counseling to deal with the same feelings.

These dilematic condition of the abused spouses is associated with fear of freedom because when they choose to separate and being independent they may have to deal with the new bondage of feeling shame for having fail to take the social role, feeling guilty in dealing with their belief system, or feeling even more helpless for no having enough financial support. Meanwhile, they are unable to take the healthy solution as well in life sharing with their partners since their partners are abusive physically, verbally or emotionally. These dilematic condition makes the abused spouses to remained in their situation to take the role of victims of the domestic violence. In the concept of Fromm (1955) such act is a form of accepting the pseudoself, and this pseudoself acceptance is one of the greatest obstacles for number of counselors in helping victims of abuse to free them selves from suffering. Perhaps, numbers

of people deliberately choose to suffer to look good in the society and expecting that their self sacrifice may become meaningful in the future.

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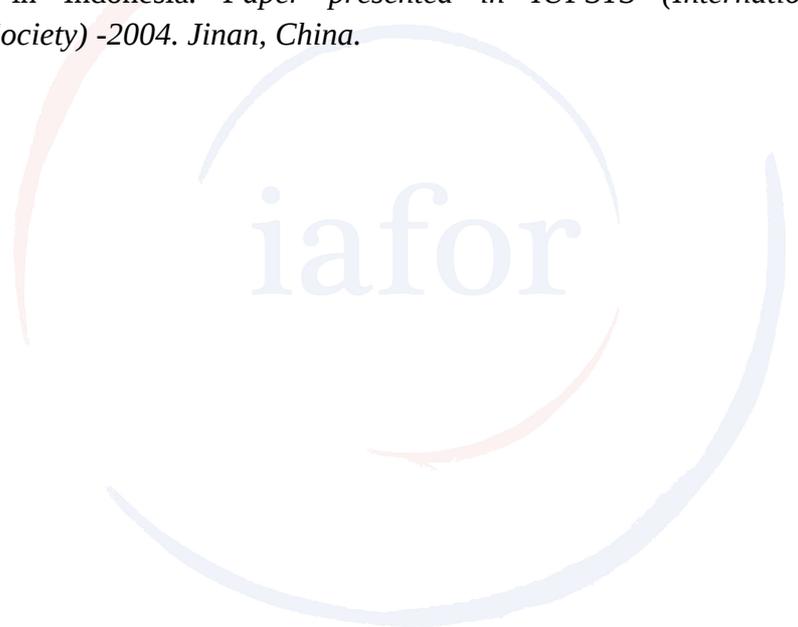
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WHAT FACEBOOK IS FOR
The Use of Facebook Among Undergraduate Samples

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Presentation Paper
The Asian Conference on Psychology and Behavioral Sciences



WHAT FACEBOOK IS FOR
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Facebook is a popular social networking site in Indonesia. Most facebook users are raging from 18-24 years age of group (41.6%). This study was aimed to explore the use of facebook among undergraduate students. Sampless used in this study were 302 undergraduate students with age ranging from 17-23 years old (mean=19,44 std=1,306), consisting of 42 males and 260 females who come from various ethnic group and religions in Indonesia. Using survey technique, they were asked to answer open questions. The data obtained were tabulated and classified. The result showed that most of the Subject use facebook to reconnecting with people they've lost contact with or away from home, and to connect with friends or relatives. On the other hand, their activities and content of status on facebook showed that facebook is also used as a self-expression tool. And they didn't like to interact with the people/activities that unrelated to their business on facebook. This initial funding can be explored to the deeper study.

Keywords: facebook, undergraduate students, survey technique, reconnecting, connecting, self expression.

1. Introduction

One of the developments in the world of internet is the existence of social networks in cyberspace (social network sites.) The forms of social networking in cyberspace, among others are Offline Social connections (friends, clubs, groups, associations), Online social connections (Facebook, MySpace, Live Journal, Orkut, LinkedIn), Messaging (IM, chat, address book), Social book marking (Digg, Delicious), Content sharing (Flickr, YouTube) (Phulari, SS, 2010). Social networking sites allow individuals to present themselves, express their social networks and establish and maintain relationships with others.

Social network sites are defined as:

Web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection and view and traverse their list of connections and those made by others within the system. (boyd and Ellison, 2007 in Papacharissi, 2009).

There are many researches on online social networks, with different perspectives. Some of the research examine the formation and maintenance of online networks that support existing and new social ties (Wasserman and Faust, 1994;Wellman and Berkowitz, 1997). The unit of analysis is the interaction or relation between people, measured in terms of ties held by individuals maintaining a relation, types of exchanges, frequency of contact, strength of ties, intimacy, qualitative elements of relations, size of networks, global or local span of networks and numerous other variables (Haythornthwaite, 2000, 2001, 2002a, 2002b, 2005; Haythornthwaite and Wellman, 1998; Haythornthwaite et al., 1995). Studies focusing on Netville, a wired suburb of Toronto, revealed that online interaction frequently supplemented or served as an alternative to face-to-face interaction in ways that had positive effects on social capital (Hampton, 2002; Hampton and Wellman, 2000, 2001a, 2001b, 2003;Wellman et al., 2001).

As one of popular online social networks, facebook is also an interesting subject to be studied. Researches on facebook among others are: exploration of motives and gratification of facebook users (Joinson, 2008), correlation facebook use with social capital, and comparation online and social network (Subrahmanyam, et all, 2008).

Nowadays, facebook is very popular in Indonesia. Indonesia is the third country after US and UK in number of facebook users. The intensity and frequency of the use of facebook among students were showed by their preference in choosing a mobile phone with facebook features, and accessing facebook in their spare time in campus. Their intensity can also be seen by frequent updating status on their facebook account. In respect to that condition, this research tries to explore the use of facebook among undergraduate students.

2. Method

2.1 Participants

The 302 participants in this study is undergraduate students of Psychology Faculty in Padjadjaran University, Bandung. They are all facebook users. There were 42 males and 260 females, with ages ranging from 17 to 23 years old, and a mean age of 19,47 years (SD= 1.234). They came from various ethnic groups and religions in Indonesia (see table 1 for details):

Table 1

Demographic characteristics of the sample (N = 302)

Sex	Female	: 260 (86,1 %)
	Male	: 42 (13,9 %)
Age	Range	: 17-23 years old
	Mean	: 19,47
	Standard deviation	: 1,234
Ethnic group	Sunda	: 37,4 %
	Jawa	: 29,1 %
	Minang	: 12,6 %
	Batak	: 8,3 %
	Others	: 12,6 %
Religion	Islam	: 86,8 %
	Protestan	: 8,9 %
	Catholic	: 3,3 %
	Hindu	: 1 %

2.2 Materials

The written survey comprised a series of basic demographic questions (e.g. age, gender, ethnic and religion), alongside some measures of use of Facebook (time registered on facebook, other social network sites account beside facebook, media that was used to connect to facebook, places that was used to access facebook, frequency of using facebook, number of friends linked on site and the friends they connect with).

Following this, participants were asked to respond to the following questions using free text entry:

- What activities are most often performed when you using facebook?
- What benefits do you get when using facebook?
- What do you dislike most from the use of facebook?
- What do you usually write in facebook status?

3. Result

3.1 Measure of use of facebook

The result of facebook use in general can be seen on table 2.

Table 2
Measure of Use of Facebook

Time registered on facebook	More than 4 years	: 6,6 %
	3-4 years	: 40,6 %
	2-3 years	: 39,9%
	1-2 years	: 11,9 %
	Less than 1 year	: 1 %
Other social network sites account beside facebook	Twitter	: 77,8 %
	Friendster	: 64,9 %
	Myspace	: 11,3 %
	Lainnya	: 7,9 %
Media that was used to use facebook	Notebook	: 87,7 %
	Handphone	: 84,8 %
	Personal Computer	: 52 %
Places that was used to access facebook	Home	: 84,4 %
	Campus	: 75,8 %
	Public Places	: 55,3 %
	Public internet services	: 43 %
	Others	: 9,6 %
Frequency of using facebook	Everyday	: 53,8 %
	2-3 times a week	: 7,3 %
	Once in a week	: 3 %
	Once in a month	: 0,3 %
	Occasionally	: 34,7 %
Number of friends in facebook	Full	: 1,6 %
	1500-2000	: 8,2 %
	1000-1500	: 20,4 %
	500-1000	: 52,6 %
	Less than 500	: 13,5 %

	Don't know	: 4,6 %
Friends in facebook	School's past (elementary, junior high school, senior high school)	: 85,4 %
	Friends at the Faculty of Psychology	: 70,2 %
	Relatives	: 50,7 %
	Friend outside of the Faculty of Psychology	: 44,4 %
	Unknown	: 15,6 %

Table 2 showed that most of the subjects already have a facebook account for 2-4 years. Facebook is not the only social network sites they use, most of them also use twitter and friendster. The most media they used to access facebook was notebook and cell phone. Interview with some students informed that they tend to choose handphone with facebook feature. More than 50% subjects use facebook everyday, and most of the subjects access it everywhere where home and campus are the most. Most of the friend in facebook are friends in the past, followed by their friend from the same faculty.

3.2 Activities are most often performed when using facebook

The activities done by the subject when they use facebook is varies as shown in the figure 1:

Figure 1. Activities in using facebook

Those activities are then classified into three categories of contact; active contact with others (intended to interaction with others), passive contact (the activities was intended to observe others); and no contact (just intended to express their selves). The classification can be showed in table 3, table 4 and table 5.

Table 3

Percentage of Active Contact (Classified from Subject's Activities on Facebook)

TYPE OF CONTACT: ACTIVE CONTACT WITH OTHERS	PERCENTAGES
	23.99
Comment on status	7.11
Chatting	5.48
Comments on photo	2.91
Reply the wall	2.74
Reply the comment	2.40
Say "happy birthday"	0.77
Tag photo	0.34
Sending message	0.34
Reply the message	0.34

Add friend	0.34
Comment on notes	0.43
Share assignment	0.17
Give “like” to status	0.17
Sharing ingroup	0.09
Share information	0.09
Publication	0.09
Sending photo	0.09

Table 4

Percentage of Passive Contact Type (Classified from Subject’s Activities on Facebook)

TYPE OF CONTACT : PASSIVE CONTACT WITH OTHERS	PERCENTAGES
	46.36
Checking notification	16.88
Looking at profile of friends, relatives and boyfriends/girlfriends	7.63
Checking inbox	5.57
Read other’s status	5.48
Looking at photos of others	5.31
Checking “home”	1.46
Reading notes	1.03
Accept friend request	0.77
Checking group	0.60
Checking assignment	0.60
Reading comments	0.26
Looking at photo of catalogues	0.26
Reading the assignment	0.26
Checking birthday	0.09
Open the “hot news”	0.09

Table 5

Percentage of No Contact Type (Classified from Subject’s Activities on Facebook)

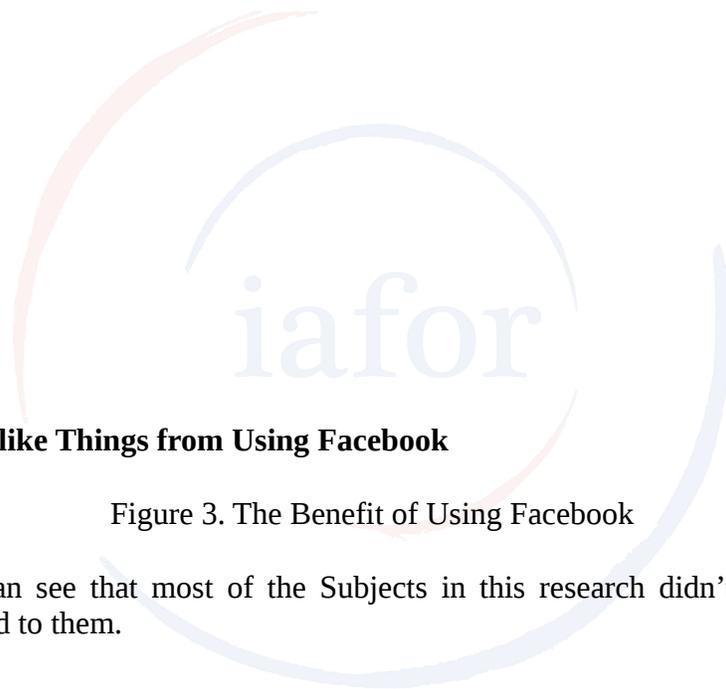
TYPE OF CONTACT :NO CONTACT WITH OTHERS	PERCENTAGES
	29.56
Update status	13.97
Reading own profile	5.48
Playing game	4.20
Upload photo	3.68
Changing profile picture	1.03
Application	0.34
Quizzes	0.34
Checking “online shopping”	0.17
Organizing photo	0.09
Downloading photo	0.09
Video streaming	0.09

From table 3, table 4 and table 5 we can see that most of the activities are not intended to contact with other people.

3.3 Benefits of Using Facebook

The 302 subjects perceive variety benefits of using Facebook. But most of them mention using Facebook as a tool to stay in touch with others who no longer can communicate face to face, to communicate with friends now, and to get updated information, including information about assignment.

Figure 2. The Benefit of Using Facebook



3.4 The most Dislike Things from Using Facebook

Figure 3. The Benefit of Using Facebook

From figure 3 we can see that most of the subjects in this research didn't like things that they perceived as unrelated to them.

3.5 Content of Status

Since status is the most often activities done by the subjects, content of status may also be important to explore. The content of status also varies, but then can be classified into three categories as activities on Facebook. The result is shown on table 6, table 7 and table 8.

Tabel 6

Percentage of Active Contact Type (Classified from Subject's content of status on Facebook)

TYPE OF CONTACT: ACTIVE CONTACT WITH OTHERS	PERCENTAGES
	4.57
Congratulation for special events	1.8
To quip others	0.98
Thank you	0.98
Support	0.33
Persuasion	0.33

Table 7

Percentage of Passive Contact Type (Classified from Subject's content of status on Facebook)

TYPE OF CONTACT : PASSIVE CONTACT WITH OTHERS	PERCENTAGES
	8.01
Give information	5.56
Looking for information about assignment	1.31
Promotion on campus activity	0.49
Comment for situation	0.33
Criticism	0.33

Table 8

Percentage of No Contact Type (Classified from Subject's content of status on Facebook)

TYPE OF CONTACT :NO CONTACT WITH OTHERS	PERCENTAGES
	82.19
Feeling/emotion	22.39
Quotes	13.89
Activity at that time	10.95
Song lyrics	10.95
Condition at that time	8.17
Motivation	3.27
What was thinking	2.29
Complain	2.12
Interesting things	1.31
Opinion	0.65
Hope	1.14
Experience	0.98
Poem	0.98
Place at that time	0.82
"Crazy" things	0.65
Pray	0.65
Film	0.49
Joke	0.49
Others	1.797386

Most of statuses written by subjects are intended to express their feelings. Interview with some students mention that even though the most thing they wrote is about their feeling, they also try to control what they wrote. They also like if there are many friends commented their status.

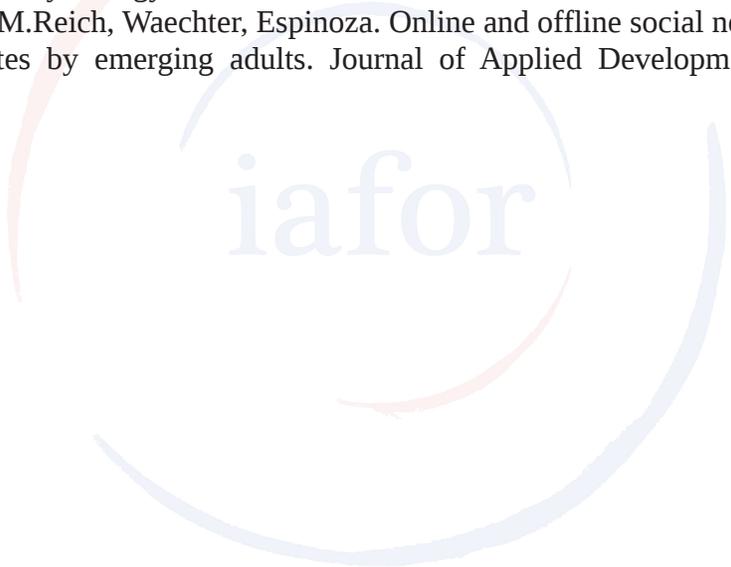
4. Conclusion

This study reveals some basic funding of the use of facebook among undergraduate samples. It can be concluded that undergraduate students use facebook as a tool of communication, especially to their friends in the past and to communicate with the friend in presents, including communicate about activities on their study (share and inform assignment). On the other hand, their activities and

content of status showed that facebook are also used as a tool to express themselves. And they didn't like to interact with the people/activities that unrelated to their business on facebook. Privacy is one of their concerns. This initial funding can be explored to the deeper study.

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Grounded Theory Analysis of "A Beautiful Mind" (Prologue)

Ms. Prakriti Gupta (B.A. Honors Applied Psychology)

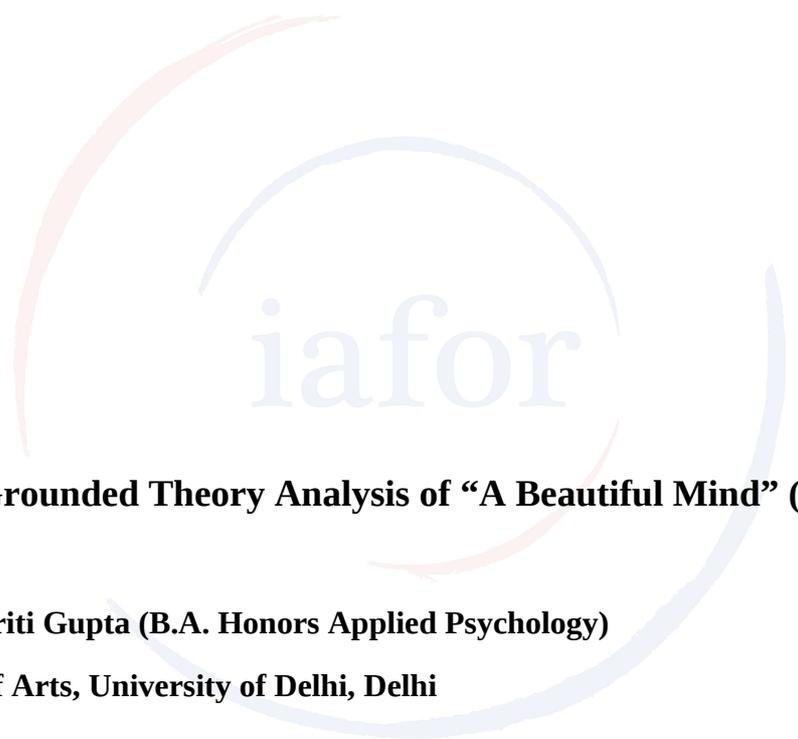
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A Grounded Theory Analysis of “A Beautiful Mind” (Prologue)

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The present paper is the grounded theory analysis of the prologue of the book- "A Beautiful Mind" by Sylvia Nasar. The grounded Theory analysis has been done keeping in mind the whole story and a final selective code in the form of a semi theory has been chosen. The Analysis builds on the sensitivity of the whole issue as well as the beauty of the relationships it encompasses.



Introduction

Giftedness (genius) is a trait where the individual deviates from normality but tends towards being above average and not abnormality per se. In order to be able to understand the relationship between genius and abnormality both of which are deviations from normality; the text that I chose is John Nash's biography by Sylvia Nasar, *A Beautiful Mind*. This book tells the story of John Nash in carefully documented detail, based on hundreds of interviews with friends, family, acquaintances, and colleagues, as well as a study of available documents. In "A Beautiful Mind" Sylvia Nasar the economics correspondent of *The New York Times* tells the story of Nobel Prize winner John Nash who had the same mental illness that affects 1 in 100 people across cultures: schizophrenia. (Jo Kadlecek, 2002) He has experienced many of the same symptoms as others stricken with the disease: delusions, frequent auditory hallucinations, illusions that messages are being sent to him through television or newspapers, a skewed view of reality leading to paranoia. (Jo Kadlecek, 2002) And like many who have struggled to live functional lives with the illness, he has watched his personal relationships dissolve, his career interrupted and his life disintegrate. (Jo Kadlecek, 2002)

Nasar was trained in economics and not in mathematics but still provides a background as well as an extended description for all of Nash's major work. She has gone to great lengths to give vivid descriptions of places as well as people that played a major role in the course of his life. There is however a central dilemma surrounding the book i.e. the fact that it is an unauthorised biography that has been written without the subjects consent or cooperation. Nash's mathematical ability was accompanied by a wild chaotic personal life; this chaos finally welled up, spilled over and led to the dissolution of his carefully constructed life. This book follows the story of this mathematical genius, a story that had never been written; since anyone who knew him did not want to put schizophrenia on record as Nash had already suffered so much. (Jo Kadlecek, 2002)

A Beautiful Mind is a story of a mathematical genius who rose to fame due to his creativity and was finally engulfed by the same and trapped within his own mind. It is the story of his fight to retain his mental capacity and receive recognition from others; finally to have his mental illness go into a mysterious remission and come out a winner.

At this point it is important to understand what schizophrenia as a mental disorder entails. It is one of the most severe mental disorders that affect's approximately 1% of the total population. It is a disorder that affects men one and half times more than women. Being a psychotic mental disorder it is characterised by symptoms of thought, behaviour and social problems. It commonly manifests itself as auditory hallucinations, paranoid or bizarre delusions and disorganised speech or thought; accompanied by significant loss in normal functioning of the individual.

Since the whole biography is based on observations and interviews, my deductions are also based on my on my observations of the text. It is important to keep in mind the fact that I'm a student of psychology and my interpretation and understanding of the text owe their origins to my understanding of psychology. In this research I have only taken the prologue of the book *A Beautiful Mind* my interpretations maybe be guided by the fact that I have read the whole book.

Methodology

In the present research the method of analysis used was grounded theory. Grounded theory refers to the theory that is developed from the corpus of the data that is collected through the research.

The theory that is developed from the data is a representation of all the collected data. It is a qualitative method that takes into account the whole data/case as opposed to a single variable. It is a case oriented perspective that takes into account each variable as a separate case and looks for the complex interactions between them.

The grounded theory approach as given by Strauss consists of steps that lead to the fragmentation of data. Following these carefully constructed steps is said to guarantee the outcome of a good, well deduced theory.

The basic idea of the grounded theory approach is to read and re-read the data in order to discover relationships and inter- relationships. The ability to perceive relationships and variables is known as "theoretical sensitivity". The data however does not need to be only textual it could include observations, interviews etc.

Open Coding

Open coding is the part of the analysis concerned with identifying, naming, categorizing and describing phenomena found in the text. (Borgatti, 2000)Essentially, each line, sentence, paragraph etc. is read in search of the answer to the repeated question "what is this about? What is being referenced here?" (Borgatti, 2000)

Axial Coding

Axial coding is the process of relating codes (categories and properties) to each other, via a combination of inductive and deductive thinking. (Borgatti, 2000)To simplify this process, rather than look for any and all kind of relations, grounded theorists emphasize causal relationships, and fit things into a basic frame of generic relationships. (Borgatti, 2000)

Selective Coding

Selective coding is the process of choosing one category to be the core category, and relating all other categories to that category. (Borgatti, 2000)The essential idea is to develop a single storyline around which all everything else is draped. There is a belief that such a core concept always exists. (Borgatti, 2000) (Nasar, 1998)

Results

A model of the relationship between giftedness and abnormality was then established to understand the complex relationship between the two, as well as factors that affect their co-occurrence.

After finishing with the open coding and going through the open codes the following axial codes seemed to appear.

S No.	Elements/Codes	Description
1.	Onset of Schizophrenia in a genius	It is often difficult to discern the line between creativity and madness. At times we also find ourselves in the uncomfortable position of being unable to discriminate the fine line between truth and fiction, reality and distortion; a dilemma that can be particularly problematic when dealing with highly creative individuals.
2.	Symptoms and	The symptoms of schizophrenia seemed to amplify Nash's

	human nature	pre-existing nature to a large extent. The isolation, solidarity and oddity just seemed to become more peculiar; thus the new him did not seem to be too far away from the old him.
3.	Absorption and Identification	Absorption is an apt metaphor for Nash. The very factors that led him to his creativity were the ones that finally entrapped him in the midst of mental illness. What he lacked was the ability to identify or distinguish between his theoretical assumptions and his delusions.
4.	Narcissism or Introversion	Nash's narcissism or need to create something that could be recognised or spoken about could be one of the major reasons that led him to succumb to his mental illness. Nash's narcissism may be seen as the other side of his extraordinary talents and his intense solidarity. Elements of what Kernberg (1974) has described as a narcissistic personality structure; including intense ambitiousness, grandiose fantasies, feelings of inferiority, and an over-reliance on external acclaim and admiration; in Nash. Nash preferred working alone; he had a solitary and independent air around himself. This was emulated in his theory where he chose to focus on the individual rather than the group.
5.	Defence against Anxiety	Artistic expression and introversion can be described as Nash's defence against anxiety due to the extreme fear of love and hatred. The breakdown of this artistic wall could be the major reason for him to develop schizophrenia.
6.	Need for recognition	There seems to be a difficult balance between Nash's need for accomplishment and his need for recognition. The absence of external recognition creates a dilemma for the artist, whose 'genius' may go unrecognized and be seen as madness. This very need made it difficult for Nash to carry on his work without receding further into fantasy.
7.	Realisation	The realisation of Nash that he with his mental illness was quite different from what he once was seems to be important catalysts in helping Nash enter remission. What had initially begun as a defence that helped him stay within the confines of his head eventually also helped him plant himself into reality both internally and externally. Nash's realisation led him revive his need to be absorbed in activities and work and this seems to be the element that fuelled his final recovery.
8.	Rationality	The realisation of the disparity between himself now and before mental illness also made Nash realise how far he had moved from rationality, a principle that formerly guided

		the dark in order to be able to reach the light guiding him to reality.
9.	Creativity	Nash's creativity and novelty seem to be the factors that led him to discover his brilliant theories and it was this very element of his personality that at first propelled him into the darkness of schizophrenia but then also helped him slither his way out of its grip.
10.	Recovering lucidity	After 30 odd years of suffering Nash mysteriously returned to being his old rational/ logical self. Though for Nash the path of recovery was the most treacherous one as for him recovery did not simply mean a return to reality but also living a life immersed in work.
11.	Recognition	Nash's genius and contributions were finally recognised after the remission of schizophrenia. His need to be recognised was fulfilled after his return to the world of reality and reason.

Discussion

The axial codes (results) were then read and re-read so that the final core category could be chosen. On examining these axial codes the following core category was formed-

Genius and Madness: Abnormality begets Genius but Genius also begets Abnormality.

It is often difficult to discern the line between creativity and madness. One hallmark of creativity is the ability to discern complex patterns, for which Nash seems to have had a truly extraordinary talent. This enabled him to come up with theories and it was this very creativity that entrapped him within his own mind. The schizophrenia itself seemed to amplify the pre-existing nature of Nash. As Storr wrote about Nash "*His remoteness from human contact makes his state of mind less humanly comprehensible, since his feelings are not communicated. If such a person becomes psychotic this lack of connection with people and the external world becomes more obvious: with the result that the sufferer's behaviour and utterances appear inconsequential and unpredictable*" (Nasar, 1998, p.20). Nash's already intense thoughts of grandeur related to his narcissism seemed to be worsened with the onset of schizophrenia- "*For much of the time his grandiose delusions insulated him from the painful reality of all that he had lost*" (Nasar, 1998, p.21).

A predisposition to schizophrenia seemed to be inherent in Nash's genius but the onset of the disease largely hampered his ability to do creative work. His belief in a life guided by rationality and logic became a mere shadow of its former self, turning into an unshakable belief that each and everything in the universe had meaning, meanings that seemed to be accessible only to himself. Nash's personality can be linked to the attributes of the schizoid

personality, characterised by a state of meaninglessness and futility. Creative activity is an apt way to express for an individual with these characteristics as it is a solitary activity and is regarded as possessing value by the society.

Absorption is an apt metaphor for the dilemma in which Nash finds himself; the very elements that lent fire to his creativity were the ones that endanger his very being. This is also a perfect description of Nash's genius which was of the intuitive type. "*Nash saw the vision first, constructing the laborious proofs long afterward. But even after he'd try to explain some astonishing result, the actual route he had taken remained a mystery to others who tried to follow his reasoning*" (Nasar, 1998, p. 12). In order to become the genius that he was he himself needed to believe in his visions and this extreme belief in his visions with a lack of identification between the academic and non academic visions led him right in the grips of schizophrenia. When asked by Harvard Professor George Mackey how a man of science could have believed in such fantasies as extraterrestrial messengers, Nash replied quite simply: "*Because...the ideas I had about supernatural beings came to me the same way that my mathematical ideas did. So I took them seriously*" (Nasar, 1998, p. 11).

From the beginning of the prologue Nash's creative genius had been linked to his narcissism and isolation. Elements of what Kernberg (1974) has described as a narcissistic personality structure; including intense ambitiousness, grandiose fantasies, feelings of inferiority, and an over-reliance on external acclaim and admiration; in Nash. Kernberg also said that feelings of inferiority may also co-exist with grandiose fantasies without actually conflicting with each other. "*As a young man he was surrounded by the high priests of the 20th century science- Albert Einstein, Jon Von Nuemann and Norbert Wiener- but he joined no school, became no-one's disciple, he got along largely without any guides or followers. In almost everything he did- from game theory to geometry- he thumbed his nose at the received wisdom, current fashions and established methods*" (Nasar, 1998, p.12). "*Eager to astound he was always on the lookout for really big problems*" (Nasar, 1998, p.13).

Defence against an inborn anxiety and intense fear of love seemed to be one of the reasons for Nash's as well as other genius's artistic expression. As said by Anthony Storr "*An individual who fears love almost as much as he fears hatred may turn to creative activity not only out of impulse to experience aesthetic pleasure, or the delight of exercising an active mind, but also to defend himself against anxiety stimulated by conflicting demands for detachment and human contact*" (Nasar, 1998, p.16). This also answers the question as to why some individuals are ready and willing to endure misery, frustration and isolation that accompany creating something brilliant.

Everyone has daemons and their success depends on the extent to which they can identify these daemons and keep them aside. There was always a difficult balance between Nash's need for accomplishment, depicted in the prologue as an even stronger need for recognition, and his tendency to retreat from the very world in which he sought acknowledgment. "*Eager to astound, he was always on the lookout for the really big problems*" (Nasar, 1998, p.13).

"*He began to believe that great many things he saw- a telephone number, a red necktie, a dog trotting along the sidewalk, a Hebrew letter, a birth place, a sentence in The New York*

Times- had hidden significance apparent only to him” (Nasar, 1998, p.21). The excessiveness of Nash’s needs for recognition (along with the hostility that tended to keep others at bay) seems to have weighted the precarious balance he had found. As the end product became more and more important, there were fewer rewards in the process itself. The absence of external recognition creates a difficult dilemma for the artist, whose ‘genius’ may go unrecognized and be seen as madness, and thereby may come to be experienced as such.

The realisation of Nash that he with his mental illness was quite different from what he once was seems to be important catalysts in helping Nash enter remission. What had initially begun as a defence that helped him stay within the confines of his head eventually also helped him plant himself into reality both internally and externally. Nash’s realisation led him revive his need to be absorbed in activities and work and this seems to be the element that fuelled his final recovery. The inherent rationality that once guided his life had given way to irrationality and the search for hidden meanings. The realisation of the disparity between himself now and before mental illness also made Nash realise how far he had moved from rationality a principle that formerly guided his life. The lack of logic and reason made him grapple in the dark in order to be able to reach the light guiding him to reality. *“He complained bitterly about his inability to concentrate and remember mathematics, which he attributed to shock treatments. He sometimes told others that his enforced idleness made him feel ashamed of himself, worthless” (Nasar,1998, p.22).*

Nash links his eventual remission not only to the people who enabled him to work his way back to reality but also to his own determination. In this endeavour, his creativity served him well, providing him with a means for navigating within a difficult world. The road back from madness was a particularly treacherous one for Nash because of his desire to preserve what he could of his mental faculties. Being ‘well’ did not consist of merely being grounded once again in con sensual reality. *“More signs of recovery followed. Around 1990 Nash began to correspond via electronic mail, with Enrico Bombieri, for many years the star of the institutes mathematics faculty” (Nasar, 1998, p.23) “ the exchange focused on various conjectures and calculations” (Nasar,1998, p.23).* Nash’s profound need to be able to become absorbed in his activities fuelled his ultimate recovery. For some time after his breakdown, Princeton provided a kind of halfway house within which Nash was able to continue to communicate with others while traversing the line back to reality (Nasar, 1998).

After 30 odd years of suffering Nash mysteriously returned to being his old rational/ logical self. Though for Nash the path of recovery was the most treacherous one as for him recovery did not simply mean a return to reality but also living a life immersed in work. *“A spontaneous recovery from schizophrenia- still widely regarded as a dementing and degenerative disease- is so rare, particularly after so long and severe a course as Nash experienced, that, when it occurs, psychiatrists routinely question the validity of the original diagnosis” (Nasar, 1998, p.24).*

Nash’s genius and contributions were finally recognised after the remission of schizophrenia. His need to be recognised was fulfilled after his return to the world of reality and reason. He was honoured with the Nobel Prize.

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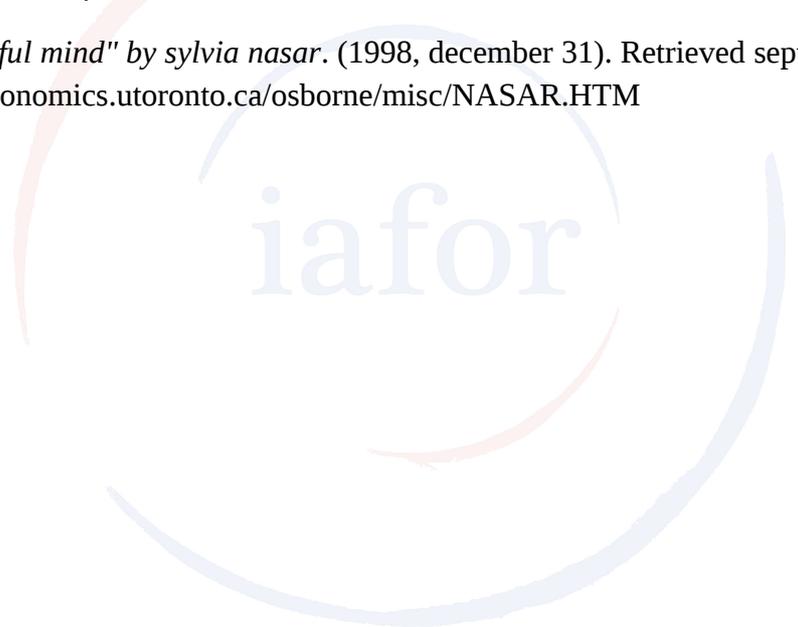
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The logo for the International Association for Frontiers of Research (iafor) is centered on the page. It features the lowercase letters "iafor" in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue one in the foreground and a light red one behind it, creating a sense of depth and movement.



APPENDIX- 1

The open coding was done by reading and re-reading the test material again. Notes were made about the test in every reading; the notes were finally consolidated to form open codes that could describe the data. Here the open codes are followed with the line of thought that led to the formation of those specific codes.

(1. The coding is in bold, 2. the thoughts or reasons for writing those codes are non bold and

Describing the genius

- 1) **Outwardly appearance of Nash**
- 2) **State of mind during mental illness**
- 3) **Difference in posture of two men (Nash with MI and Harvard professor)**
- 4) **Reactions to the degeneration of his (Nash's) mind.**
- 5) **Belief in delusions due to similarity with Mathematical ideas-** Nash claimed that his ideas about the existence of aliens came to him the same way that his mathematical ideas and the game theory came to him thus he believed them.
- 6) **Emergence into Mathematics**
- 7) **Multifaceted interests of Nash-** he was interested in games of strategy, computer architecture etc. besides mathematics.
- 8) **Two types of geniuses**
- 9) **Comparison of geniuses to average people**
- 10) **Enigma of Nash's genius-** Nash's genius was seen to be of the mysterious kind. There wasn't a single thing that could be pin pointed as being the reason for his extraordinary brain, be it his memory or speed of processing.
- 11) **Non – Rational nature of Nash's genius-** Nash saw flashes of the results first and later went on to work out the solutions that led to the results.
- 12) **Comparison to other geniuses-** Nash worked like other geniuses of his time with respect to seeing the result before reaching the solution.
- 13) **Divergence from the regular**
- 14) **Independence and solidarity –**Nash worked without teachers and believed in having no guides.
- 15) **Defying the known-** Nash followed no known or established methods. If everyone reached a solution by going left he reached the solution by going right.
- 16) **Independence-** worked alone in his head.
- 17) **Knowledge through inquiry-** he reached his learnt maths by deriving the solutions himself and not just by learning.
- 18) **Thinking out of the box-** he saw dimensions that others never saw.
- 19) **Narcissism -** indifference to others, doing what he had to or wanted to not concerned with what others thought. Though on reading further I realised that he in fact had low self

esteem and thus tried to overcome this by portraying the opposite of what he felt. People found him aloof and haughty because he was an introvert or because he was narcissistic. Nash's narcissism or need to create something that could be recognized or spoken about could be one of the major reasons that led him to succumb to his mental illness. Nash's narcissism may be seen as the other side of his extraordinary talents and his intense interpersonal isolation.

20) **Extreme faith in Rationality-** he did nothing that did not have a reason, whether it be saying a simple Hello or getting married.

21) **Solidarity emulated by heroes and guides**

22) **Fascination with the unknown**

23) **Introverted and detached-** did not have friends, was unconcerned with daily life events.

24) **Unconcerned with others-** preoccupied with his own private reality

25) **Mystery** – his manner was slightly cold and there was something unnatural and mysterious about him- as described by others.

26) **Emergence of abnormality-** even before the full fledged development of schizophrenia he showed certain symptoms that could account for the latter development of the same.

27) **Outburst-** mysterious bouts of anger that seemed to be as mysterious as his silences and his mathematical ability.

28) **Strange, aloof, abnormal ways-** Nash was different from the very beginning; someone who would stand out in a crowd because of his oddity.

29) **Peculiar effect on others**

30) **Paradox of concepts-** Nash's ideas unlike he himself were not mysterious or difficult to fathom.

31) **Creativity-** he looked at everything from a different perspective that was different and almost always went against the rules.

32) **Enormous contributions-** he made enormous contributions in economics and maths.

33) **Comparison to other geniuses-** his comparison to other geniuses of his time; one of whom is suspected to have gone and developed mental illness at the age of 51 which also went into complete remission in one year; just as mysteriously as it had appeared. Some of whom were as mysterious and creative as Nash himself.

34) **Basis of the economic theory-** the earlier economic theories reflect the effect of the great depression as the mistrust in the midst of the world war.

35) **Divergence from other**

36) **Introversion and isolation-** Nash even reflected these attributes in his theory where he zeroed in on the individual whereas other theorists focused on the groups.

37) **Novelty**

- 38) **Emotionless-** Nash was out of touch with his emotions, this can also be attributed to his rational aspect; owing to the fact that he weighed everything against reason. He compared everything to rationality and maths.
- 39) **history of Nash-** everything that influenced Nash from where he grew up and may have prompted him to become who he became.
- 40) **De-individualism-** the surprise shift from individuality in his theory emphasising more on de-centralised decision making. Paradox of his theory again.
- 41) **Fame-** rise to fame due to his out of the box thinking and the easy understandable nature of his theories. His fame led him to get the perfect assemblage of everything from fame to a loving wife.
- 42) **similarity with other geniuses-** most scientists like Thorstein Veblen etc. all have had similar solitary personalities. Independence and solidarity seem to be linked to their genius in some way.
- 43) **Fear-** psychiatrists interpret this independence and solidarity to be a fear of both love as well as hatred. This introversion seems to be a defence against anxiety; a defence to save themselves from the pain related to relationships. They seemed to be rationalising this fear with artistic expression; the genius.
- 44) **Defence from anxiety-** this artistic expression and introversion can be described as a defence against anxiety. One of the reasons that probably led Nash to finally develop schizophrenia; a dimming of this wall of artistic rationalisation. There are however various similarities between geniuses and schizoid personality. There does seem to be a deep connection between introversion/ creativity and schizoid personality.
- 45) **Schizoid personality and geniuses-** whatever the similarities between geniuses and schizoid personality individuals who possess strange and solitary temperaments don't seem too likely to succumb to mental illness normally. The schizoid type symptoms don't render them schizophrenic or psychologically unstable.
- 46) **Exception of Nash-** Nash was a tragic exception to the rule stated above. He went on to develop schizophrenia. He was uncertain about his own self and his life under all this fame and genius was a world of chaos and contradiction. He finally broke his rational barriers and got swept up in his underlying anxieties and fears.
- 47) **Beginning of mental illness-** the first visible signs of mental illness started to appear as a slight shift of Nash from eccentricity into madness. The first visible signs of Nash's slip from reality started appearing as slight flashes along with abnormal or odd behaviours.
- 48) **Belief in sanity-** due to the inconsistency of symptoms in individuals with schizophrenia, the lack of knowledge about schizophrenia as well as Nash's pre-existing eccentric behaviour; many believed that there was nothing wrong with Nash.
- 49) **Shadow of old self-** the mental illness affected him in many ways. Though there were periods of remission when he came face to face with reality again but they were brief. He seemed to be a ghost or rather non-existent in comparison to his old self.
- 50) **Mystery of mental illness-** the emergence of the mental illness seemed to be as mysterious for Nash as his genius and the theories he came up with.

- 51) **Genius and mental illness-** like Nash there seem to be others who developed the mental illness. Isaac Newton was one such person who was always an eccentric or solitary soul seemed to have suffered a psychotic breakdown with paranoid delusions at 51, but after a year or so the symptoms seemed to disappear as mysteriously as they appeared.
- 52) **Incomprehensible and inaccessible nature of mental illness**
- 53) **Symptoms and Human nature-** there was a lot of similarity between the nature of Nash and his symptoms related to schizophrenia. The mental illness just seemed to intensify the pre-existing nature of Nash.
- 54) **Intensifying the schizoid personality-** the onset of schizophrenia seemed to intensify the schizoid personality, the lack of connection between the individual and the external world seems to become more and more apparent.
- 55) **Genius unaffected**
- 56) **Lack of rationality-** lack of rationality or a sudden shift from a life guided by rationality to one entangled in deciphering secret codes and messages from aliens. A move from logic and reason to illogical and wishful claims- delusions of grandeur. Handicapped by a one tracked thought process and the sad demise of creativity and novelty.
- 57) **Realisation-**realisation of being separate or different from former self, realising the lack of creativity. A sense of shame and worthlessness encompassing the whole soul.
- 58) **Degradation of former self-** disrespect and misunderstanding attached to the onset of mental illness.
- 59) **Acceptance-** the acceptance of Nash's genius and the acceptance of Nash's work in everyday life. The spread of his influence in various unrelated fields.
- 60) **Touch with reality-** first signs of Nash's touch with reality. The beginning of the return of the genius.
- 61) **Remission-** the mysterious remission of schizophrenia after plaguing Nash's life for a full 30 years. Nash was once again his usual rational being and was able to conduct mathematical research in the true sense. He became aware of his surroundings once again. Mentions of his creativity and novelty once again. Nash's genius seemed to have fought off the mental illness making Nash a walking miracle. Nash returned to his regular routine. Nash's brain seemed to be accessible once again.
- 62) **Lack of faith in validity-** after the mysterious remission of schizophrenia and the return of the rational and logical Nash; a huge amount of scepticism seemed to be attached to his work as well as the recovery of Nash. There was also a lack of faith in the original diagnosis and a lot of time was spent rethinking it.
- 63) **Recognition-** Nash's genius and work was finally recognised after the remission of his schizophrenia. The initial fame and respect he had garnered was bestowed upon him again. He was honoured with a Nobel Prize.



The Differences of Impostor Phenomenon Tendencies on University Students Who Derived from Java, Madura, and Interracial Marriage (Transcultural)¹

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Abstract

University students, in several times, were not sure of their capability to reach high academic achievement. At a certain moment, when they reach high academic achievement, their perception of the achievement itself is negative precisely. This perception is caused by their fear of being failed to get achievement as good as their previous achievement, or maybe higher. Psychological construct that may explain this phenomenon is the impostor phenomenon, which is condition when someone excessive fear of failure and have a tendency of lack self-confidence of their abilities. Interestingly, this construct was culturally biased. That means that culture has an important role in the formation of perceptions about the achievements and failures. In certain communities in Indonesia, such as Madura, tend to have a negative perception of failure. While other cultures, such as Java, have different perceptions regarding the failure. The purpose of this study was to see how

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much difference an impostor phenomenon tendency in terms of cultural background (Java, Madura, and Interracial) of university students. The sample of this study were students of 27 Universities in Indonesia (N = 210) in second, third, and fourth year derived from Javanese, Maduranese, and cross-cultural marriage (interracial/transcultural). Data collection tool used *Clance Impostor Phenomenon Scale*, then being analyzed using One-Way Anova technique, with the help of SPSS version 17.0. From the results of data analysis, it was found that students who derived from Maduranese have a higher tendency of impostor phenomenon than the other two groups of subjects. Maduranese philosophy which is perceived that successful is a very special thing. This perception caused the Maduranese have neuroticism personality. Besides that, the Maduranese which has tendency to use authoritarian parenting style, overprotective, and tough believed to be an influential philosophical root in the high propensity of this impostor phenomenon.



Success and failure were two things which always go together in human's life. Actually, they were not the real problem in this life, the more important thing was how human could dealing with the success and failure. Found the meaning of success and failure was more important than the success and failure themselves. Success that could reach by someone when he or she studying in university was not always takes the positive effect to his or her life. Sometimes success that someone reached was the reason of his or her fear of failure, which pick them to the Impostor Phenomenon Syndrome.

Impostor phenomenon is a strong paradoxical feeling that happens to the individual which has any achievement (Clance & Toole, 1988; Want & Kleitman, 2005; King & Cooley, 1995). The paradoxical here means that when in fact somebody have the proudly achievement, they precisely feel failed and useless (September, et al., 2001). Moreover, the most fatal indicator of this impostor phenomenon was the appearance of the fear of failure and thought that success which they reached was nothing than a mere coincidence (Kumar & Jagacinski, 2005). Because of those several reasons, the people who infected by this impostor phenomenon have tendency to deceive themselves, because in spite of empirically they were personally successful, but paradoxically they understand that success was a bad thing (Ross, et al., 2001).

The symptom which most often appearing in individual with impostor phenomenon syndrome is the high level of neurotic, fear, hesitant, and the other psychosomatic syndrome. Still, in research that conducted by Ross, et al. (2001) declare that individual with the maximal impostor phenomenon tendency usually shows introversion state, more sensitive with evaluation, and exaggerate fear of failure.

Some research associate impostor phenomenon with personality. Impostor phenomenon tendencies have strong correlation with neuroticism, conscientiousness, and extraversion personality dimensions (Bernard, et al., 2002; Want & Kleitman, 2005). High neuroticism and low extraversion (same as high introversion) have logical association with the high impostor phenomenon. Whereas low conscientiousness was the logical explanation of procrastination appearing that usually explain individual behavior with high impostor phenomenon which often avoid evaluation from the others about what they did. Ross and Krukowski (2003) on their research mentioned that the impostor phenomenon tendencies have strong correlation with maladaptive personality. On the next development, impostor phenomenon seen as one of maladaptive personality, because individual with high impostor phenomenon tendencies tend to have low self-confidence which unnatural, fear, at once they often underestimate themselves (self-depreciation).

In addition of being associated with individual personality, in their early research, Clance and Imes (1978) and King and Cooley (1995) claimed that family was the real context where this impostor phenomenon built. Clance (1985) explained on his article that there were four important keys to understand the process of impostor phenomenon construct in family. First, appropriate with their role as children, people with impostor phenomenon believe that talent and achievement which they have were not special things on their family, culture, and gender perception. Second, feedback which the people with impostor phenomenon accepted was very different with feedback that they accepted from other people (lecturer, peers, or neighbors), and the others feedback doesn't consistent with the feedback from their family. Third, family members never praise or never pay attention to their talent or achievement that the people with impostor phenomenon have. Fourth, the family members tend to emphasize to the person with impostor phenomenon if being an intelligent and success with minimum effort was a important thing. Someone with tendency to experience the impostor phenomenon usually have one of those four indicator above or more (Clance, 1985).

Although these four factors seen as the key factors of impostor phenomenon's formation, only the fourth point which have no empirical evidence and hasn't been researched to proved (King & Cooley, 1995).

In this research, writers focused on the first key factor which emphasized individual macro system perception, which the cultural perception was have contribution in formatting the impostor phenomenon. On his research, Djarwadi (2010) explained that Javanese culture emphasize on patience and submission as the main philosophical in life. Because of that, the Javanese people don't see success as an important thing, because the Javanese culture emphasize to how we should behave when live in trouble. Because of that, said Djarwadi (2001) and Sitawati (2008) on their research, Javanese people don't recognize the personal interest and personal achievement, because they believe that such things were not something that should be revealed. Moreover, The Javanese tend to have fatalistic perception, so this perception often becomes the obstacle to the Javanese to be more progressive.

Different with Maduranese culture which tend to see the success, especially the financial success, was something that important to reach out. Because of this perception, the Maduranese parents tend to nurture their children with many claims of success (Kreuzer, 2002). Moreover, the stereotype of Maduranese which usually appear was they were opportunistic people, they often allowing every way to reach success. This stereotype becomes stronger, especially on Dayak people when the interracial conflict in Kalimantan happen (1997-2001). But on the other side, Maduranese has known as high achiever (Taufiqurrahman, 2006). The Maduranese proverb: *mon kerras pa-akerres* (if we could and competent to compete, we have to be

authorize, charismatic, and effective like a keris) seems could give insight to the individuals who come from Maduranese ethnics in living both in the world and the afterlife. Furthermore, Taufiqurrahman (2006) said on his article, parenting style of Maduranese parents tend to be authoritative, so The Maduranese people have extraordinary obedience to the specific figures like father, mother, teacher, and the government.

People from interracial marriage don't have specific definition about success that influenced by specific culture, because the difference culture from each other, they tend to be democratic in selecting perception (Chen, et al., 1998; Zein, et al., 2010). Moreover, the children who born from 2 different culture parents (interracial marriage) are more tolerant to difference and tend to have positive appreciation in achievement (Crippen & Brew, 2010). Because of that, authoritative parenting style identical with interracial marriage.

Cultural similarity that the writer found in Javanese and Maduranese culture was the similarity on gender perception which tends to be discriminative. Both of Javanese (Djarwadi, 2001) and Maduranese (Taufiqurrahman, 2006) culture regard women in a lower degree than men. This patriarchal culture was the important notification why women from Javanese and Maduranese or the other patriarchies culture have tendencies to experience the impostor phenomenon and fear of failure (Clance & Imes, 1978; Sitawati, 2008). Although in the next development, in fact men are having the same tendency to experience the impostor phenomenon, especially in the academic environment in university (Clance & Imes, 1978; King & Cooley, 1995).

Appearance of the tendency on impostor phenomenon in university students who reached high achievement on academic environment was the interesting topic, especially if it reviewed from the differences of cultural background which they have. King and Cooley (1995) said on their research that students with academic achievement precisely have higher probability in experience impostor phenomenon than the students who have lower achievement. This research gives other perspective about the impostor phenomenon in university students, because after all this time, researches about impostor phenomenon just discuss from orientation and motivation side. This research further will only analyze how specific culture, which we understand as philosophy in life, could be contributed in forming impostor phenomenon on the university students who have academic achievement.

Method

Linear method is a research method which is used in this research. Linear research method is a method which includes an equal power in one

term of equation (Neuman, 2003). So that, researcher used one-way ANOVA as hypothesis testing technique. Neuman (2003) continues in his book that ANOVA's task is to maintain relative contribution from independent variable's components to dependent variable.

Independent variables which are included in this research were students' cultural backgrounds. Those are Javanese (X1), Maduranese (X2) and interracial marriage (X3). Otherwise, the dependent variable was impostor phenomenon tendencies. Impostor phenomenon tendencies can be measured by psychological measurement (by CIPS) using Likert scale.

The hypotheses of this research are whether there is a significant difference between X1, X2, and X3. Moreover, to conclude this research result more completely, researcher used contrast analysis to analyze every comparison between two groups. Those groups are X1 and X2 to X3. However, this analysis technique can be done in one condition; if only the null hypotheses are rejected.

Participant

Participant in this research were 210 students (sophomore until senior) of 27 universities from all over Indonesia, not only public university, but also private university. Their universities were Universitas Airlangga (50,47%), Universitas Indonesia (10,95%), Institut Teknologi Sepuluh Nopember Surabaya (5,23%), Institut Teknologi Bandung (4,76%), Universitas Padjajaran (3,80%), Universitas Gadjah Mada (3,33%), Universitas Brawijaya (3,33%), Universitas Trisakti (2,38%), Universitas Diponegoro (1,90%), Institut Pertanian Bogor (1,42%), Universitas Negeri Sebelas Maret (0,95%), Universitas Pembangunan Nasional (0,95%), Universitas Bina Nusantara (0,95%), Universitas Sriwijaya (0,95%), IT Telkom (0,95%), Sekolah Tinggi Akutansi Negara (0,95%), Universitas Pendidikan Indonesia (0,47%), Universitas Negeri Jakarta (0,47%), Universitas Jenderal Soedirman (0,47%), Universitas Ahmad Dahlan (0,47%), Akademi Kimia Analisis (0,47%), STIE Indonesia (0,47%), STIS (0,47%), Universitas Kristen Petra (0,47%), Universitas Hang Tuah (0,47%), STIKOM International Study (0,47%), and IM Telkom (0,47%).

Participants were high achiever students who reach more than 3 for their GPA index (GPA range between 0-4). Participants' GPA range were begun from 3,2 until 3,96. Male participants were 57 students (27,14%) and women participants were 153 students (72,85%). Javanese students were 127 students (60,47%), Maduranese students were 22 students (10,47%), and transcultured students were 61 students (29,04%). Participants were asked to fulfill the online survey which contained of Clance Impostor Phenomenon Scale (CIPS). CIPS is a self-report scale which consists of 20 items reflecting impostor phenomenon condition of students. Its provided by 4 answers, strongly agree, agree, not agree, strongly not agree.

Measurement

Clance Impostor Phenomenon Scale (CIPS, Clance, 1985) is a self-report scale consists of 20 expressions which are reveal personal experience about

impostor phenomenon. The items from that scale measure attributes and impostor feeling such as fear of failure because of success in the past, dread of evaluation from others, fear of not being able to live up to the expectation of others, and have a meaning of success due to the faults of others or simply because of luck. CIPS has been used in various setting, not only in clinical setting, but also non-clinical setting (Clance & Imes, 1978; King & Cooley, 1995). Reliability coefficient of CIPS believed was 0,96 as measured using internal consistency technique (Holmes, et al., 1993 in King & Cooley, 1995).

The collected data was tested for the parametrical assumption, consisted of normality and variance homogeneity test between independent variable's components. Normality test used *Kolmogorov-Smirnov* which produced p value of 0,058, indicated if the spread of data in every component (X1, X2, and X3) of independent variable was normal. Homogeneity assumption was revealed by SPSS 17.0 and produced p value of 0,193 which indicated if the spread of data between every component of independent variable was homogenous. All assumption tests were conducted with help from SPSS for Windows 17.0.

Result and Discussion

After doing assumption tests, it was concluded if the data of two variables fit to parametrical assumptions so it could be tested with one-way Anova. To test the hypotheses, the researchers used one-way Anova with the help from SPSS for Windows 17.0. After analyzing, it was known that F score of our data was 0,566 with significant value of 0,569. Because of our p value was bigger than standart significant value $\alpha = 0,05$ (5%), it was conclude that the null hypotheses was rejected. It meant that there are significant differences of impostor phenomenon on students who derived from Javanese, Maduranese, and transcultural person. This difference not only found in our sample, but also found in its research population. The result of hypotheses testing of this research is served on the Table 1.

Tabel 1. Result of Hypotheses Testing Using One-Way Anova

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	44.095	2	22.047	.566	.569
Within Groups	8070.405	207	38.987		
Total	8114.500	209			

In addition, researcher did one-way Anova testing to test whether there are any differences between male students and female students and provided 0,008 of F score. Its significant value (p) was 0,931, it was concluded there are significant difference of impostor phenomenon tendencies between male and female students. The result of differences testing of this research is served on the Table 2.

Tabel 2. Result of Differences Testing Between Male Students with Female Students

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.295	1	.295	.008	.931
Within Groups	8114.205	208	39.011		
Total	8114.500	209			

Because of the null hypotheses was rejected, so that the researcher could did *post-hoc test* using contrast analysis. Contrast analysis was used for reveal whether there are any differences of impostor phenomenon tendencies between Javanese and Maduranese students with transcultural students. The multiple comparison testing was produced significant value (p) of 0,293. The significant value was corrected by Bonferroni technique and resulted new significant value of 0,501. It was concluded that there are differences between Javanese and Maduranese students with transcultural ones. The result of differences testing of this research is served on the Table 3.

Tabel 3. Result of Differences Testing Between Javanese and Maduranese Students with Transcultural Students

	Contra st	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
Assume equal variances	1	-1.1351	1.07653	-1.054	207	.293
Does not assume equal variances	1	-1.1351	.96164	-1.180	80.511	.241

Based on the result of the research we could conclude that there are significant differences of impostor phenomenon tendencies between Javanese, Maduranese and transcultural students. It means, we could reveal that cultural factor has a significant contribution of impostor phenomenon forming of the person. Maduranese students have a bigger impostor phenomenon tendencies score than two other groups. It was acceptable because Maduranese have a tough and authoritarian parenting style (Taufiqurrahman, 2006). Authoritarian and overprotective parenting style, wrote Want and Kleitman (2006) in their research report, causes a bigger

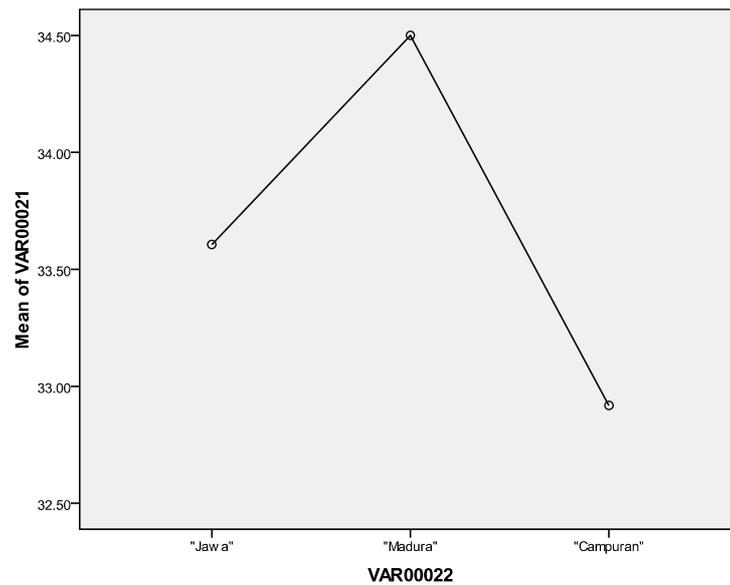
tendencies of impostor phenomenon. Maduranese have a strong perception about achievement. As a consequence, Maduranese students have given a strong social demand of success. Researchers indicate this factor as the strongest cause of *neuroticism* personality which gives a significant contribution of impostor phenomenon tendencies (Want & Kleitman, 2006; Kumar & Jagacinski, 2005). Maduranese character, such as tough and habituating with conflicts brings impostor phenomenon in a more serious condition. Langford and Clance (1993) wrote in their article, a child who lives along the conflict has a bigger score of impostor phenomenon tendencies.

Javanese students also have high impostor phenomenon tendencies, though it was not higher than Maduranese students. It because of Javanese has a perception that personal intention and successful was not acceptable of being shown to other people (Djarwadi, 2001). As a consequence, Javanese parents not tend to appreciate of their children's talents or achievements. Besides, Clance (1985) wrote in her book, unappreciative parents bring their children to a serious condition of impostor phenomenon tendencies.

After being compared simultaneously, Javanese and Maduranese students with transcultured students showed that there is a significant difference between them. It showed that students who came from two patriarchy culture which are perceive that women are not more powerful than men, implied bigger impostor phenomenon tendencies. Children who were born in interracial marriage were always identifying with authoritative and democratic parenting style. They usually get a positive feedback from their family about their achievement. It means that they gain a little probability of having a high tendency of impostor phenomenon. (Sonnak, et al., 2001; Crippen & Brew, 2010; Langford & Clance, 2001).

The result of multiple comparisons can be shown in *mean plot* which explain mean position of every independent variable groups if they are compared by other groups.

Picture 1. Mean Plot



Mean plot describe that Maduranese students's mean group gain the highest score of impostor phenomenon tendencies when compared to two other groups.

Conclusion and Suggestion

From this research that we conducted, we conclude that there are differences of impostor phenomenon tendencies on University Student who derived from Java, Madura and interracial marriage (transcultural). It's proved that cultural variable has a significant contribution in impostor phenomenon tendencies forming. It could be understand because someone's culture provides her/him certain perceptions about achievements. Perception of success often brings anxiety even frustrating to someone, and that will be ended on impostor phenomenon tendencies. But keep in mind that cultural variables are less specific to describe in detail about the process of impostor phenomenon construction which is experienced by individuals. Although culture has a strong influence in the formation of parenting style in a family, those variables still could not perfectly to illustrate how impostor phenomenon is possible to be constructed.

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Capability building in social enterprises – The role of learning

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ABSTRACT

Social entrepreneurship has emerged in response to problems of long term sustenance faced by traditional philanthropic models adopted by social organizations. Being in its developmental stages, academic debate in the field of social entrepreneurship has focused on developing conceptual clarity, addressing practice based issues and developing boundaries of the field. As such, discourse on learning in social entrepreneurial literature has been sparse. This paper discusses the role of learning in developing the capabilities of social enterprises. Different themes in social entrepreneurship literature have been highlighted which reveal the variation in the way the concept has been discussed. Literature on learning and social entrepreneurship has been combined to map actors in the social enterprise against the levels at which learning occurs. Subsequently, predominant learning processes and the type of capital generated in each actor-learning level combination have been identified. In the context of constantly shifting organizational boundaries of the social enterprise, the role of communities of practice in facilitating learning has been focussed upon. In addition to learning within communities of practice, the critical role of the social entrepreneur as an enabler of learning between multiple communities of practice has also been underlined. The paper contributes to current literature by identifying relevant research gaps for developing learning literature in the social entrepreneurial context. It also informs practice by bringing attention to the fact that developing processes and systems to harness and promote learning can positively impact organizational growth and sustenance.

Key words: Communities of practice, learning, social enterprise, social entrepreneurship.

Type: Conceptual paper

INTRODUCTION

Social entrepreneurship has gained prominence in the last two decades as an organized and sustainable approach for social value creation. It has emerged in response to problems of long term sustenance faced by traditional philanthropic models adopted by social organizations. Being a relatively new and developing field which is attempting to define its boundaries, the role of learning in organizational capability development has received peripheral academic attention.

The organizational competencies perspective (Lado & Wilson, 1994) identifies learning processes as one of the critical organizational capabilities that can enable a firm to attain sustained competitive advantage. Social enterprises operate in resource constrained environments (Di Domenico, Haugh & Tracey, 2010) and rely heavily on the expertise of human resources to identify opportunities and develop cost effective innovative solutions. The constraint on availability of human resources with the required competency adds to the challenge (Center for Advancement of Social Entrepreneurship, 2008). In this context, studying the processes of capturing and utilizing learning both within and beyond organizational boundaries attains greater significance.

This paper begins by inspecting the concept of social entrepreneurship in literature and describing the major themes. Developing on its unique features, the role of learning in the social entrepreneurial context has been discussed. The learning process in social enterprises has been examined by mapping actors at different activity levels in the enterprise across different learning levels. Subsequently, the role of communities of practice as structures promoting learning has been elaborated upon. The paper concludes by identifying potential areas of research interest to develop theory and practice in this developing field.

SOCIAL ENTREPRENEURSHIP: DEFINITION AND FEATURES

Social entrepreneurship literature identifies two research traditions which have influenced the field – American and European. Hoogendoorn, Pennings and Thurik (2010) trace the historical development of social enterprises in America and Europe. In both regions, social enterprises developed in response to economic crises of the 1970s and 1980s. The predominant influence of the social sector in Europe and that of the business sector in America resulted in the emergence of a wide range of organizational forms and legal structures. Together, the two perspectives allow for inclusion of enterprises with varying levels of social and business inclinations, with or without income generation channels, and exhibiting different levels of entrepreneurial and innovative behaviour.

A total of 22 definitions (of social entrepreneurship and social entrepreneur) were located in literature and websites of noted international foundations supporting social entrepreneurship research and practice (Table 1). The definitions reflect emphasis on social and commercial motives in varying degrees. Some views focus more on the ability of the individuals or organizations to bring about social change and create social value while others underline their ability to sustain itself through income generation, organizing capabilities and innovation (Tracey & Phillips, 2007).

Insert Table 1 about here

Ranging over a period of two decades, the definitions exhibit one drastic shift between those provided by Waddock & Post (1991) and Dees (1998b) followed by a gradual evolution of the concept. Since the very beginning, social entrepreneurs were perceived as change agents. The nature of their actions as explicated by Waddock & Post (1991) implied an indirect involvement through endeavours to influence policy making. This definition seems to be closer to social activism (see Martin & Osberg, 2007) and therefore does not serve to distinguish social entrepreneurship from similar concepts. Dees distinguished social entrepreneurs as change agents directly involved in addressing social problems resulting in social transformation. Later definitions have adapted and elaborated Dees's definition resulting in clearer explication of social objectives and inclusion of specific entrepreneurial aspects. Waddock & Post (1991) exclude public sector as a source of social entrepreneurship. However, Dees and others provide a wider scope whereby social entrepreneurship can arise from any or a combination of sectors.

The multiplicity of overlapping definitions found in literature required their structuring into a single comprehensive account for the purpose of this paper. In order to guide detailed discussion on the features of social entrepreneurship, the following definitions were developed.

Social entrepreneurship can be defined as a process through which social value is created in a sustainable manner. It is a set of activities undertaken to convert ideas into context based solutions to address social problems and bring about social transformation. The process involves use of business principles, entrepreneurial practices and development of means of earned income, wherever possible, for sustainability and scalability. Innovation is an integral part of the process. However, it may be more incremental than radical in nature.

A *social enterprise* is an organization created to carry out the process of social entrepreneurship.

A *social entrepreneur* is a motivated individual with an aim of creating social change by identifying opportunities to develop socially valuable solutions and interventions. He brings together other motivated individuals, community and organizations to generate solutions for social problems. He has risk taking abilities and is prepared to operate at a loss for the cause.

Features of social entrepreneurship

Purpose

Explicit social objectives (e.g.: Dees, 1998b) are central to social entrepreneurship, although they may not be its exclusive aims. It tries to address failures of the public and private sectors and alleviate social problems with activities directed at bringing about social transformation. Long term sustainability of solutions and services (Seelos & Mair, 2005) is of prime concern to social entrepreneurship. An important aspect of social entrepreneurship is the gradual evolution of social goals and areas of operation overtime. The social entrepreneur starts with his/her current expertise, resources and network and as these develop, change and expand overtime, he/she progressively includes/excludes different social goals (VanSandt, Sud & Marme, 2009) depending upon upcoming opportunities resulting in a constant evolution of the enterprise's products, services and impact.

Social enterprises blur distinctions between for-profit and not-for-profit motives (Peredo & McLean, 2006). Dees (1998a) describes a spectrum of entrepreneurial models based on the degree of relevance of the two goals and the role of different stakeholders – customers, investors, workforce, and suppliers. Different organizations may combine these two objectives in varying degrees (Murphy & Coombes, 2009) thus resulting in a continuum from an exclusive emphasis on social goals and no profit making motive to a predominant

emphasis on commercial goals with social aims subordinated to a large extent (Peredo & McLean, 2006). Massetti (2008) views hybrid enterprises with both social mission and profit making objectives as organizations which can provide stability to the spectrum of social enterprises and can sustain and scale their impact.

Social value creation

While commercial enterprises aim to create economic value for their stakeholders, the chief aim of social enterprises is to create social value. Social value has been defined as gains created for society as a result of efforts directed at a social need or problem which go beyond individual benefits or those that accrue from regular market activity of firms (Phills Jr., Deiglmeier & Miller, 2008). Commercial enterprises may also develop social value in the form of efficient markets and governance mechanisms (Auerswald, 2009). However, it develops as a positive externality of economic activity rather than being consciously created as an end in itself (Seelos & Mair, 2005). On the other hand, social value creation is seen as an end by the social enterprise and any economic value created is perceived as a by product of social value creation activity (Seelos & Mair, 2005).

Ownership and stakeholders

Social enterprises may be started by individuals or a group of motivated individuals but their ownership extends beyond organizational boundaries and especially involves the end customers or beneficiaries. Several stakeholders apart from investors and the employees are critical to the sustenance of the social enterprise such as the government, the society and the direct end customers or beneficiaries. The more entrepreneurial a social venture, the more answerable it is to its investors. Unlike philanthropic organizations where returns on investment are not emphasized and the only focus is the efficient utilization of investment, social enterprises involved in market driven activities are also required to show return on investments which are then reinvested or redistributed among the beneficiaries.

Values and motivation

Social enterprises incorporate strong values of accountability, transparency and working for social good. They hold strong inherent values of developing an equitable society with greater freedom and equality (Murphy & Coombes, 2009; Martin & Osberg, 2007).

Location of the social enterprise in the current sector configuration

The social enterprise may be located either in the private or the social sectors or at the intersection of the private, public and the social sector. Social enterprises are increasingly blurring the boundaries between the sectors (Dees & Anderson, 2006) due to the emphasis of social aims as well as profit motives and use of hybrid business models.

Leadership Vs social action

Literature indicates two perspectives through which social entrepreneurship has been studied. The first and more studied is the leadership perspective which looks upon successful social entrepreneurship as a result of specific characteristics of the leader (Mort, Weerawardena & Carnegie, 2003). The Ashoka foundation describes specific characteristics of social entrepreneurs which differentiate them from other individuals. Similarly, Dees (1998b) describes social entrepreneurs as change agents whose leadership enables people to fulfil the social goals. A second perspective looks at social entrepreneurship as a process (Mair & Marti, 2006). This perspective discusses the processes through which social

enterprises achieve their social goals. It provides scope for research into different organizational practices and processes and their impact on in sustenance and growth of social enterprises.

Ways of organization and conducting business

Social enterprises use innovative business models and take up multiple organizational forms ranging from pure business like units to hybrid models to pure social organization forms (Dees, 1998a). Funding models also vary from pure philanthropic models to specific investments into market driven activities in order to generate revenues for self-sustainability. In addition to developing income generation streams, social enterprises also employ several business principles enabling a more planned approach to conduct business. Some authors have specifically used the term 'business' (DTI, 2002; Hockerts, 2006; Thompson & Doherty, 2006; Di Domenico et.al., 2010) to indicate the congruence of social entrepreneurial activity with commercial businesses.

Entrepreneurial nature

Social entrepreneurship assimilates entrepreneurial characteristics to achieve its objectives. Social entrepreneurs recognise opportunities by detecting adverse circumstances and developing workable strategies and business models to address them (Guclu, Dees & Anderson, 2002). By grounding the search in the context of the community, opportunities often missed by commercial businesses and public sector are identified (Dees, 2009). In contrast to traditional entrepreneurs who identify opportunities not visible to others thereby creating new markets, social entrepreneurs identify existing deficiencies which have been acknowledged but not acted upon (Murphy & Coombes, 2009). Similar to commercial entrepreneurship, converting the opportunity into a viable model involves high risk taking, constant innovation and adaption of products, services and the organization (Mort, Weerawardena, & Carnegie, 2003). A distinguishing factor of social entrepreneurs is that they work in resource constrained situations (Di Domenico et.al., 2010) and face the challenge of developing innovative ways to utilize resources currently at hand (Dees, 1998b).

LEARNING IN SOCIAL ENTERPRISES

Although belief in the 'great man' theory is still strongly held (Spear, 2006), the importance of overall organizational processes (Mair & Marti, 2006), and capabilities for the sustenance of a social enterprise is also being recognised. In the world of business, human resource capabilities have been identified as a critical source of sustained competitive advantage for the firm (e.g.: Barney, 1991). Specific organizational capabilities such as culture, learning processes, routines and entrepreneurship (Lado and Wilson, 1994) have been recognized as drivers for sustained competitive advantage. The development of dynamic organizational capabilities enables a firm to respond effectively to the changing competitive environment (Teece, Pisano, & Shuen, 1997; Zhara & George, 2002). In a similar vein, the Center for Advancement of Social Entrepreneurship's report (2008) stresses on developing learning processes for capability building in social enterprises. The Center emphasizes on designing different learning models and learning networks for developing the capabilities of the human resources and strengthening the talent pool. Exploiting learning as a dynamic capability implies utilization of knowledge assets within and between organizations to respond effectively to the changing environmental conditions. Such knowledge might reside in individuals, teams, work groups, informal groups within and across organizations, departments, and inter-organizational networks. In the budding social entrepreneurial

ecosystem, it is essential for social enterprises to identify and harness learning within the organization as well as across networks.

While great amount of research has been conducted in the commercial business sector with respect to learning and its implications for competitive advantage, corresponding research in the field of social entrepreneurship is scarce. As discussed before, social enterprises are constantly evolving in response to new opportunities (VanSandt, Sud & Marme, 2009). At the same time, they also need to constantly adapt to the changes in the uncertain external environment. This implies a constant evolution of the mental models (Senge, 1990) of the entrepreneur as well as employees. Learning processes have been related to innovative outputs (e.g. Levinthal & March, 1993; Ismail, 2005; Baker & Sinkula, 2002 etc.) and organizational performance (e.g. Baker & Sinkula, 1999). Learning literature identifies single and double loop learning processes in organizations (Argyris & Schon, 1978) which result in efficient processes and innovative outcomes respectively. Both kinds of learning are critical for the organization (e.g.: Fiol & Lyles, 1985) and negotiating a trade-off between exploration and exploitation becomes crucial to the organization for ensuring continuance as well as innovating for the future (March, 1991). The same holds true for social enterprises where there is a need to constantly improve efficiency in dealing with the current environment as well as developing new ways to enhance social impact. Exploration and exploitation extend to the inter-organizational level by the process of formal alliances and experience sharing between organizations (Holmqvist, 2004). Such interactions also generate new learning for the organization to internalize (Holmqvist, 2004).

The learning process in social enterprises

Learning occurs at multiple levels and involves various actors. In order to explore the process in-depth, the social enterprise and the learning process have been divided into smaller units of analysis to facilitate understanding. The social enterprise has been divided into activity levels in which specific actors/groups have been identified as units of analysis. Four activity levels in a social enterprise are: individual level – social entrepreneur/employee/volunteer/ community member, group/team level, organizational and network levels. Learning levels used here are as discussed in learning literature – individual, group/team, organizational and inter-organizational. Mapping the activity levels against learning levels, a discussion of the process of learning has been undertaken (Table 2).

 Insert Table 2 about here

Individual level learning

The social enterprise involves four types of actors: the social entrepreneur, employees, the voluntary workforce who may or may not belong to the community being served and community members. These individuals bring with them their stock of knowledge, skills, and past experiences. The workforce from the community brings with it community based local knowledge which facilitates the development of context specific innovative solutions (Dees, 2009). This stock of information, experience, knowledge and expertise within an individual has been defined as human capital (Zheng, 2008). The diversity in human capital, especially the involvement of the community accelerates learning processes and anchors it in the context of the social problem being addressed.

Learning, at this level, is self directed and occurs through personal experience, failures, trial and error, and adaptation. The adult learning approach described by Kolb (1984) provides a

framework for understanding learning at this level. Individual learning remains tacit and manifests itself in verbalization (Crossan, Lane & White, 1999) and actions. It can be leveraged in tacit and explicit forms in individual action and interpersonal interactions.

Group level learning

At the group level, learning majorly occurs in two ways: in groups or project/functional teams, and in communities of practice.

The team may involve the four kinds of individual actors in different combinations. Learning occurs in intra-team interactions or in exchanges with other teams within the boundaries of the organization. Inter-organizational teams might be formed for projects, in which case, learning occurs in interactions across the boundaries of the organization. Organizational learning models (e.g.: Nonaka, 1994; Crossan et. al, 1999) can be utilized to understand learning at this level.

Voluntary groups might also be formed within the organization and across organizational boundaries wherein people are brought together by topics of mutual interest. These structures, referred to as communities of practice (CoP), have been identified as important for knowledge sharing, accelerated problem solving and innovations (e.g.: Lesser & Storck, 2001; Wenger & Synder, 2002). CoPs are defined as non-formal groups of individuals brought together by interest in a common area of expertise. Individuals in a CoP learn by interacting and sharing knowledge and building on it to generate a common shared understanding (Brown and Duguid, 1991). Social relationships, mutual respect and trust have been identified as characteristics essential to the development of CoPs (Wenger & Synder, 2002).

At this level of interaction, human capital is converted into intellectual capital (Nahapiet & Ghoshal, 1998) where knowledge is shared in the group or team (as well as community or organization) through the formation of common mental maps (Crossan, et.al., 1999). These interactions also result in creation of human capital by adding to the individuals' knowledge repertoire. Social relationships are also formed as a result of the interaction process. These result in creation of social capital which has been defined as goodwill which is enables development of support, information and influence networks (Adler & Kwon, 2002). Relationships and the inherent process of exchange are central to social capital formation (Nahapiet & Ghoshal, 1998). The ability of the organization to innovate has been related to social capital of the firm (Tsai & Ghoshal, 1998; Zheng, 2008).

Organizational level

Learning at the organizational level occurs when learning at the group level within the organization is institutionalised into practices followed by the organization (Crossan et.al. 1999). The process of learning at this level can be understood using Crossan et.al.'s (1999) organizational learning model and Senge's (1990) learning organization model.

The process of institutionalisation results in generation of new knowledge which is stored in the individuals (human capital). Intellectual and social capitals are generated in the process of exchange of knowledge and practice in groups.

Inter-organizational level

In order to provide products and services to the end consumer, the social enterprise builds and maintains professional networks of stakeholders and partnering organizations. Information exchange and interactions in these networks is incorporated into the organization through boundary spanners and individuals involved in these interactions. Network

dependent learning enables social enterprises to identify goals and paths to the goals in an uncertain environment (Goldstein, Hazy, & Joyce, 2008). At the same time, communities of practice may also exist across organizations enabling learning in a voluntary, informal environment.

Learning across networks is dependent upon the ability of the organization to identify and internalize knowledge. Lichtenthaler & Lichtenthaler (2009) describe three abilities enabling learning in inter-organizational networks: absorptive, connective, and desorptive capabilities. Absorptive capacity enables exploration and assimilation of knowledge between firms (Cohen and Levinthal, 1990) while it is the connective capacity which enables its retention in networks without internalization (Lichtenthaler & Lichtenthaler, 2009). Firms also identify opportunities to share and exploit knowledge by transferring them outside the organization. This capacity of the firm to exploit information sharing opportunities has been termed as desorptive capacity (Lichtenthaler & Lichtenthaler, 2009).

Network capital is generated in formal networks and refers to rational calculated investment in exchange relationships between collectives or organizations which may or may not result in trust based social relationships (Huggins, 2010). Thus, network capital may result in development of social capital and vice-versa (Huggins, 2010) as interactions become less or more relationship oriented.

Communities of practice as centres of learning

Learning processes as described above can be located within different formalized and non-formalized structures at three different loci of interaction – within the organization, between organizations, and between organization and community. Formalized structures include groups/ teams and inter-organizational networks which might involve individuals from within and across organizations as well as communities. CoPs can be identified as non-formalized structures aiding learning across all the three loci.

The characteristics of social entrepreneurship indicate that much of the learning comes from context based interactions with the target community. Development of products, services or interventions require identification of existing needs of the community (Guclu, Dees & Anderson, 2000). Such learning can come from constant informal engagement of interested individuals in CoPs. CoPs aid in faster resolution to daily problems, provide an environment for enhancing the skills and knowledge of the members, enable development of expertise in problem solving, provide faster access to relevant information, result in development of standard procedures, and develop social capital through community building, trust, identity and relationships (Wenger & Synder, 2002).

Insert Table 3 about here

Three structural elements of CoPs have been identified (Wenger, 1998; Wenger & Snyder, 2002): (i) a knowledge domain which provides a sense of identity to the community, (ii) a community or social context for learning to take place, and (iii) practice which includes ideas, information, tools etc developed by the community. Learning in CoPs is a social process thus situated in the interactions of individuals (Brown & Duguid, 1991; Lawless, 2008). Situated learning highlights the importance of the context in which learning takes place. This implies that learning in one context may not be completely applicable in another context and may not produce desired results. The process of becoming part of the community and learning has been described as 'legitimate peripheral participation' (Brown & Duguid, 1991). This is

indicative of the how new members socialise into the community. They begin by involving themselves in peripheral simple tasks which enables them to learn the language of the community, familiarise with its narratives, understand its viewpoint, and develop identification with the community. Gradually they involve themselves in more complex tasks and become more ingrained into the community, thus moving towards full participation and increasing their legitimacy within the group. Full participation differs from central participation in that the amount of involvement of members is considered rather than the individual's centrality in the community (Lawless, 2008). No centre can be described in a community of practice; members differ in terms of their level of participation. CoPs are based on learning by doing. Learning occurs by active participation rather than by learning about how to do certain tasks. Thus, learning is more in tacit form and interpreted in the context of the community (Brown & Duguid, 1991).

The process of learning in CoPs as described above reflects congruence with the features of social enterprises. The necessity of the social enterprise to harness context based tacit learning involving actors who may not be part of the formal organization renders it amenable to the development of CoPs. Traditionally, CoPs were identified to develop voluntarily but organizational literature has called attention to benefits for organizations in formally supporting the development of CoPs and harnessing knowledge generated in them. (e.g.: Wenger, 1998; Meeuwesen & Berends, 2007). Correspondingly, enabling emergence of CoPs in social enterprises would result in greater advantages in terms of better chances of sustenance and growth.

In an ideal combination, formal teams and CoPs coexist in what has been termed as the 'double knit organization' by Wenger & Synder (2002). CoPs serve as arenas of knowledge development while formal teams and groups apply it for problem solving. Individuals who are part of both the team and the CoP act as linking agents and align organizational requirements with CoP activities (Wenger & Synder, 2002). Therefore, in social enterprises, CoPs should be leveraged as active channels of knowledge development directing practice in teams.

DISCUSSION

The increasing recognition of social enterprises as vehicles for social transformation necessitates development of academic literature to support the growing field. The term social entrepreneurship denotes a confluence of perspectives from multiple social science streams – those belonging to the social domain such as sociology, psychology, and anthropology; and those belonging to the business and management domain. Thus, theories and models developed in either context need to be re-examined for their applicability in this new context.

This paper contributes to existing literature by developing a case for extensive research on the role of learning in the social entrepreneurial context. The process of learning in social enterprises has been investigated by utilizing existing concepts generated predominantly from the commercial enterprise perspective. Research efforts should be directed at investigating these theories in the new context in order to develop more context specific models.

The paper brings out the importance of CoPs as key structures for aiding learning in social enterprises. The social entrepreneurial context demands conscious support to creation of CoPs generating effective solutions to its unique problems. CoPs have mostly been studied in the context of open innovations in commercial enterprises. Examples of successful innovations based on communities of practices include development of the Linux kernel (e.g.: Lee & Cole, 2003), purposeful development of communities of practice in Rolls-Royce (Meeuwesen & Berends, 2007) etc. Wenger & Synder, 2002 describe CoPs in the World

Bank as a case from the social sector. Literature needs to be developed in order to examine the process of learning in CoPs in social enterprises. Research efforts should also be directed at establishing the impact of learning on performance which can be measured in terms of social impact, sustainability and scalability.

An important aspect to consider in this context is the role of the social entrepreneur as bridging the structural hole in multiple CoPs. Two levels of CoPs might exist in the social entrepreneurial ecosystem – CoPs of social entrepreneurs and experts across different locations and sectors; and CoPs of employees, volunteers, community and/or the social entrepreneur involving the individual social enterprise and the community being served. The social entrepreneur belonging to both CoPs, transfers learning across these communities and therefore acts as critical node spanning a structural hole in the social entrepreneurial ecosystem. Research on the role of social entrepreneur in bridging the CoPs would enable greater understanding of learning.

While this paper throws pertinent questions to the academic community, it also helps practitioners in identifying different structures where learning occurs. By distinguishing the loci of interactions, the levels of learning, and the actors involved, this paper enables social enterprises to develop a planned approach to learning. Creating a double knit organization by developing CoPs in addition to teams can facilitate learning its utilization for organizational sustenance and growth.

The paper provides only a preliminary discussion on the role of learning in social enterprises. Elaborate investigation on the several potential areas of research identified here is required. Development of rich scholarly discourse on the aspects discussed here would provide grounds for developing theory as well as guiding practice in this developing field.

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Table 1: Definitions of Social entrepreneurship/ social entrepreneur in literature

S.No.	Definition	Source
1.	“Social entrepreneurs are private sector citizens who play critical roles in bringing about "catalytic changes" in the public sector agenda and the perception of certain social issues. Although not involved in direct actions to solve public problems, their work sets the stage and context for policy making and policy implementation activities” (p. 393)	Waddock & Post, (1991)
2.	“ Social entrepreneurs play the role of change agents in the social sector, by: <ul style="list-style-type: none"> • Adopting a mission to create and sustain social value (not just private value), • Recognizing and relentlessly pursuing new opportunities to serve that mission, • Engaging in a process of continuous innovation, adaptation, and learning, • Acting boldly without being limited by resources currently in hand, and • Exhibiting a heightened sense of accountability to the constituencies served and for the outcomes created.” (p.4) 	Dees (1998b)
3.	“Social entrepreneurs, people who realise where there is an opportunity to satisfy some unmet need that the state welfare system will not or cannot meet, and who gather together the necessary resources (generally people, often volunteers, money and premises) and use these to `make a difference".” (p.328)	Thompson, J., Alvy, G. & Lees, A (2000)
4.	“A business with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or the community, rather than being driven by the need to maximise profit for shareholders and owners.” (p.7)	DTI (2002)
5.	“[S]ocial entrepreneurship that creates innovative solutions to immediate social problems and mobilizes the ideas, capacities, resources, and social arrangements required for sustainable social transformations.” (p.262)	Alvord, Brown, & Letts (2004)
6.	“[S]ocial entrepreneurship could be defined as ‘the construction, evaluation and pursuit of opportunities for social change’.” (p.49)	Roberts & Woods (2005)
7.	“ [W]e define SE as entrepreneurship that creates new models for the provision of products and services that cater directly to the social needs underlying sustainable development goals such as the MDGS.” (p.244)	Seelos & Mair (2005)
8.	“We define social entrepreneurship as innovative, social value creating activity that can occur within or across the nonprofit, business, or government sectors.” (p.2)	Austin, Stevenson & Wei-Skillern (2006)
9.	“Social purpose business ventures are hybrid enterprises straddling the boundary between the for profit business world and social mission driven public and nonprofit organizations. Thus they do not fit completely in either sphere.” (p.7)	Hockerts (2006)

Table 2 (Cont'd)

S.No.	Definition	Source
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10.	“Innovative and effective activities that focus strategically on resolving social market failures and creating new opportunities to add social value systemically by using a range of resources and organizational formats to maximize social impact and bring about change.” (p.23)	Nicholls (2006)
11.	“ [S]ocial entrepreneurship is exercised where some person or group: (1) aim(s) at creating social value, either exclusively or at least in some prominent way; (2) show(s) a capacity to recognize and take advantage of opportunities to create that value (“envision”); (3) employ(s) innovation, ranging from outright invention to adapting someone else’s novelty, in creating and/or distributing social value; (4) is/are willing to accept an above-average degree of risk in creating and disseminating social value; and (5) is/are unusually resourceful in being relatively undaunted by scarce assets in pursuing their social venture.” (p.64)	Peredo & McLean (2006)
12.	“We view social entrepreneurship broadly, as a process involving the innovative use and combination of resources to pursue opportunities to catalyze social change and/or address social needs.” (p.37)	Mair & Marti (2006)
13.	“Social enterprises – defined simply – are organisations seeking business solutions to social problems.” (p.362)	Thompson & Doherty (2006)
14.	“We define social entrepreneurship as a behavioural phenomenon expressed in a NFP organization context aimed at delivering social value through the exploitation of perceived opportunities.” (p.25)	Weerawardena & Mort (2006)
15.	“We define social entrepreneurship as having the following three components: (1) identifying a stable but inherently unjust equilibrium that causes the exclusion, marginalization, or suffering of a segment of humanity that lacks the financial means or political clout to achieve any transformative benefit on its own; (2) identifying an opportunity in this unjust equilibrium, developing a social value proposition, and bringing to bear inspiration, creativity, direct action, courage, and fortitude, thereby challenging the stable state’s hegemony; and (3) forging a new, stable equilibrium that releases trapped potential or alleviates the suffering of the targeted group, and through imitation and the creation of a stable ecosystem around the new equilibrium ensuring a better future for the targeted group and even society at large.” (p.35)	Martin & Osberg (2007)
16.	Characteristics of social enterprises: multi-agency environments, enterprise orientation, social aims, social ownership. (p.421)	Shaw & Carter (2007)
17.	“We define social entrepreneurship as the creation and undertaking of a venture intended to promote a specific social purpose or cause in a context of mobilization.” (p. 326)	Murphy & Coombes (2009)

Table 3 (Cont’d)

S.No.	Definition	Source
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18.	“Social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner.” (p.522)	Zahra, Gedajlovic, Neubaum, & Shulman (2009)
19.	“More market driven than traditional nonprofit ventures, and with the capacity to be financially self-sustaining, the term “social enterprise” has been coined by government and other stakeholders to denote socially driven businesses.” (p.682)	Di Domenico, Haugh & Tracey (2010)
20.	“Social entrepreneurs are individuals with innovative solutions to society’s most pressing social problems. They are ambitious and persistent, tackling major social issues and offering new ideas for wide-scale change.”	Ashoka Foundation
21.	<p>“ Social entrepreneurship is</p> <ul style="list-style-type: none"> • About applying practical, innovative and sustainable approaches to benefit society in general, with an emphasis on those who are marginalized and poor. • A term that captures a unique approach to economic and social problems, an approach that cuts across sectors and disciplines. • Grounded in certain values and processes that are common to each social entrepreneur, independent of whether his/ her area of focus has been education, health, welfare reform, human rights, workers' rights, environment, economic development, agriculture, etc., or whether the organizations they set up are non-profit or for-profit entities. • It is this approach that sets the social entrepreneur apart from the rest of the crowd of well-meaning people and organizations who dedicate their lives to social improvement.” 	Schwab Foundation
22.	“Social entrepreneurs are society’s change agents, creators of innovations that disrupt the status quo and transform our world for the better.”	Skoll Foundation

Table 2: Learning process matrix for social enterprises

Social enterprise activity level	Learning Level				Type of capital
	Individual	Group	Organizational	Inter-organizational	
Individual - Social entrepreneur - Employee - Volunteers - Community members	Experiential learning				Human capital
Group/ Team		- Intra-group learning - Inter-group learning - Learning in communities of practice		- Learning in formal networks - Learning in communities of practice	- Human capital - Intellectual capital - Social capital
Organizational			Institutionalisation of practices		- Human capital - Intellectual capital - Social capital
Network of social enterprises				- Learning in formal networks with stakeholders - Learning in communities of practice	- Network capital - Social capital

Table 3: Structures promoting learning in social enterprises

Structures enabling learning	Locus of Interaction		
	<i>Within organization</i>	<i>Inter-organizational interaction</i>	<i>Organization – community interaction</i>
<i>Formalized structures</i>	Teams/groups	- Teams/groups - Formal networks	Teams/groups
<i>Non-formalized structures</i>	CoPs	CoPs	CoPs



Screening and diagnosing children with Autism Spectrum Disorders: A brief literature review

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Abstract

The effective screening and diagnosis of Autism Spectrum Disorders (ASD) is impacted by the difficulty in specifying ASD symptoms and profiles which vary across developmental and chronological ages. The spectrum nature of ASD, diagnostic expansion and definition ambiguity is exemplified by inconclusive attempts in sub-typing the disorder. The use of traditional diagnostic guidelines such as the Diagnostic Statistical Manual (DSM) and other available screening tools relies on the experience of the clinicians and is subjected to bias in interpretation. Practical considerations (e.g. access to services) and constraints (e.g. time and cost of screening administration) are also limiting factors. While more empirical research is needed to validate current paper-and-pencil screening tools, innovative technology may be applied in the development of screening tools for ASD.



Screening and diagnosing children with Autism Spectrum Disorders: A brief literature review

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Autism, Asperger's Disorder, Pervasive Developmental Disorder – Not Otherwise Specified, broadly defined as Autism Spectrum Disorders (ASD) has received increased attention in recent years. More than 60 years ago, Leo Kanner first described the disorder "early infantile autism" as being a rare condition in 1943. He was primarily referring to 'autistic disorder' (DSM-IV-TR; APA, 2000). Since then, advances in the knowledge of the condition have come to define other similar disorders such as Asperger's Disorder (or Asperger's Syndrome) and include them under Pervasive Developmental Disorders in the Diagnostic and Statistical Manual (DSM). However, recent epidemiology studies of ASD suggest burgeoning prevalence rates (Chakrabarti & Fombonne, 2005; Fombonne, 2003, 2005; Saracino, Noseworthy, Steiman et al., 2010). Baird and colleagues (2006) surveyed 56 946 children in the United Kingdom and estimated a total prevalence of 11.6 per 1000 for all ASDs. Childhood autism accounts for 3.89 per 1000 while other ASDs was 7.72 per 1000. When clinical consensus was combined with outcomes from standardized instrument for a more stringent diagnosis criterion, the rate was 2.48 per 1000. The Center for Disease Control in the United States monitored the prevalence rate across different states reported an overall estimate of 9 per 1000 in 2006 (CDC, 2007). Although there may be a genuine increase in prevalence rate of ASD as more cases get recognised, the methodology used to measure prevalence rate should be considered. Wazana, Bresnahan and Klin. (2007) demonstrated how diagnostic expansion i.e. inclusion of Asperger Syndrome and PDD-NOS, increased awareness and improvements in case identification can produce increases in frequency of ASD reported when data were adjusted according to year of birth, age at identification or a specific time point. Inarguably, it is evident that ASD is not as rare as earlier thought to be.

While studies have been conducted to elucidate the symptomatology and associated presentation of the disorder, more needs to be done in terms of understanding its etiology. It is now widely accepted that ASD is a neuro-developmental disorder after studies demonstrated strong heritability of autistic traits in families, possible brain abnormalities associated with the disorder as well as genetic links. Although increasing evidence is pointing to a biologically based explanation for ASD, the specific causal determinants have yet to be established. Many have suggested that the issue may be more complex than anticipated and there may not be one sole genetic component responsible for the disorder. With the absence of a concrete and objective biological marker of ASD, the diagnosis of the disorder remains dependent on observable behavioral indicators.

Nonetheless, the importance of an accurate and early diagnosis cannot be over-emphasized. It provides answers to explain the difficulties and behaviors of the child, and dissipates parents' anguish and stress. It is the first step for parents to understand their child and henceforth allows them to deliver appropriate guidance and support in the child's development. The family can also be provided with adequate advice on the child's education and management. A diagnosis is also crucial for the individual to gain access to appropriate medical care, services and treatment. Many studies have argued for the benefits of early diagnosis on prognosis (Charman & Baird, 2002). Yet

many children with ASD remain undiagnosed during their early years or experienced a delay in receiving a diagnosis after parents noted abnormalities in development (Young, Brewer & Pattison, 2003). Howlin and Moore (1997) conducted a survey with more than 1200 families in the United Kingdom and found that most children were undiagnosed until they were 6 years old. Goin-Kochel and colleagues (2006) surveyed parents who reported consulting on average 4 to 5 clinicians before a diagnosis was established for their child. Understandably, 40% of the parents surveyed were dissatisfied with the diagnosis process. The figure is a conservative estimate as the study sampled parents' opinions and feedback via the internet whereby parents who are less internet savvy and perhaps less resourceful and who may experience greater obstacles to access professional diagnostic services are not included in the study.

Efforts have been made to improve the diagnostic process. A key element in clinical practices guidelines established across different countries is the recommendation to implement screening and surveillance in the community and as part of medical and developmental routine check-ups (e.g. the Autistic Spectrum Disorders – Best Practice Guidelines for Screening, Diagnosis and Assessment (California Department of Developmental Services, 2002), National Autism Plan for Children (NAPC; The National Autistic Society, 2003) and New Zealand Autism Spectrum Disorder Guideline (Ministries of Health and Education, 2008). A number of screening instruments have been developed to aid this process. When a formal evaluation is warranted, i.e. a child is identified to be at-risk; the clinician can also utilize more comprehensive evaluation tools to complement the assessment and diagnosis. A review of the current screening tools and diagnostic framework are presented. Limitations, practical factors and future directions are also discussed.

Diagnostic Framework based on the DSM

The DSM-IV-TR requires specific impairments in at least two criteria in the area of reciprocal social interaction, one from the area of communication skills and another from the area of restricted repetitive and stereotyped behaviors. At least six criteria must be met in these three areas to warrant a diagnosis of Autistic Disorder. Delays or abnormal development in at least one of these areas must be present before the child is three years old. A child may be diagnosed with Asperger's Disorder when he satisfies six criteria in the three areas but did not present with delayed development in cognitive ability, language, self-help skills. A child who present with significant impairments in social interaction, communication skills or restricted and stereotyped behaviors but did not meet the criteria for Autistic Disorder or Asperger's Disorder may be diagnosed with Pervasive Developmental Disorders – Not Otherwise Specified (PDD-NOS). However, as stated in the DSM-IV-TR and as evident in the application of the diagnostic criteria, the manifestation of ASD symptoms vary significantly in each individual. The impairments are also compared relative to the individual's developmental and chronological age. Hence, children of different ages present with different combinations of symptoms in the three different areas to different levels of severity which all adds to the complexity of the disorder. Despite high consensus between the two traditional diagnostic systems, i.e. the DSM-TV-TR and the International Statistical Classification of Diseases and Related Health Problems – 10th edition (ICD-10; World Health Organization, 1992), the variation in presentation of ASD symptoms highlights diagnostic issues intrinsic to the definition of the disorder and the difficulties in establishing diagnosis accurately. Formal diagnostic criteria and systems are continuously being refined as more information is gathered from the understanding of individuals that were diagnosed previously. This cyclical process reinforces the need to continuously re-evaluate and refine the assessment of ASD especially in terms of diagnostic criteria and procedures.

In addition, diagnosis process is challenging not only because individuals on the spectrum display varying presentation in behaviour on the diagnostic criteria. Individuals on the spectrum also vary in their language, cognitive, and social profile and levels of severity. Their behaviours and profile may also change over time as they grow older (Charman & Baird, 2002). The developmental trajectory for children with ASD is still elusive although children diagnosed with PDD-NOS is more likely than children diagnosed with autism to improve over time (Lord & Luyster, 2006). Diagnoses achieved at age 2 remain reliable over time when assessed by experienced clinicians.

Given the complex nature of the disorder, the DSM-IV-TR and the ICD are invaluable guides to the clinicians in diagnosing the child or individual suspected to have ASD. Klin and colleagues (2000) examined the validity and reliability of the DSM-IV guidelines by comparing the assignment of diagnostic labels made by different clinicians across multiple sites. 977 diagnostic cases were assessed on the DSM-IV, of which 83% of the assessment involved at least one experienced clinician and at least 37% received ratings by at least 2 experienced clinicians. Assessors were from a wide range of professional background such as psychiatrists, psychologists, speech and language pathologists, social workers and nurses. They found that experienced clinicians displayed excellent inter-rater reliability in determining autism versus non-autism ($k=1.00$), autism versus PDDs ($k=.94$), and autism versus PDD-NOS and Asperger's Disorder ($k=.85$). Inexperienced clinicians had lower rates of agreement with $k=1.00$, $k=.79$ and $k=.41$ respectively. Evidently, the main issue lies with distinguishing autism from other pervasive developmental disorders. In addition, DSM-IV serves as an important guide for the inexperienced clinician; diagnostic reliability is poor ($k=0.34$) when strategy used by the inexperienced clinician is *clinician judgment*, than when DSM-IV criteria is used ($k=.59$). The study aptly points out the importance of the clinician's experience in the diagnostic process. However, it must be noted that the authors compared diagnosis between clinicians with the experienced clinician's diagnosis as the benchmark instead of comparing with a rating scale or consensus diagnosis. This can introduce bias in the classification of cases. In addition, the study can only conclude the usefulness of DSM-IV as a guide to improve diagnostic reliability for inexperienced clinicians instead of the accuracy of diagnosis based on the criteria.

As Lord and Risi (1998) pointed out, conceptual shortcomings remains in the DSM criteria although is a useful guide for diagnosing ASD. The criteria overlap and are vague in their descriptions. There is no objective and fixed behavior marker, whether in absence or presence, in individuals with ASD although the pattern of deficits is similar. They suggested a multi-axial diagnostic system to capture the different profile and severity of impairment on different domains or to delay the age of confirmation of the diagnosis (from age 3 to 5) to improve diagnostic stability. Ratings scales and standardized instruments can facilitate the information collection process in addition to consensus with clinical judgment to arrive at a diagnosis. A working diagnosis can also be used instead when a young child (less than 3 years old) shows significant difficulties and this should be complemented with follow-ups and reevaluation.

In sum, the development and continuous refinement of the DSM criteria is helpful to the clinician in their clinical judgment and formulating a diagnosis. However, the effective use of the DSM still relies greatly on the expertise and experience of the clinician.

Defining the Autism Spectrum Disorder – Categorical vs. Dimensional Approach

Increasingly, researchers are considering the differential classification of ASD into sub-types to enhance understanding of the disorder and improve diagnosis specificity. Results so far are inconclusive although sub-groups have been identified consistently. Wing and Gould (1979) first suggested the presence of three subtypes of autism: *aloof*, *passive* or *active-but-odd* based on social communication styles. However, these subtypes do not correspond to diagnostic categories. A review conducted by Beglinger and Smith in 2001 summarized the findings of studies that examined sub-typing issues. Two types of classification approaches have been used: categorical and dimensional; which is also the focus of much debate. Different factors were also investigated such as a focus on social communication, cognitive/developmental and adaptive level, biological and also through statistical (factor or cluster analysis) determination. A variety of measures ranging from clinical observations to rating scales to characterize behaviours were also employed in these studies. As such, although most studies typically yielded two to four sub-types, interpretation of these findings is problematic. For example, Prior and colleagues (1998) examined behavioral characteristics and developmental profiles of 135 children diagnosed with Asperger's Disorders, high-functioning autism (HFA) and PDD. The participants were classified into groups based on their scores on various scales and checklists and these were subjected to cluster analysis. Three clusters, namely autistic-like, Asperger-like, and mild PDD or PDD-NOS were obtained. However, the differentiating variables appear to be related to abilities levels. Language delay or deviance did not contribute to differences between clusters. This is worrisome as the main difference between Asperger's disorder and autism on the DSM-IV-TR was the absence of language delay. It should be noted however, that only participants who are 'high-functioning' are included in the sample.

On the other hand, Constantino, et al. (2004) examined the profile of 226 children by using cluster analysis on data from the Autism Diagnostic Interview-Revised (ADI-R; Rutter, Le Couteur, & Lord, 2003) and principal component factor analysis on data from the Social Responsiveness Scale (SRS; 2005) and found no evidence of sub-types. Instead they described a single continuous factor of ASD, with varying presentation in individuals due to different degree of impairments across three domains of social, communication and repetitive or stereotypic behaviors. Reciprocal social behavior deficits were thought to be causally related to the symptoms in the other two domains. Notably, the study included children with deficits ranging from severe to mild, encompassing the whole spectrum of ASD.

The discrepancy in outcome between the above two studies aptly illustrate the impact of different methodology in sampling and recruitment and different measures used in different studies. Comparison and validation of differences between sub-groups is difficult. Many of the sub groups appear to reflect personality differences, onset differences, functioning level and presence of associated co-morbid symptoms. Failures to account for current and developmental symptoms of ASD also have implications for movement of cases between sub-types as presentation of the individual may change over time. Importantly, the choice of statistical analysis points to an underlying issue in research on sub-typing - factor or cluster analysis relied on the investigator to determine the variables to input, i.e. the result of the sub-typing process is heavily influenced by the approach and perspective of the investigator.

Beglinger and Smith (2001) proposed a dimensional model to conceptualize ASD and the subgroups within the disorder. Their model places the three main domains based on the DSM-IV criteria separately on their own axis but with reference to a single severity continuum. These axes are in turn divided into five cognitive levels (normal, IQ above 70, 60 - 70, 50 - 60 and below 50).

Four subtypes are hence demarcated. However, although Beglinger and Smith strived to integrate their review findings into one coherent model, membership in a subtype of the model does not explain the profile and membership of the individual. An over-emphasis on cognitive functioning and categorical overlap between cognitive functioning and behavioral characteristics of ASDs can confound the model's effectiveness to track improvement of the individual over time and also have implications for recommendations for treatment.

Georgiades et. al (2007) proposed a multidimensional model to describe the ASD phenotype. They analyzed the developmental and behavioral profile of 209 children via factor analysis and derived a three factor model consisting of social-communication domain, inflexible language and behavior and repetitive sensory and motor behavior, independent of cognitive and adaptive level of functioning. Compared to the traditional DSM categories, this model allows for a dimensional rating on each of the domains to provide an estimate of severity of impairment. Similarly, Ingram, Takahashi and Miles (2008) subjected phenotype data from 812 participants to taxometric analysis and arrive at seven phenotype profile in ASD. They suggested the presence of categorical subgroups based on social interaction/communication, intelligence and essential/complex physical attributes whereas adaptive functioning, insistence on sameness, repetitive sensory motor actions and language acquisition lies on continuous dimensions.

Evidently, the issue is far from resolved. Further investigation and better documentation of the phenotypic presentation of individuals with ASDs, the relationship between the different 'subtypes' and developmental process will be required (Volkmar, State & Klin, 2009). Longitudinal and outcomes studies will also be important to understand changes in presentation and response to treatment. Well validated instruments are necessary to collect accurate and comprehensive symptomatology of ASD so as to better define and diagnose the disorder.

Screening instruments

Early diagnosis of ASD facilitates earlier intervention and lead to better outcomes. The identification of children with ASD usually requires three steps of investigation: identification of at-risk children in the community, screening of ASD in these at-risk children, followed by in-depth evaluation and diagnosis of children suspected to have an ASD. The debate is at which point ASD-specific screeners should be applied. While some advocates for ASD-specific screeners to be systematically included during developmental surveillance for all children (Johnson, et al., 2007), the recommended procedures appears to be impractical for primary care providers and may not be cost-effective for implementation. Others acknowledged the ability of primary care providers to identify children who show deviance in their development and recommend ASD-specific screeners to be applied on these children who have been determined to be at-risk (Filipek, et al., 1999, 2000).

Much attention has been paid to the development of ASD-specific early screening and assessment tools. These instruments are usually rating scales, either completed by parents or caregivers or administered in the form of clinician's interviews. Some may include observations of the child. They may differ in their coverage of the symptoms of ASD as they may have been developed for different intentions and purposes (e.g. population screening, at-risk screening, and other co-occurring problems). The age of child for which the screener is to be administered to also varies (Johnson, et al., 2007; Norris & Lecavalier, 2010; Oosterling, et al., 2009). Screening instruments are easy to administer so they can assessed a greater number of children in a shorter period of time. They can be easily applied to a variety of settings at a lower cost. However, they are subjected to

subjective judgments of the rater and are limited in the depth of the information collected. In addition, these screening instruments are used for a variety of purposes, such as confirming diagnosis and screening criteria for research participation. Yet, research on these instruments is relatively lacking in terms of reliability, validity and generalizability across different samples and in comparison to each other (Norris & Lecavalier, 2010; Oosterling, et al., 2009).

Norris and Lecavalier (2010) review the literature on ASD-specific rating scales for children more than 3 years old, in line with the diagnostic guidelines of DSM-IV-TR and ICD-10. Instruments with published diagnostic psychometric validity and were examined in at least one study in a peer-reviewed journal were included. As the authors focused on screening accuracy, only 20 studies and five scales namely, the Social Communication Questionnaire (SCQ; Rutter, Bailey, & Lord, 2003) – 11 studies, Gilliam Autism Rating Scale/ Gilliam Autism Rating Scale-Second Edition (GARS/GARS-2; Gilliam, 2006) – 5 studies, Social Responsiveness Scale (SRS; Constantino & Gruber, 2005) – 2 studies, Autism Spectrum Screening Questionnaire (ASSQ; Ehlers, Gillberg, & Wing, 1999) – 1 study; and the Asperger Syndrome Diagnostic Scale (ASDS; Myers, Bocks & Simpson, 2001) – 1 study, were identified in their review.

The 11 studies examining SCQ were disparate in the range of ages of children sampled (from 2 to 40 years), compared different diagnostic labels (ASD vs. Non-ASD vs. Autism vs. other ASD) and confirmed diagnosis with varied combination of different means (clinical evaluation, ADI/ADI-R, Autism Diagnostic Observation Schedule (ADOS; Lord, Rutter, DiLavore, & Risi, 2002), parent report and school classification), all of which interpreting an overall accuracy difficult. Nonetheless, the SCQ demonstrated good sensitivity ($>.74$) and relatively lower specificity ($>.54$) when used with children at least 4 years old. It is more likely to miss children below age 4 and higher-functioning children and is less accurate in differentiating children with a language disorder. In the most comprehensive validation study conducted by Chandler and colleagues (2007) employing stringent ascertainment of diagnosis and a wide range of non-ASD controls, the SCQ demonstrated excellent sensitivity ($>.88$) and specificity ($>.72$) when distinguishing children with autism from Non-autism and children with ASD from non-ASD. In addition, the SCQ achieved 89% agreement when it was compared to diagnostic outcomes based on the DSM-IV-TR (Goin-Kochel & Cohen, 2008).

GARS-2 was not significantly different from GARS and both instruments were evaluated together in Norris & Lecavalier's (2010) review. Out of the five studies that had examined the GARS/GARS-2, four of them found GARS to have poor sensitivity ($<.53$). It tends to under-diagnose children with autism. Notably, Lecavalier (2005) demonstrated poorest sensitivity of the GARS (.38) when he administered the GARS to a sample of 284 children with ASD who were receiving ASD-specific educational services. However, the study had set an Autism Index score cut-off of 90 which is much higher than the 85 recommended in the manual. The four studies also lacked control groups in their comparisons. Eaves et al. (2006) administered the GARS/GARS-2 on 111 ASD and 23 Non-ASD children and set the cut-off at 85. He found good sensitivity of .83 and specificity of .68. Despite inconsistent empirical findings, GARS/GARS-2 is still widely used in community and clinical settings.

Only two studies evaluated the SRS but both demonstrated good sensitivity ($>.75$) and specificity ($>.67$). Both studies had compared SRS classification against a combination of clinical judgment, ADI-R and ADOS and included a control group. However, despite the promising results, SRS

focuses heavily on the social aspects and more investigation is needed to establish its accuracy and usefulness in differential diagnosis of children with ASD.

With only one study each on the ASSQ and ASDS, the instruments would require further empirical evaluation. Although Ehlers et al. (1999) reported fair sensitivity ($>.62$) and specificity ($>.90$) with the ASSQ, the sample size was small. The ASDS lacked published information on its sensitivity and specificity and its normative data was inconclusive.

In sum, Norris and Lecavalier (2010) highlighted the necessity for independent validation and sound empirical evidence for the use of these ASD-specific screening instruments. Inclusion of comparison control groups and diagnoses ascertained with more stringent criteria is also vital to establish the accuracy of these instruments. In addition, few studies have compared the properties and accuracy of different screening instruments in a single sample and even lesser has examined these instruments in actual clinical or practical setting. Oosterling et al. (2009) compared the SCQ with the Early Screening of Autistic Traits Questionnaire (ESAT; Swinkels, et al., 2006) alongside general instruments for screening other developmental difficulties in a clinical setting whereby participants were referred for concerns of ASD. She found both instruments to have less than satisfactory discriminating power between ASD and Non-ASD. Although the sensitivity of the ESAT and SCQ was high (range from .83 to .89), both instruments demonstrated only poor to fair positive predictive, negative predictive power and Area Under Curves. The ESAT showed especially poor specificity (.09 to .15). Other factors to consider in the development and use of these screeners includes the coverage of the symptoms (lower to higher functioning profiles), capturing the level of functioning or severity of the children and sensitivity to changes or development of the children over time. As Bristol-Power and Spinella (1999) pointed out, the work on accurate screening and early identification of children with ASD is 'a work in progress' and more research in this area is still very much needed.

Current Diagnostic Protocol

Current diagnostic protocol involves a multi-disciplinary approach that involves professionals with different areas of expertise, parents and caregivers and educational providers (Fillipek et al., 2000; Kabot, Masi & Segal, 2003; Scahill, 2005). It is most ideal that the evaluation be performed by professionals who specialize in the field, is made based on clinical and DSM criteria, and complemented with a standardized diagnostic instrument consisting of parent/caregiver interview and direct behavioral observations of the child. Following which, other associated factors though not directly related to ASD should be addressed. These include behavior issues such as hyperactivity, mental handicap, language disabilities and mood concerns. An expanded evaluation may be warranted, for example, neurological and medical examination to investigate organic disturbances. Although some cases are clearly obvious, others may be more challenging to arrive at a diagnosis because of mild presentation or associated co-morbid disorders, but these practice standards are recommended to assure adequate and appropriate treatments following diagnosis.

Although there is no one single instrument that is the most effective in diagnosing ASD, the choice of an appropriately validated tool with acceptable psychometric properties can assist the clinician to collect relevant and important information to formulate the diagnosis. It has come to be accepted that the current 'gold standard' standardized instruments includes the complementary use of the ADI-R and ADOS together with clinical judgment based on the DSM-IV-TR criteria (De Bildt et.

al., 2004; Gray, Tonge & Sweeney, 2008; Noterdaeme, Mildenberger, Sitter & Amorosa, 2002; Scahill, 2005).

The ADI-R is a semi-structured interview with the parent/ caregiver of the child to elicit a wide range of information about the child's developmental history and day-to-day behaviour of the child. It focused on three domains namely language and communication, reciprocal interactions and restricted, repetitive and stereotyped behaviours. Although used extensively in clinical diagnosis of the child, it is also used in many studies to ascertain the diagnosis of autism or as a comparison criterion in validity studies. As it obtains a large amount of information regarding the phenotypic presentation of the child, it is also used to study the dimensions or sub-typing attempts in the disorder. For example, Tadevosyan-Leyfer et al. (2003) subjected the ADI/ADI-R information of 292 children to a principal component analysis and identified clusters relating to spoken language, social intent, compulsions, developmental milestones, savant skills and sensory aversions. While the clusters are valid and relevant to the DSM-IV criteria, there appears to be overlap between them. Interestingly, fewer studies examined the psychometric properties of the ADI/ ADI-R itself. Lecavalier et al., (2006) attempted to investigate the validity of the algorithm items of ADI-R as they impact the diagnosis classification directly. The internal consistency for the social and communication domains were good but poor for the repetitive behaviours domain i.e. the ADI-R may misclassify children as Non-ASD when parents do not report sufficient repetitive behaviours of the child to meet cut-off on this domain on the algorithm.

The ADOS is a semi-structured standardised instrument to assess the individual current functioning on the domains of communication, social interaction, and play or imaginative use of materials. The ADOS had been extensively researched during phases of development and revision (Dilavore, Lord & Rutter, 1995; Lord, et al., 2000). The diagnostic algorithm is linked to the DSM-IV and ICD-10 criteria and demonstrated excellent sensitivities and specificities. Independent validation of the ADOS conducted by Gotham et al. (2007, 2008) suggested improved predictive validity, sensitivity and specificity on proposed revised algorithm. Gotham, Pickles and Lord (2009) further standardized the algorithm for a severity scale.

Practical considerations and future directions

Given that the field of ASD is relatively young, methodological issues can be expected in diagnosis of the disorder. The current 'gold standard' is not without its limitations. The ADI-R is time consuming to administer (2 to 4 hours) and the ADOS require a specific set of materials for administration. Both instruments can only be administered by trained clinicians and also relied on interpretation of parental reports and short observation periods. Bias can be introduced through denial and errors in parental reporting, or limitations in presentation of the child under observation (e.g. uncooperative, compensating behavior in assessment setting) which undermines the accuracy of the instruments.

Rosenberg, Daniels, Law, J., Law, P. and Kaufmann (2009) analyzed the trends in ASD diagnosis from 1994 to 2007 and found strong influences of evaluator preferences and time trend factor. The interpretation of diagnostic instruments, experience and conceptual differences of the clinician impacts on the diagnosis their patients received. Williams, Atkins and Soles (2008) only found a 50% agreement on ASD diagnosis between community and academic assessments. Rosenberg et al. (2008) also confirmed the influences of ethnicity, race, geographical region and preferences and access to services on diagnosis. Although the study present with methodology limitations – reliance

on SCQ to confirm diagnosis and accuracy of parental reports, and sampling via web-based registry; it highlights the practical aspects of an ASD assessment.

The influence of the clinician cannot be over-stated in the diagnosis procedure. Professional or expert advice may not always be available (Johnson, et al., 2007). When in doubt, well-intended clinician may 'over-diagnose' so that the child gets access to services stemming from a 'benefit-than-risk' concept (Skellern, Schluter & McDowell, 2005).

While this paper-pencil screening instruments continue to be developed, some has suggested turning to technology for novel and effective solutions (Bolte, Golan, Goodwin, & Zwaigenbaum, L., 2010; Goodwin, 2008; Skuse et al., 2004; Van Santen, Prud'hommeaux, Black & Mitchell, 2010). Technological advances have already been incorporated in the field of ASD with the use of internet, computerized educational and therapy products and virtual reality technology. Technology can help reduce cost of treatment and increase accessibility to resources. However, their implementation continues to require empirical evaluation. In terms of screening and diagnosis, Van Santen et al. (2010) developed a tool that evaluates the prosody production of children with ASD and found moderate classification accuracy of 75%. However, this tool was only administered and probably only suited to high-functioning and verbal children with its reliance on prosody production. Skuse et al. (2004) developed a computerised parent interview tool – Developmental, Dimensional and Diagnostic Interview (3di), to be administered by trained interviewers so as to generate symptom and diagnostic profiles. Although authors reported excellent psychometric properties, the instrument has not been extensively studied. The 3di can be criticised in its format of administration which requires the clinician to ask questions from the computer screen and it may not improve on current practices beyond automated scoring of the items.

However, the utilization of technology is a promising area for ASD diagnosis. Beside administering questionnaires or screeners via internet or computerized system and automating coding and scoring process, information gathering can be broaden when information from different sources over time can be consolidated and analyzed. This can provide an understanding of the individual's presentation and development over time as well as integrate different perspectives and opinions from various professionals in different context. The development of such a system can incorporate inputs from field experts, using their experience and opinion together with criterion acquired from standardized and validated instruments to assess the profile of the target individual, especially in the form of screening and surveillance procedures.

Technology and innovative methods of assessment can be promising in the field of diagnosing ASD. Greater interdisciplinary collaboration should be facilitated for the benefits of the ASD community.

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Cover Page

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Induction: Does Spacing Exemplars Affect Longer Term Retention?

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Abstract:

Research has indicated that memory retention for spaced repeated items is better than massed repeated items in conditions, both when the test is given immediately after the study phase, and after a delay interval. In the existing research on the spacing effect in inductive learning, the effect has only been investigated over a brief retention interval, thus providing no experimental evidence on the effect of spacing on induction over longer retention interval. In this study, we used several categories of paintings to examine the effect of spacing on induction over a brief retention interval (whereby a test was given immediately after the study phase) and a longer retention interval (whereby a test was given after a week delay). We used a mixed factorial design and included 40 participants. In both the brief retention interval and the longer retention interval conditions, spaced exemplars were learnt better than massed exemplars. These results provide the initial evidence of the spacing effect in inductive learning over longer term retention, hence have implications for educational practice. Spaced exemplars have considerable potential in improving inductive learning or category learning for longer term retention.

Introduction

It is an established experimental finding that memory retention for spaced repeated items is better than massed repeated items (e.g., Cepeda, Pashler, Vul, Wixted & Rohrer, 2006; Donovan & Radosevich, 1999; Melton, 1970). The finding of improved memory for spaced repetitions, called the spacing effect, has been documented in a broad range of memory tasks with many different types of study materials (Cepeda et al., 2006; Dempster, 1996; Donovan & Radosevich, 1999), including nonsense syllables (e.g., Ebbinghaus, 1985/1913), pictures (e.g., Hintzman & Rogers, 1973), words (e.g., Glenberg & Lehmann, 1980), sentences (e.g., Rothkopf & Coke, 1966) and faces (e.g., Cornell, 1980). The spacing effect is not only found when the test is given shortly after the study phase which measures short term memory retention (e.g., Rea & Modigliani, 1987; Toppino, 1993), but also when the test is given after a delay interval which measures long term memory retention, ranging from days (e.g., Ausubel, 1966; Cepeda et al., 2009 (Experiment 1), to months (e.g., Bahrick & Phelps, 1987; Cepeda et al., 2009 (Experiment 2a)). Clearly, long term memory retention benefits from spaced repetitions.

In inductive learning, it is generally not known whether spacing different individual exemplars apart in time aids in learning of categories. Inductive learning is essentially learning by example, whereby students derive general principles from particular exemplars. Additionally, no experimental evidence has been provided on whether the long term retention profits from spaced exemplars. Studies that investigated the effect of spacing on inductive learning have produced contradictory results. Two earlier studies reported massing as superior to spacing (Gagne, 1950; Kurtz & Hovland, 1956). Some other studies that compared exact and non-exact repetitions (e.g., Appleton-Knapp, Bjork & Wickens, 2005; Dellarosa & Bourne, 1985; Glover & Corkill, 1987; Melton, 1970), and research on motor learning which involves learning complex motor skills (Wulf & Shea, 2002) provided less direct evidence that massing facilitates

induction. Interestingly, three later studies showed the opposite findings, that induction profited from spacing (Kornell & Bjork, 2008; Vlach, Sandhofer & Kornell, 2008; Zulkipli, Mc Lean, Burt & Bath, 2011). In our study, we conducted three experiments to further investigate the spacing effect in inductive learning, using paintings, visually presented texts and aurally presented texts respectively. Interestingly, we found the spacing effect in all three experiments – the first experiment which was a replication of Kornell & Bjork's (2008) experiment produced results that validated their findings, and the later two experiments with text provided an experimental evidence that the spacing effect could also be generalised to text in inductive learning (Zulkipli, Mc Lean, Burt & Bath, 2011).

Not only is there little research on the spacing effect in inductive learning to date, the effect also has only been investigated over a brief retention interval (e.g., Gagne, 1950; Kurtz & Hovland, 1956; Kornell & Bjork, 2008; Vlach et al., 2008; Zulkipli et al., 2011). In a typical study that tests the spacing effect in inductive learning, participants are asked to learn exemplars from several categories which are presented with a variable degree of spacing between exemplars, and at the end of the session, induction is tested on a set of novel exemplars from the same categories learnt in the study phase. Previous studies that found the spacing effect in inductive learning tested the effect over brief retention interval, whereby the test was given immediately or shortly after the study phase (i.e., Kornell & Bjork, 2008; Vlach et al., 2008; Zulkipli et al., 2011). Testing the spacing effect over a brief retention interval seems to measure induction for short term retention. Whether or not spacing exemplars apart in time affect longer term retention when stimuli are not identical, is not known. Thus, the aim of the present study was to find out the effect of spacing on longer term retention in inductive learning.

Methodology

Participants: Participants of the experiment were 40 students from an introductory psychology class from the University of Queensland, whom received a course credit for their participation.

Materials: The materials were 120 paintings from 12 different artists. Seventy-two paintings were used in the presentation/study phase (6 paintings per artist), and forty-eight paintings were used in the test phase (4 paintings per artist). All the painting files were either landscapes or skyscapes. The paintings were in the format of jpeg file and were resized to fit into a 19 cm x 29 cm rectangle on the computer screen.

Design: The design of the experiment was a 2 (presentation style: spacing vs. massing) x 2 (retention type: brief retention interval vs. longer retention interval) x 4 (test block: Block 1, Block 2, Block 3, Block 4) mixed-subjects design. Presentation style and test block were varied within participants, whereas retention type was varied between participants. There were 3 steps involved in the experimental manipulation: presentation (study) phase, distractor task and test phase. In the presentation phase, 72 paintings by each of six of the artists were presented consecutively (massed), whereas the paintings by each of the other six artists were intermingled with paintings by other artists (spaced). They paintings were arranged in 12 learning blocks (6 blocks of for massed presentation; 6 blocks for spaced presentation). The order of the blocks was MSSMMSSMMSSMMSSM (M for massed; S for spaced). The artists were counterbalanced across four versions of the block. For the distractor task, participants were asked to count backward by 3s starting from a given number for 15 seconds, and type the numbers in the given box on the computer screen. In the test phase, 48 new paintings by the artists were arranged in 4

test blocks. Each block consisted of one new painting by each of the 12 artists, presented in random order.

Procedure: Participants were randomly assigned to either the brief retention interval or longer retention interval conditions. Participants first were instructed about the nature of the experiment that they are going to do, before entering the presentation phase that was subject to experimental manipulation. In the presentation phase, participants were asked to study the 72 paintings by twelve artists. Each painting was shown on a computer screen for 3 seconds, with the last name of the artist displayed underneath. When participants studied the paintings, they were asked to learn to recognize which artist painted which picture based on the artists' style. Next, participants were asked to do a distractor task. Later, participants were shown 48 new paintings in the test phase, which they had not seen before, and they had to identify who painted each one. For the test phase, participants in the brief retention interval condition were tested immediately at the end of the distractor test, whereas participants in the longer retention interval condition were tested a week later. During the test phase, participants were shown one painting at a time on a computer screen, with 13 buttons below the painting. Twelve of the buttons were labelled by the artists' names, and one button labelled "I don't know". Participants responded on who they thought had created each painting by clicking their computer's mouse on one of the thirteen buttons. Feedback was given after each response. If participants clicked on a correct artist name for each displayed painting, the word "correct" will appear on the middle of the computer screen, and if they got it wrong, the correct artist's name would be presented on the computer screen instead. Participants completed the test phase at their own pace. Participation in the experiment took approximately 30 minutes, and participants were debriefed about the experiment they had just participated in before they left the experimental room.

Results

The data were analysed with a three-way repeated measure ANOVAs. The mean proportion of artists selected correctly on the test, as a function of presentation condition (spaced or massed) and test block is plotted in Figure 1 (for brief retention interval) and Figure 2 (for longer retention interval). As is apparent from both figures 1 and 2, the advantage of spacing was significant in both conditions, $F(1, 38) = 17.43$, $p < .001$. Spaced exemplars were learnt better than massed exemplars.

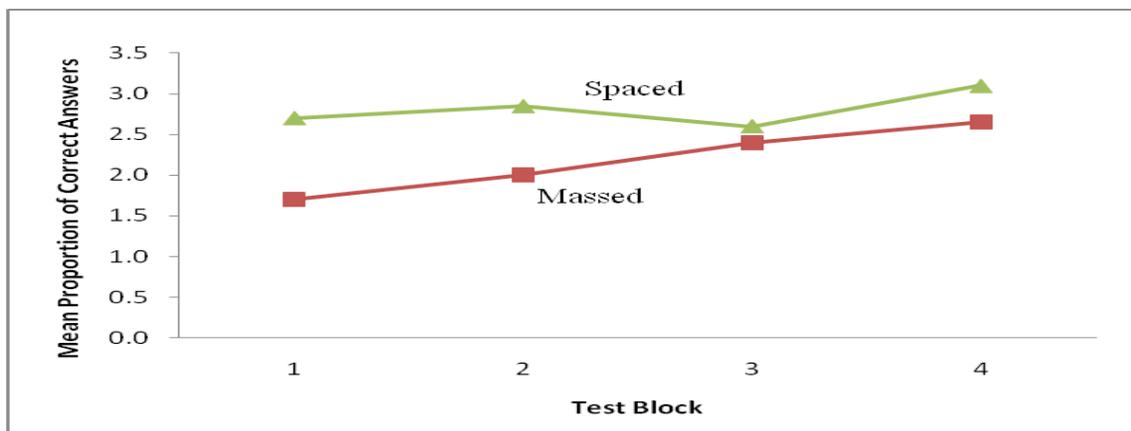


Fig. 1. Mean proportion of artists selected correctly on the test, as a function of presentation condition (spaced or massed) and test block over brief retention interval.

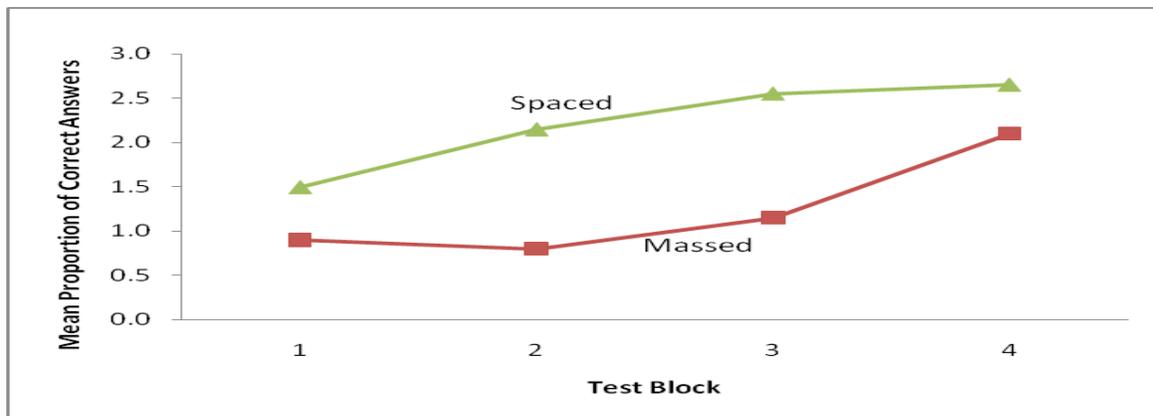


Fig. 2. Mean proportion of artists selected correctly on the test, as a function of presentation condition (spaced or massed) and test block over longer retention interval.

The main effects of retention interval and test block were also significant, $F(1, 38) = 5.29$, $p < .05$, and $F(3, 114) = 14.48$, $p < .001$, respectively. Ignoring test block and presentation style variables, participants performed better when they were tested immediately after the study phase than when they were tested after a week delay. This could be due to forgetting. With regards to the significant increase in the performance across the test blocks, this could be a result of the feedback that participants received after each test trial. Participants could have been learning from their mistakes, thus improving their performance in the next test blocks. This is consistent with findings from Kornell and Bjork (2008).

None of the two-way interactions were significant. However, the three way interaction between the variables was significant, $F(3, 114) = 2.92$, $p < .05$. This means the way massing and spacing affected performance in different test blocks depends on whether the participants were tested immediately or after a week delay.

General Discussion

Consistent with Kornell and Bjork (2008), Vlach et al. (2008), and Zulkiply et al. (2011), the present study reveals that induction profited from spacing over brief retention interval, and most importantly it provides initial evidence that induction still benefits from spacing even after a week delay. Even though induction was generally dropped after a week, the spacing effect demonstrated over the longer term retention condition could be attributed to the same factors that cause the effect over the brief term condition.

The first possible explanation is the possibility of massed paintings exemplars been given less attention compared to spaced paintings exemplars. During the study phase, the massed paintings exemplars were appearing one after another, and this may have influenced the participants to perceive the massed categories (i.e., the artists whose paintings were massed throughout) as easy, causing them to not really bother to massed exemplars, hence give less attention to them. In contrast, the spaced presentation could have made it a little bit harder for the participants to learn the spaced categories (i.e., the artists whose paintings were spaced throughout), resulting in the spaced exemplars been given more attention to by the participants. This finding is in parallel with the Deficient Processing theory which states that massed repetitions receive less processing than their spaced counterparts (Dempster, 1989). A second possible explanation for the spacing effect in inductive learning is termed consolidation theory. According to this theory,

consolidation of the second massed presentation interferes with consolidation of the first presentation (Cornell, 1980; Hintzman, 1974). It is also proposed that the transfer of information from a relatively transient state in memory to a more permanent retrieval state in the memory takes time, and that this process can be interrupted if a repetition of the to-be-remembered information occurs prior to consolidation (Landauer, 1969). Thus, it is possible that the amount of consolidation for the two repetitions of a particular category of exemplars (i.e., a particular artist name) that were massed would be less than the two repetitions of a particular category of exemplars that were spaced, causing better learning and retention for spaced exemplar categories even after a week delay.

The spacing effect could also be caused by the induction and discrimination processes. Unlike the artists in the massed presentation, the artists in the spaced presentation were interleaved. This method of presentation might have facilitated comparison and contrast as well as, fostered and enhanced discrimination learning, allowing participants to notice the different characteristics among the paintings exemplars, and aid them to understand the style of each artist. Such a juxtaposing effect, however, did not exist in the massed condition. In addition, due to the nature of the spaced schedule itself, spacing provides more time for forgetting, and forgetting promotes abstraction (Vlach et al., 2008). Thus, it is argued that the gap between successive presentations of two spaced paintings exemplars from the same artist might have allowed time for participants to forget surface characteristics of each painting exemplar, so when the artist was presented again, it contributed to an abstract representation of the central features of the artist's style (e.g. the colours used across all paintings which are different among the artists). However, due to no time interval between the presentations of two massed paintings exemplars, participants could be more likely to remember specific characteristics of each of the previous presentations of a given exemplar as they were presented. It is argued that the abstract memories tend to be more durable than the concrete memories, thus at testing, the more abstract representation engendered by spacing would be both advantageous and beneficial (Brainerd & Reyna, 2002)

Despite the finding that induction profited from spacing in both retention interval conditions, the effect of spacing over brief retention interval is greater than over longer retention interval (see figures 1 and 2). Comparing the mean scores of test block 1 between the two conditions, there is a drop in participants' performance after a week delay (score decreases from 2.7 to 1.5), which is possibly due to forgetting. Participants' memory retention on the spaced and massed artists might have been affected by the distractions that happened during the one week gap between the study phase and test phase, hence reducing the amount of information initially encoded during the study phase. Nevertheless, at test, as the participants went through the test blocks, they seemed to return to a learning context, as they saw a series of novel paintings exemplars from the same 12 artists learnt in the study phase, and for every response they made to each test trial (i.e., each painting), a feedback which indicates whether or not they got the artist name correct was displayed on the computer screen. If they got it wrong, the correct name of the artist who created the painting appeared. Such a test with feedback allowed for relearning to happen, and apparently, participants' performance increased over the test blocks in both brief term retention and longer term retention conditions. According to context-reinstatement, memory is best when the situation during study closely resembles the situation during test (Fisher & Craik, 1977). The context during the study phase seems to be reinstated in the test phase. Returning to a learning context may allow participants to use context information as a source of memory cues to enhance participants' memory about the exemplar categories.

Additionally, comparing participants' performance on spaced paintings exemplars as in Figures 1 and 2, it is noted that the mean score of test block 4 for the longer retention interval condition (i.e., 2.65) is approaching the mean score of test block 1 for the brief retention interval condition (i.e., 2.70). This pattern of results seems to describe a ceiling effect, whereby it is likely that no further score could be reached upon completing test block 4 in the longer retention interval condition. It is argued that the tests with feedback may be beneficial than restudy opportunities, as they reveal which items have been sufficiently learnt and which ones require further study (Carpenter et al., 2008). In the present study, failure in selecting the correct artist for a given test trial may have resulted in the participants finding new and better ways of encoding the information (i.e., the artist's style). The present study only implemented one test phase, which is given either immediately or after a week delay. It is argued that if induction is tested regularly in a series of continuous tests for instance after 1, 2, and 3 weeks, there is a possibility for a ceiling effect to be eliminated either at the second or later test phases, and induction perhaps could be improved as well.

Conclusions

In summary, consistent with findings from Kornell and Bjork (2008), Vlach et al. (2008), and our recent study, the present study found the spacing effect over a brief retention interval. Interestingly, we also observed the effect over longer retention interval in inductive learning. Spaced exemplars were still learnt better than massed exemplars even when the test is delayed a week. Given the initial evidence from the present study, that induction profited more from spacing (and not massing) over longer term retention, a systematic approach in inductive learning or category learning could be planned and attempted by educators in order to achieve the optimal benefits of the spacing effect in inductive learning for long term retention.

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Juliet Roudini

WHAT IS PERSON CENTRED PLANNING?

We all think about, and plan our lives in different ways. Some people have very clear ideas about what they want and how to achieve it, others take opportunities as they arise. Some people dream and then see how they can match their dreams to reality.

Sometimes it is useful to plan in a structured way, and person centred planning provides a family of styles that can help do this. Person centred planning is not just about services, or disability, it is something that everyone can use to plan their lives.

Styles of person centred planning share common values and principles, and are used to answer two fundamental questions:

- Who are you, and who are we in your life?
- What can we do together to achieve a better life for you now, and in the future?

Person centred planning is not simply a collection of new techniques for individual planning to replace previous approaches. It is based on new ways of seeing and working with people with disabilities, fundamentally about sharing power and community inclusion.

"One of the most common misunderstandings of person centred planning is that is a short series of meetings whose purpose is to produce a static plan. This misunderstanding leads people to underestimate the time, effort, uncertainty, anxiety and surprise necessary to accurately support people's lives over time" John O'Brien and Herb Lovett.

The origins of person centred planning

Person centred planning may appear to be a relatively new, but its roots extend over twenty-five years, emerging from progressive changes in thinking about better ways to include people with disabilities in society.

In the wider community, person centred planning has been developed from philosophies underpinning:

- The social model of disability and the disability movement that demands a shift in the balance of power between disabled people and the services on which they rely.
- The inclusion movement that calls for a passionate commitment to diversity and for intentional community building.

Within services, person centred planning has been influenced and stimulated by:

- Normalisation and social role valorisation that insists on people with disabilities having a quality of life and position in society which is equal to and would be valued by non-disabled people.
- The accomplishment framework that focused services on five areas to improve peoples' quality of life within their community.
- Dissatisfaction with earlier planning approaches leading people to develop creative ways of fully including people with learning disabilities.
- Best practice in social work assessments which emphasised the assessor's expertise in negotiation and problem-solving and imaginatively designing solutions using available service and community resources

Person centred planning is not a fad from America. It has evolved from excellent practice and progressive thinking in communities and services.

The values underpinning person centred planning
Person centred planning is:

Person centred planning is not:

a powerful way to support positive change

a cure-all

a different way of working together

just coloured posters instead of paperwork

a better way to listen and respond to people

just a more sophisticated assessment

different for different people

a standard package

an invitation to personal commitment

a service routine

working towards inclusive communities

just a better way to put together service packages

for anyone who wants it

just for those who are 'ready'

All means all

Person centred planning is rooted in the belief that people with disabilities are entitled to the same rights, opportunities and choices as other members of the community. Disability does not justify poor treatment, low standards, injustice or oppression. Person centred planning starts from an

assumption of common decency: 'What is a decent way for our society and our services to treat someone of this person's age, gender and culture in terms of their living arrangements, security and autonomy?'

Traditionally, services have gathered people with the highest support needs or the most challenging behaviour into large segregated facilities, while allowing those who require less support to live more independently in the community. Professionals have 'matched' people to different services along a continuum: the more support people are seen to require, the more strangers they have to

live with and the more differences there will be between their home life and the lives of other people in their community

Person centred planning challenges the whole idea of batching people together on the basis that they are perceived as needing a similar type or level of assistance. It challenges the assumption that because someone needs a lot of help it is acceptable for them to have an impoverished or restricted life.

'All means all' means that it is morally unacceptable for people to be rejected by community services or excluded from community participation on the basis of the level or type of support they need. This means that people who practise person centred planning place a high value on loyalty and sticking with people over time, even when they test to the limit our capacity to accept, believe in and include them.

Everyone is ready

The focus of professional effort in the lives of disabled people has traditionally been on the person's impairment. People are channelled into different services depending on the category of their impairment, for example, learning difficulty, sensory impairment or loss of mobility. This

leads to a process of assessment which analyses and quantifies the impairment and its impact on the person's ability to undertake a range of tasks. This assessment results in a description of the person in terms of what she cannot do: her deficits. Professionals then set goals for people to try and overcome these deficits. We have tended to focus on what people cannot do, spending years trying to teach people to clean their teeth or tie their shoelaces, to become more 'independent'. The most serious consequence of this is that people's participation in ordinary community life is then seen as dependent on their success in achieving these goals. People are only given opportunities when staff feel they are 'ready'. They have to earn the right to be part of their own community. People who expected services to help them to manage their own lives have instead become trapped in a world where others make judgements about their future.

Person centred planning starts from the other end. It asks 'How do you want to live your life? What would make sense for you?' before looking at 'How could we work with you to make this possible, given your particular situation and the things you need help with?'. It challenges the traditional notion of 'independence' in two ways. Firstly, it sees independence in terms of choice and control rather than physical capacity to carry out particular tasks.

"Real independence is nothing to do with cooking, cleaning and dressing oneself. If you ask me what is my experience of being independent, I would not automatically think about self help skills but of being able to use my imagination to create fantasy, of enjoying music and drama, of relishing sensual pleasures and absorbing the natural life around me.". John Corbett.

Person centred planning is not the same as...

Person centred planning is not synonymous with "needs led" or "client centred" or "holistic" assessment or care planning. These start with the individual but are not necessarily person centred. The definition of "needs" used in care management, for example, is a "system construct". Needs are defined as those things for which the person is deemed eligible according to interpretation of policy and the resources of the local social services department. Person centred planning goes beyond this definition of needs, considers people's aspirations, is not limited by entitlement to services and is not necessarily dependent upon professional involvement. Person centred planning is concerned with the whole of someone's life, not just their need for services.

Jean and her daughter Lucy prepared for Lucy's transition review by doing an Essential Lifestyle Plan. Great effort went into producing a really detailed picture of what matters for Lucy. Jean left the meeting feeling crushed and physically sick. Though several people at the meeting were really enthusiastic about the plan and said how helpful it was for them as professionals to think about their contributions to Lucy's future, the social worker was apologetic. She said " I'm sorry we don't recognise ELP. We don't have the resources to implement it. We can only meet needs not wants" The social worker was confusing assessment for council services and broader life planning. Jean and Lucy did not expect social services to deliver everything in the plan. They wanted the professionals to listen to what was important to Lucy and her family and work out what they could do to contribute towards achieving these things. They also wanted help with problem solving other sources of support and resources.

What can person centred planning be useful for?

- Help people to work out what they want in their lives

- Clarify the supports needed for people to pursue their aspirations
- Help to shape the contributions made from a range of service agencies to ensure these are effective in helping people meet their goals
- Bring together people who have a part to play in supporting people for joint problem solving
- Energise and motivate people based upon better understanding of and commitment to a person

Show service agencies how they can adjust their activities at both operational and strategic levels in order to better support people to achieve their goals

It is equally possible to be "client centred" or "holistic" without being person centred. The key issues here are about who decides what is important in planning and the power balance within it. Professionals can undertake planning which is centred on an individual but where the focus is exclusively upon professional concerns and judgements.

"Information gained from technical assessments can be helpful, but only in the context of a knowledgeable account of a person's history and desired future", John O'Brien and Herb Lovett.

Key features of person centred planning

Person centred planning has 5 key features:

1. The person is at the centre

Person centred planning is rooted in the principles of shared power and self-determination. Built into the process of person centred planning are a number of specific features designed to shift the locus of power and

control towards the person. Simple practical examples of this are that as far as possible the person is consulted throughout the planning process; the person chooses who to involve in the process and the person chooses the setting and timing of meetings.

2. Family members and friends are partners in planning

Person centred planning puts people in the context of their family and their community. It is therefore not just the person themselves that we seek to share power with, but family, friends and other people from the community who the person has invited to become involved. Person centred planning starts from the assumption that families want to make a positive contribution and have the best interests of the person at heart, even if they understand those best interests differently from other people.

3. The plan reflects what is important to the person (now or for the future), their capacities, and what support they require

In using person centred planning we seek to develop a better, shared understanding of the person and their situation. The planning process can be powerful - people's views change, new possibilities emerge, alliances are created, support is recruited, and energy is gathered and focused. The resulting person centred plan will describe the balance between what is important to the person, their aspirations and the supports that they

4. The plan helps build the person's place in the community and helps the community to welcome them. It is not just about services, and reflects what is possible, not just what is available.

The focus of person centred planning is getting a shared commitment to action, and that these actions have a bias towards inclusion. In this context services are only part of what people want and need; and

planning what services you need comes after planning what sort of a life you want.

5. The plan results in ongoing listening, learning, and further action. Putting the plan into action helps the person to achieve what they want out of life.

Person centred planning is not a one off event. It assumes that people have futures; that their aspirations will change and grow with their experiences, and therefore the pattern of supports and services that are agreed now will not work forever. Person centred planning is a promise to people based on learning through shared action, about finding creative solutions rather than fitting people into boxes and about problem solving and working together over time to create change in the persons life, in the community and in organisations. To fulfil this promise we need to reflect on successes and failures, try new things and learn from them and negotiate and resolve conflict together.

Different styles for different purposes

There are several different styles of person centred planning that can help people to achieve different purposes. Each style is based on the same principles of person centred planning: all start with who the person is and end with specific actions to be taken. They differ in the way in which information is gathered and whether emphasis is on the detail of day to day life, or on dreaming and longer term plans for the future. The common planning styles in use in the UK include Essential Lifestyle Planning, PATH and Maps, and Personal Futures Planning. It is crucial not to divert energy into pointless debates about which is the best planning style. People should consider rather which style might be best used in which circumstances. Styles can be used to complement one another.

The purpose of a person centred plan is to achieve one or more of the following:

- 1) To develop a 'picture' of the person's desired future and describe the actions needed to move in that direction (PATH and MAPs are useful for this purpose)
- 2) To look at where the person is now, how they would like their life to change and mobilise and engage people to help the person to become a part of their community (Personal Futures Planning is useful for this purpose)
- 3) To learn and provide a single place to record, on an on-going basis:
 - What has been learned about what is important to the person and what is important for the person
 - What others are expected to know and/or do to help the person get what is important to them and what is important for them
 - The balance between what is important to the person and what is important for the person where there is a conflict between them
 - What needs to stay the same and what needs to change and who will do what (by when) in acting on these (Essential Lifestyle Planning is useful for this purpose)

Each planning style combines a number of elements: a series of questions for getting to understand the person and her situation; a particular process for engaging people, bringing their contributions together and making decisions; and a distinctive role for the facilitator(s).

PATH and MAPs focus strongly on a desirable future or dream and what it would take to move closer to that. In Essential Lifestyle Planning and Personal Futures Planning facilitators gather information under more specific headings. Particular sections - such as the section in Essential Lifestyle Planning on how the person communicates and the section in

Personal Futures Planning on local community resources - ensure that someone gathers together what is known and records this information so that everyone can use it.

People may need to focus on different areas of their lives at different times, and therefore use one planning style at one time and another at another time. We need to learn what is important to people on a day to day basis and about the future they desire. Sometimes it is important to learn about the day to day issues first, and then move on the learning about a desirable future. In other situations we need to hear about peoples dreams, and later learn about what it is important on a day to day basis.

In considering what style to use facilitators need to consider the context and resources available to the person. Whether the person has a team to support her, or lots of friends and neighbours who want to get involved or a circle of support can influence the decision about which planning style to use. If the person has a team who do not know her very well, then starting with a planning style which invests a lot of time in really getting to know the person, for example Essential Lifestyle Planning, could be a useful place to begin. If the person has family and friends or a circle who know and love her, then starting with dreams through PATH or Maps is useful.

centred planning some people were getting better lives when people listened to them closely and cared about them enough to act on what they heard, solving sometimes very difficult problems on the way. Person centred planning approaches are simply (sometimes very powerful) aids to doing this. Some people will benefit greatly using the methods of some of the well-developed styles of person centred planning. Other people might plan or start to plan in less structured, "on the move" ways like Mike and Graham

Mike had spent many years in various institutions. He has autism and a bipolar disorder. He eventually was discharged at the age of 40 into a group home with 3 people from the institution randomly chosen to " get on with each other ". He hated the home he lived in and the people he lived with. Several violent incidents at the home made him anxious and worried and he was eventually moved to another group home to share a double bedroom with another tenant and two other tenants in the home. He again had nothing in common with the other 3 men. When I met him he was confined to his room, indeed his bed, and refusing to participate in any outside activity. He was depressed and unwilling to engage in any planning about his future. At the time a property became available to the charity that I work for as a short life property on lease from the Local Council. It needed a lot of work doing to it and, as it was only a short-term lease, we had much debate about whether we should take on the lease.

Mike agreed one day to come for a walk with my colleague and me to see this house. We had no intentions of Mike moving to the home but thought it would be good to get him away for the day from the place he was living. Mike went to the house with us, sat in a room with no television, bed, carpet and with a large hole in the wall and roof, and said he would like to stay there forever. That is how unhappy he was with his previous accommodation and life. His previous tenancy was at a place where he shared with people he did not like and which was run on quite an institutional basis with regular, stipulated meal times, bed times and personal support times. The place was attractively furnished and well maintained but it was not a home to Mike.

This was the first step of his person centred plan because Mike wanted to persuade us that the best course of action was for him to stay at this house with no facilities whatsoever. By listening to his stilted words

charged with emotion and frustration we realised we had to help him do something in his own way and not impose our standards and expectations of appropriate housing on him. We compromised on another room, found a bed and some bedding and asked the full time resident caretaker, looking after the security of the property while it was being renovated, to "keep his eye on Mike".

Just to make sure we still had some "control factor in this" we agreed with Mike that he needed to go home to "his real home" when work was taking place and to get support from the staff at the home (he never went back once). We also insisted this was a temporary measure (that was seven years ago!).

Graham is a man in his early forties who lives in a small village. He has lived there all his life with his dad. Every weekday morning he is picked up by the

There are dangers in focussing too much on the process of planning to the detriment of the desired outcomes. In exploring the uses of person centred planning we

social work bus which takes him to a day centre in the local town. Graham knows everyone in the village. He goes to the local pub every Friday and shops in the post office almost every day. Recently his father was diagnosed as having terminal cancer.

It looked like Graham would have to leave the village and provision would have to be found for him elsewhere. Graham's social worker began looking at the options available in the local town. At the day centre they knew that Graham would be devastated to lose both his father and his community at the same time. One of the support workers, Fergus, decided to see if anything else could be done. He travelled to the village one day

and began knocking on doors. He explained to Graham's neighbours that he would have to move out into supported housing when his father died. Nobody wanted that to happen. Graham and Fergus called a meeting to which about twenty people came. Between them they sorted out how they could support Graham to stay living in his own home when the time came.

Two months ago Graham's father died. Graham feels the loss deeply but he has insisted on remaining in the house when he has always lived. He still attends the day centre and someone from his support circle meets him off the bus everyday and goes home with him to cook a meal. No one thought he would manage to sleep on his own but he does. There are fourteen people from the village in Graham's circle of support. Between them they are determined to ensure that he does not have to move away.

Where is the evidence?

In public services, we are increasingly and rightly looking for evidence to justify expensive activities and interventions. Some have questioned the application of person centred planning approaches on these grounds. Obviously evidence of effectiveness is important and the Department of Health has recently commissioned a major study to be undertaken in the near future. Having said this, the key issue is not "should we undertake person centred planning?" but rather to establish how to make person centred planning most effective. This is because a key purpose of person centred planning is to find out what is important to people and to act on this knowledge. If we do not do this we must ask ourselves serious ethical questions about our activities as professionals, staff and managers.

In one local authority area recently a presentation was made to the Social Services Committee. The presentation was by a group of managers and staff from the Learning Disability Section of the SSD who had been

introducing person centred planning for some of the people who use the service. The elected members were suitably impressed by the presentation but one asked a question along the lines of: "Let me get this clear, you are introducing an approach that finds out what is important to people so that we can make sure that services are responsive to them? You mean to say we don't do that for everyone already!". The surprise of the elected member reflects the views of many advocacy organisations and family groups who feel strongly that we need to get much better at hearing and responding to people's concerns. We

must be really careful to keep our eyes on the prize of people getting better lives.

This does not mean that how planning is done is unimportant, but that it will vary in different circumstances. Long before anyone developed person don't need evidence to know that we should do this.

Summary

- In it's fundamentals, person centred planning is a way of helping people to work out what they want, what support they require and then helping them to work out how to get it. It is about life not just services
- Person centred planning has its roots in changing philosophies about people with learning disabilities and in better practice in supporting people
- Person centred planning is not synonymous with "needs led", "client" or "patient centred" planning or "holistic" assessment

- There are five main features of person centred planning. These can be used to test "person centredness"
- Different styles can be useful for different purposes and in different circumstances
- Though there are some well developed styles, it is vital not to undermine person centred work simply because it does not come under the name of these styles. Remember the goal is better lives
- Equally, approaches that are fundamentally not person centred must not be re-labelled or tinkered with and presented as person centred
- We need evidence about how to do good person centred planning, not about whether we should do it. This is fundamentally an ethical issue
- Person centred planning should not be denied to any groups of people
Helen Sanderson and Martin Routledge. With extracts from *People, Plans and Possibilities* by Helen Sanderson, Pete Ritchie, Jo Kennedy and Gill Goodwin. If you want to read more you can order *People, Plans and Possibilities* from Inclusion Distribution

Father-Child Affection in Chinese Culture

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1. Research Background

Fathers in Chinese culture, the largest group of fathers in East Asia, have received increasing scholarly attention since the turn of the century. The first decade of the 21st century witnessed an explosion of studies on Chinese fathers, particularly in regard of the research volume. According to the counts provided by Shwalb et al. (2010), the number of published articles on Chinese fathers after 2000 is more than twice the total number of articles published before (217 articles after 2000 versus 90 articles before 2000). The interest on Chinese fathers is not restricted to developmental psychologists, but is widespread across various disciplines such as family studies, gender research and indigenous psychology.

Rather than a random academic fashion, the emerging interest on Chinese fathers reflects the progress of fatherhood research as well as the changing social contexts in Chinese academia. Contemporary fatherhood research has made great improvements in both research scope and cultural sensitivity. While early pioneers of this field focus more on conceptualization and measurement of paternal involvement (Day & Lamb, 2004; Parke, 1981, among others), recent scholars have become aware of other sub-fields such as the quality of fathering and father-child relations (Margsilio, 1995), where the influence of culture is profound. The acknowledgement of the role of culture sets the foundation for hypotheses on behavioural diversity of fathers across ethnic groups. Thanks to the effort of researchers in cross-cultural parenting, fathers from numerous cultural backgrounds have been investigated (Ho, 1987; McAdoo, 1988; Mirande, 1988; Shwalb et al., 2010, to name just a few). Chinese fathers, who have been disproportionately understudied compared to their counterparts from other ethnic groups, now become a group of interest because of their distinctive cultural values. Academic interest in Chinese fathers is further supported by recent increases in popularity and research input of social sciences in Chinese societies. For instance, recent international report shows that Mainland China now recognizes the importance of social sciences and has been “bolstering research capacity” of them (World Social Sciences Report, 2010). Research on Chinese fatherhood - more specifically, father-child affection in Chinese families - is consequently enabled and encouraged in such social and academic contexts.

2. Cultural Roots of Father-Child Affection

2.1 Chinese Cultural traditions

Father-child affection is of particular interest for researchers working with Chinese families primarily because principles in traditional Chinese philosophies are believed to be restraining on emotions. Indeed, Chinese cultural traditions – either as formally documented work or as popular sayings among the folk – shape paternal affection and father-child relations in fundamental ways: not only do they

influence the behaviours of fathers as individuals, they also mould the way Chinese males connect with their children and partners.

To begin with, the Chinese culture discourages emotions of individuals, especially explicit expressions of males. An “educated gentleman”(junzi/君子), the ideal man in traditional Chinese culture, is someone who masters and masks his emotions – negative as well as positive ones – to maintain interpersonal harmony and rationality in personal judgment (Xinu bu xing yu se./喜怒

形於色; Tang, 1992). The father, as the male role model in the house, needs to reserve his emotions and affection so as to lead his child towards the way to become the ideal individual.

Chinese traditions also shape the father-child relations by assigning relative intra-familial positions to father and child. While emphasizing the educating role of the father in child development (Yang bu jiao, fu zhi guo.養不教, 父之過.), Confucian philosophers specifically nominated the father as the child’s “guide” (Fu wei zi gang./父為子綱.) and interpreted this as part of the “natural laws”. The father enjoys superiority over his child without prior discussion or mutual agreement. He practices strictness and kindness towards his child and expects compliance, respect and filial piety in return. Such order is desirable not only to maintain the proper functioning of the family, but also to build further social relationships such as those between elder and younger siblings and those between superiors and subordinates, which are thought to be projections of father-son relationships (Huang, 2001). Although paternal kindness is also stressed and the father is encouraged to behave as the child’s most intimate supporter (Huang, 2001), the unequal nature of father-son relations in the family put severe constraints on expression of paternal affection and on father-child closeness. “The father should be strict with the son and not improperly close... inappropriate closeness will lead to disrespect.”(Fuzi zhi yan, bukeyi xia./父子之嚴, 不可以狎.), said the well-known educator Yan Zhitui (531-590) before Tang Dynasty.

The impact of traditional Chinese culture exists in the power balance between male and female as co-parents, too. Mothers and fathers, as “yin”(陰) and “yang”(陽) in the family, have differentiated but cooperative parental roles. Following the patriarch tradition, which is a heritage from the agricultural origin of Chinese civilization, the father is the head of the family and the parent with authority. The mother, on the other hand, takes responsibility of “interior” chores such as childcare and plays the nurturing parent (Nan zhu wai, nv zhu nei./男主外, 女主內). The popular expression of “strict father, kind mother”(yanfu cimu/嚴父慈母), which is reflected through Chinese characters and vocabulary (Ho, 1987), is highly penetrated among the folk. To abide by the Confucian ethics, the Chinese father must suppress his affection towards the child and (not necessarily voluntarily) leaves the affective part of parenting to the mother.

In short, Chinese fathers are expected by their culture to act as the stern educator in the household without exhibition of emotion and affection. The distant father-child interaction and relations should be compensated by the mother, who conveys parental nurturance and affection.

2.2 Empirical Evidence

One may reasonably doubt to what extent these traditional thoughts are applied in the reality of Chinese family life. A substantial number of empirical studies spanning from the 1970s to the last few years provide mixed findings on whether or not these cultural sayings still hold in modern Chinese societies.

While early observational research confirmed inferences from Confucian classics, several recent quantitative studies hinted astray from tradition in contemporary Chinese families.

Ethnographic evidence on the paternal affection in Chinese families were first contributed by Wolf (1978) and Jankowiak (1987), who conducted fieldwork in Taiwan and north China respectively. Both found that Chinese fathers are emotionally restrictive towards their children. "*Taiwanese fathers say that it is only from this aloof distance that they can engender in their sons the proper behaviour of a good adult... this remoteness also builds the supports necessary to maintain the senior male's position of authority over his adult sons.*" (Wolf, 1978, p.225). Jankowiak agreed that "...*Chinese fathers... did not strive to develop a warm emotionally charged parent-child relationship. Rather they believe that their role should not encourage or tolerate emotional indulgence.*", although "[m]ost Chinese fathers, in fact, felt a warm, deep sentiment toward their children (Jankowiak, 2010, p.347)

In concert of the early depictions, Berndt and his colleagues (1993) found that fathers were perceived as less warm than mothers by boys and girls across major Chinese societies (Mainland China, Hong Kong and Taiwan). Shek (1998, 2000) found that Hong Kong adolescents rated their fathers as less responsive, and less concerned but harsher than their mothers. These studies notwithstanding, Lin and Fu (1990) did not find differences in parenting styles between parents in either Taiwanese families or immigrant Chinese families living in the United States. The absence of difference was supported by Chuang and Su (2009), who sampled from Mainland Chinese families and immigrant Chinese families in Canada.

Data on father-child relations were obtained from different subgroups under Chinese culture. Surveys in Mainland China found that children and adolescents have more intimate relationship with their mothers than with their fathers (Feng, 2002; Yu & Zhou, 2002). Qualitative studies in Taiwan indicate that Chinese daughters feel a closer relationship with their fathers than Chinese sons (Chiu, 2005). Moreover, daughters tend to "yearn for" or "long for" paternal affection more than sons do (Chao, 2009). Father-child relations also improve while children grow from adolescence to early adulthood (Chiu, 2005, 2009).

The small, selective body of literature above represents part of the accumulated knowledge on father-child affection in Chinese families, which is of great value as foundation for present research. So far, studies on Chinese father-child affection are still scattered and extant results are inconsistent. Many of them fell short on conceptualization and research depth. The Chinese culture is not properly "unpacked" as it needs to be in many studies. The majority of research also fail to triangulate between different data types or accounts from multiple informants. These limitations pointed out the need for further studies on father-child affection in the Chinese culture, one of which is presented below.

3. Current Study: Father-child Affection in Chinese Families

Standing on the shoulder of existing evidence, the current study sets out to explore the father-child affection in Chinese families. To deconstruct the broad umbrella concept in question, different theories are referred to for the conceptualization and measurement of father-child affection.

3.1 Theoretical Backgrounds

Up to date, there has not been a unified or dominant model for researching father-child affection in particular. Even the term of affection is used interchangeably in the literature, alongside with warmth, nurturance, closeness, emotionality and so on.

However, a number of related theories provide insights for scholars on this specific topic. Affection is a critical part of parenting in several existing models. Baumrind (1965)'s bi-dimensional model of control-affect belongs to the most widely applied theory in categorizing parenting styles. Although it receives a lot of criticism, it recognized the importance of the affective dimension of parenting. Palkovitz (1997), too, acknowledged that affective parental behaviours form a major part of parental involvement alongside with cognitive and behavioural components of parenting. The affective aspect of parenting manifests in a variety of behaviours including expressing love and concerns towards the child, showing genuine interest in child's life and thoughts, supporting the child emotionally through praises and encouragements as well as hugging, kissing and cuddling.

Scholars on affection communication made crucial complements to the behaviours listed above, pointing out that father-child affection entails more than explicit expressions. Beyond the overt, behavioural side, affection contains an internal, experiential part (Floyd & Morman, 1998). The latter aspect is equally worth exploring, although it is apparently more difficult to define and to measure than the former. Floyd and Morman (1998) also emphasized that affection is learned through long-term socialization. Therefore, affection is not universal, but is subject to cultural influence and social transition, which justifies the study of cultural diversity of father-child affection.

The current study follows the assumption of Floyd & Morman (1998) about the dual facets of affection, aiming at both visible affective behaviours and hidden, unexpressed feelings. In concrete, this exploratory investigation wants find out: 1) how Chinese fathers express their sentiments towards their children; 2) how fathers and children emotionally connect in Chinese families; 3) how people explain and interpret father-child affective behaviours and relations in their families.

3.2 Methodology

3.2.1 Sampling

Participants of the current study were recruited from immigrant Chinese families living in Cambridgeshire, United Kingdom. Three screening criteria were applied during the recruitment process: 1) Both father and mother need to be resident and biological parents of the child; 2) Both father and mother need to be first-generation immigrants from a Chinese society, i.e. they grew up in the Chinese culture; 3) The child needs to be between 9 and 15 years of age. 21 immigrant Chinese families finally participated and data from 19 of them eventually entered analyses.

3.2.2 Procedure

Data were gathered during one-time home visits to participants' families. Each home visit lasted around 60 to 90 minutes. Father, mother and the child had been all asked to be present during the home visit, but data were collected separately from each person.

Consent forms were obtained, usually upon arrival at participants' home. All participants then completed a number of qualitative and quantitative measures. Each parent was asked to fill in a questionnaire booklet and was invited to a semi-structured interview without the presence of his or her

partner. Each child was asked to fill in a questionnaire booklet only, and was instructed to complete the questionnaires independently without parental help.

Each family was paid 10 British pounds for their participation, plus a gift for the child.

3.2.3 Measurements

Each family was assessed from six aspects: 1) demographic; 2) paternal involvement level in childcare; 3) general affective quality of fathering; 4) father-child closeness; 5) paternal affectionate behaviours and 6) experiences with others. Father, mother and child received the same questionnaires and were all asked to target at father's behaviours and father-child relations. Children were not interviewed due to ethical restrictions, but questions planned to ask the parents appeared in the child's questionnaire booklet as open questions.

	Qualitative Data	Quantitative Data					
Father	Semi-structured interview	PRQ	PPQ	SEFQ	NFS	FCABI	Family Map
Mother	Semi-structured interview	PRQ	PPQ	SEFQ	NFS	FCABI	Family Map
Child	Open questions in questionnaire booklets	PRQ	PPQ	SEFQ	NFS	FCABI	Family Map

Demographic information including parental occupation, child age, child birth order, child birth place and language used during parent-child communication was gathered from a demographic sheet in participants' booklets.

Paternal involvement was evaluated using parents' and child's version of Parental Responsibility Questionnaire (PRQ, Hwang & Lamb, 1997) and Parental Preference Questionnaire (PPQ, Hwang & Lamb, 1997). Both are seven-point Likert type scales assessing the relative share of childcare tasks between father and mother. Parents were asked questions such as "who in your family takes the child to the doctor? (1=all done by you, 7=all done by your partner)". Both questionnaires were slightly adapted to suit the scenarios in families with children in late childhood and early adolescents. Paternal share of childcare tasks was also asked during the interview with parents.

General affective quality of fathering was measured using the Nurturant Fathering Scale developed by William & Finley (1997, in Finley & Schwartz, 2004), which is a five-point Likert type scale measuring the nurturance of the father very broadly (e.g. "How emotionally close to you think you are to your child?"). Again, this questionnaire had been slightly re-worded. General affective quality of fathering was asked during the interview and open questions too, when the participants were asked to describe the parenting style of the father in detail.

Similarly, *father-child closeness* was evaluated both on paper and in interview. A simplified version of the "Family Map", initially designed by Dunn & Deater-Deckard (2001), was applied. The "Family Map" consists of a number of concentric rings, with the central circle representing the participant himself or herself. Family members fall in the outer rings. Those that are located closer to the central circle represent families with closer relationships, and vice versa. Rings are scored (see *Figure 1*). Participants were told to put in as many family members as they want, and in whichever position they like. During interviews, a series of questions concerning the perception of, interpretation to and attitude

towards the current level of father-child closeness in the family were asked, together with participant's expectation for the future development of father-child relationship.

Father-child affective behaviours were measured using Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt, 1983; Halberstadt, Cassidy, Stifter, Parke & Fox, 1995) and Father-Child Affectionate Behaviour Items (FCABI; from Adolescent Prosocial Behaviour Questionnaire, Eberly & Montemajor, 1998). The former is a nine-point Likert-type scale whereas the latter has five points. Both cover a wide range of behavioural indicators of father-child affection such as "snuggling up with the child" and "chatting with the child about everyday things".

In addition, participants were asked briefly about their *experiences with others* that they found relevant to fathering behaviours in their families. Parents were asked whether there had been any other family member, friend or major events that might have changed the father's behaviours. Children were asked their knowledge about their friends' fathers. The purpose of these questions was to explore potential source of influence over paternal behaviours and father-child relations.

3. Data Analysis

Quantitative data were analysed using SPSS 16.0 programme. Individual scores as well as family mean scores on each of the five measurements were calculated. Correlations among the five questionnaires were computed, significant tests carried out to identify predictors of father-child affection, and one-way ANOVA applied to contrast test results among family members for detection of interrater discrepancy.

Qualitative data collected through open questions and interviews were analysed manually following the principles of grounded theory. Children's written answers and verbatim transcripts of parents' interviews were read multiple times before initial codes were developed. Codes were then gathered and compared, from which themes emerged.

After separate analyses, quantitative and qualitative data were compared and contrasted to look for agreements and differences.

4. Results

4.1 Quantitative Results

Demographics Average size of the 19 investigated families was 3.89 people ($M=3.89$, $SD=0.57$), with 4 families having one child only, 13 of them having two children and 2 having three children. Children in these families range from 9 to 14 years of age ($M=11.05$, $SD = 1.75$). 11 of them are boys and 8 are girls. The majority of children (13 out of 19) were born in the UK. Of the 19 families, 18 families have the father living with the child every day. In 1 family, the father works elsewhere but returns home on a very frequent and regular basis. Detailed educational backgrounds were not checked, but as implied from their occupation, 14 fathers received higher education whereas 5 fathers only have very limited education. Among all participating families, 15 families have been living in the United Kingdom for more than 10 years, whilst the rest have moved in recent years from the Chinese culture.

Descriptive In general, the mother is the primary caregiver in the investigated families indicated by average of family mean scores on the PRQ ($M=2.96$, $SD=0.92$). The mother is also the preferred parent of the child across a variety of life scenarios, as suggested by the average of family mean scores on PPQ ($M=2.94$, $SD=0.79$). Participating fathers scored moderately on NFS ($M=3.77$, $SD=0.42$), SEFQ ($M=4.49$, $SD=0.94$) and FCABI ($M=3.33$, $SD=0.65$), suggesting a generally warm and affectionate fathering style.

Contrast between family members A “perception gap” seemed to arise in terms of father-child affective behaviours when results from different family members were contrasted. Significant differences were found between family members on SEFQ ($F(2, 54) = 4.93$, $p < .05$) and FCABI ($F(2, 54) = 3.81$, $p < .05$), with the greatest differences between the rating of father themselves and the children.

Correlation between measures Pearson correlation between results on the five scales revealed an interesting phenomenon of dissociation between paternal engagement and father-child affective behaviours, with PRQ scores related to neither SEFQ ($r=.37$, $p > .05$) nor FCABI ($r=.38$, $p > .05$) using both family means and individual accounts.

Predictors of paternal affection Several contextual factors stood out as they were significantly correlated with paternal affection. These include child birth order ($t(17)=2.79$, $p < .05$ on SEFQ; $t(17)=2.16$, $p < .05$ on FCABI), immigration time ($t(17)=2.64$, $p < .05$ on FCABI) and paternal education background ($t(17)=2.45$, $p < .05$ on NFS; $t(17)=2.29$, $p < .05$ on FCABI). Older children received more paternal affection, and fathers with longer immigration history and better education were reported to be warmer and more affectionate than those who only moved recently and those with limited education.

4.2 Qualitative Results

Three major themes regarding paternal affection and father-child relationships in Chinese family arose from qualitative data: 1) Image of traditional Chinese father; 2) Paternal control of affection and 3) Family dynamics. These themes are connected and each of these themes consists of several sub-themes.

4.2.1 Image of traditional Chinese fathers

The image of traditional Chinese fathers was constructed to a large extent by recollections of Chinese fathers from the previous generation. These memories provided a generally negative portrait of Chinese fathers, who were described as uninvolved in childcare and incommunicative to the children. *“I didn’t live with him until eleven or twelve and we were barely close...he didn’t talk to me and I didn’t talk to him either.”* (father, FAM010), said a father. *“We are OK, but don’t really talk to each other.”* (father, FAM005), agreed another.

In turn, certain fathering behaviours were labelled as “typical Chinese” by mothers, such as excessive control, strictness and discouragement. *“He is not quite tactic about expressing himself,”* described a mother, *“Sometimes he is very nagging instead of ... he likes exaggerating weaknesses instead of helping the child more constructively. It’s like typical Chinese parents, more criticism than praise.”* (mother, FAM021) Affection, on the other hand, is considered the feature of western parents. *“As I see in many British families, father and child could be even closer... say, they can have rough and tumble play like brothers. In Chinese families, men - especially at our age – are not that expressive and do not have that many physical contacts.”* (mother, FAM010)

However, things do change after immigration. As one father pointed out, *“here works something else.”* (father, FAM008). In a different environment, behavioural changes of fathers emerged. *“Of*

course since he came to the west he learned some overt expressions. Hugs, kisses... he can do that too.” (mother, FAM008).

4.2.2 Paternal control of Affection

Paternal and maternal narratives suggested that Chinese fathers struggled to suppress emotion and affection towards their children. Two strategies frequently in use during communication of affection are rationality over emotionality as well as cross-domain compensation. Chinese fathers, with or without intention, rationalize their emotion and affection. Several fathers described how they weighed carefully about expression of affection, putting it into the large context of child development, as this father does. *“Yeah I do [express my love] but not in a laughing and joking way, but ... yeah usually in a reasoning manner, say, ‘dad and mom love you and we hope you can achieve something when you grow up.’”* (father, FAM021)

While Chinese fathers hide their compassion most of the time, instilling life philosophy and supervising homework, they do redirect their love and warmth elsewhere and occasionally play the “indulgent” parent. Fathers are usually the generous one in buying children toys and exempting children from assigned chores. *“I told them that as long as you do well at school and become interested in homework, dad will get you anything you want as long as I can afford.”* (father, FAM009) In fact, this father is one among many fathers that admitted offering such promises.

4.2.3 Family Dynamics

Family dynamics here refer to the interaction cooperation between fathers and mothers, which was an unexpected yet fascinating theme coming up repeatedly in interviews. Instead of competing with father for the position of parent with authority, Chinese mothers intentionally promote the parental power of their husbands by inviting them to play the decision maker or judge. *“The dad is the ultimate authority in our home. When I am not able to take children under control the dad starts to speak. He doesn’t express a lot – I usually deal with it first and when I can’t handle the situation, dad stands out and takes over.”* (mother, FAM010)

Chinese fathers are not only assisted in their authority, but also balance their parenting styles together with their wives. Chinese fathers and mothers often use the role division of a “soft” and a “harsh” parent in the household, which is interchangeable according to the situation. Fathers themselves are happy to play the “soft” parent, as long as they are sure that an appropriate amount of discipline is carried out and a balance between warmth and control is achieved. “Cooperation” of the partner in maintaining such order is mentioned by a few parents and one father admitted that he has played the “soft” parent in the past, but had to shift to a very stern and strict parenting style when he found that the child was not well-disciplined by his wife.

The aforementioned major themes, alongside with sub-themes, are presented in the “thematic map” below:

4.3 Data Triangulation

Quantitative and qualitative data in the present study converged well. Both fathers and mothers wished for increase in paternal involvement in childrearing, coinciding with the low paternal participation level in childcare tasks reflected by PRQ scores. The improvement in affective behaviours with experiences in the western society was elaborated in paternal and maternal narratives. The incongruent perceptions of paternal affection as shown in discrepancy in SEFQ and FCABI scores correspond to inconsistencies

in fathers' and mothers' accounts. While there was no obvious conflict between quantitative and qualitative data, within the quantitative data fathers seemed to score higher when asked about their nurturance level in a vague and broad manner than they did when asked in detail about particular behaviours.

5. Discussion

The present study provides further evidence on father-child affection in Chinese families using various qualitative and quantitative methods. Results suggest that mother, instead of father, is still the primary parent in Chinese families, which is consistent with larger social surveys conducted in Chinese societies (Wu, 2006; Xu & Zhang, 2008). Fathers behave with a moderate level of warmth and affection in general, but are still inept in displaying their sentiments in explicit behavioural such as hugging, kissing and praising the child, which are considered signature of western parenting. While traditional Chinese fathers were perceived as extremely remote and unaffectionate, a medium level of nurturance could indicate the improvement in paternal affection in Chinese families, at least on the motivational level: fathers tend to describe themselves as emotionally engaging and affectionate, although their partners do not necessarily agree. The shift in fathering notion seems to be reinforced by experiences in the western society, where father-child affection is visible and encouraged.

The dissociation between paternal involvement level and paternal affection may indicate that paternal involvement in Chinese families centres around tasks without emotional expression. Indeed, a detailed breakdown of the PRQ demonstrates that Chinese fathers interact with their children as decision maker and instructor rather than caregiver and emotional supporter. Even on the rare occasions of expression of affection, words of love come out of Chinese fathers in a rationalized rather than spontaneous and passionate manner. Such paternal roles were supported and assisted by mothers, who establish and maintain fathers' authority in the household. Although many existing studies investigated paternal and maternal behaviours in Chinese families together, there is very little information on Chinese mothers' influence on their partners' behaviours.

It is obvious that a variety of methodological weaknesses make findings of the current study hardly generalizable. This convenient sample among immigrant Chinese families is not at all representative of the vast Chinese populations. The retrospective nature of self-report measures bears the risk of memory error and perception bias as seen in the ratings of fathers, mothers and children, not to mention that the instruments in use have not been indigenized, which flags the question of cultural equivalence in measurement. Therefore, great caution should be taken before drawing any conclusion from this dataset.

Nevertheless, the present study highlights a number of issues regarding research on Chinese fatherhood. First of all, it reminds us that cultural continuity is not to be assumed in the globalizing world. The apparent disconnection of contemporary Chinese fathers with previous generations in terms of parenting notion makes it clear that objective, up-to-date investigation of Chinese families is needed to build the foundation for further research rather than assumption based on Chinese traditions or even stereotypes. Secondly, family should be seen as a functioning unit with internal dynamic instead of a cluster of isolated individuals. The examination of fathers' behaviours should be embedded in the context of mother's and child's behaviours, and in some cases in the background of multigenerational extended families, which accounts for a large proportion of Chinese societies. Last but not the least, the study underscores the role of data triangulation in exploration of topics involving subjectivity such as

affection. Between data types, qualitative data can elaborate the meanings behind numbers and numbers present the findings extracted from lengthy transcripts in concise ways. Between different informants, similarities in answers confirm reliability of information and disagreements help identify hidden problems.

In conclusion, father-child affection in Chinese families bridges tradition and modernity. On the one hand, Chinese fathers bear the tradition of emotional reservation towards his children and still enjoy the position of family authority. On the other hand, the behaviours of Chinese fathers are on the change under influence of social and cultural transitions. Chinese mothers, as active co-parents, play a unique role in shaping fathers' behaviours and father-child relationship.

6. Future Directions

Research on father-child affection in Chinese families could be extended in many ways. An improved, culturally equivalent conceptualization of affection would help with the raise of hypotheses and development of measures. Representative sampling and observational methods would increase quality of data and longitudinal designs would capture chronological change of paternal behaviours as the child grow. Furthermore, the impact of paternal affection on child development and family life could be studied as well as its social and educational implications.

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Final Paper

Late Divorce: Better Late than Never?

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Today an increasingly prevalent occurrence in family life in western industrialized societies is that of late divorce in which a couple divorces at the age of 45 plus. Indeed, approximately 15-20% of all divorced couples today divorce at the age 45 or more and the rate of divorce in this age group is increasing at the fastest rate of any age group studied. This is in contrast to divorce rates in younger couples which are tending to plateau or even decrease.

:Amongst the reasons held accountable for this phenomenon are

- Longevity rates have increased rapidly in the last century. For example the average life expectancy in western countries at the beginning of the 20th century was approximately 48 years while today it is close to 80 for both males and females (McLanahan, 2004). This provides a larger population base of mid-age and elderly people who can divorce.
- In the past when adult children left home there were few years left for the parents to experience couple life together without the presence of children. Today, with a greatly expanded life cycle, people who reach age 45 may expect an average of 30 years together as a couple, in the so called "empty nest" phase without children (McGoldrick, Carter & Garcia-Preto, 2010). The prospective of such a long life together may cause them to contemplate seriously whether to stay together for a period which may extend over three decades.
- Today there are few precedents which can serve as role models for people past midlife. Subsequently it is very hard for people in these age groups to cope with couple difficulties and/or with their adult children's or elderly parents' problems. This could lead to crisis and a decision to divorce in later life.
- Feminism has resulted in more flexible gender roles (Beck and Beck-Gernsheim, 1995) resulting in many women in midlife to pursue career, social educational and other goals in order to achieve fulfillment. This often occurs at time when men are slowing down in the professional realm and are seeking satisfaction in the context of the family and friends. These

- opposing life courses could result in negative developments and even marital dissolution.
- More liberal attitudes towards divorce influenced by globalization and the age of the internet remove much of the stigma earlier associated with divorce which has almost become an alternative life cycle path to the traditional marriage of yesteryear
 - Divorce at this stage usually doesn't involve major conflicts such as custody, visitation rights and division of property (Dreman, 2000). Similarly, older couples may be better off financially and more effective in solving conflict amicably. This is further reinforced by the wish of couples in long standing marriages to preserve their public image in the personal, social and occupational spheres in spite of divorce.

While there is an abundance of research on divorce in young couples and its effects on young children there has been little research done on the effects of divorce in later life. Hence two studies on late divorce were recently carried out in Israel. These studies investigate the intricacies of late divorce within the theoretical framework of systems theory. This approach looks at individual development within the context of family, extended family, society and culture (Bronfenbrenner, 1979; Minuchin, 1985). A person's psychosocial world consists of a number of concentric, sometimes overlapping circles: the intrapersonal (physiological, thoughts, feelings and behavior), the interpersonal (the nuclear family, the family of origin, the friendship network, the workplace and professional network), and the macro-social (general society, influences of economic, political and historical realities, religion and social norms). Investigation of late divorce is relevant to the Israeli setting since approximately thirty percent of all divorces in Israel occur at the age of 45 and over (Israeli Central Bureau of Statistics, 2010). The narrative method of interviewing and qualitative methods of data processing were employed in both studies in the hope of capturing the richness, multiplicity and complexity of the divorce experience (Lieblich, Tuval-Mashiach & Zilber, 1998). Such a focus permits an in depth longitudinal perspective of an individual's developmental process which includes the interaction of intrapersonal, interpersonal, societal as well as situational and historical factors

Method, Results and Conclusions

A research team of doctoral students supervised by the senior author, conducted two separate studies on late divorce.

In the first study (Rokach, 2004) seven couples (14 subjects) were interviewed individually regarding their perceptions of their late divorce (over age 45). In the second study (Steinmann, 2008) 14 male and 11 female students were interviewed. Their parents had divorced in later life when they were 18 years of age or more and they were asked to discuss their parents' divorce. The interviews employed qualitative methods of analysis in both studies which provide "descriptive density" (Strauss and Corbin, 1990), categorical content analysis, micro and macro-analysis (Rosenthal, 1993) and categorical analysis (Lieblich, Tuval-Mashiach & Zilber, 1998). The interviews were semi structured and open end. The qualitative methods employed provided an understanding of the process and implications of late divorce for the couple and their childre.

In a study of couples who divorce after age 45 (Rokach, 2004) each partner to the divorce was interviewed in order to obtain their personal narrative regarding their divorce, i.e., a comparison of "his divorce with her divorce". The examination of these interviews was carried out within a systems framework, i.e., analyzing late divorce in the context of personal, familial, communal and macro-historical characteristics related to later divorce

Personal growth

Many interviewees reported that their late divorce resulted from a growth experience such as therapy, workshops and professional advancement rather than the negative marital experiences such as verbal and/or psychological abuse. These growth experience often increased self confidence and resulted in the courage to leave a bad marriage. Women reported a sense of freedom, competence and achievement after divorce which substantiates much of the postdivorce research findings (e.g. Wallerstein and Kelly, 1980). The major gain reported by men was a more satisfying couple relationship. This may reflect the strong need of men to have a positive familiar base which supports and complements their occupational pursuits. Women, on the other hand, hampered by a conventional marriage, may flourish after divorce as was the case in the present study. Interestingly, both partners to the divorce perceived themselves as being the initiator. One possible

explanation is that being active and in control is a cultural expectation in Israel.

Family dynamics

It was found that most of these marriages had been deteriorating over a long period of time with one or more of the ex-partners experiencing ongoing "silent despair" While divorce was sometimes triggered by flagrantly unacceptable behavior such as adultery, for the most part it was precipitated by poor communication skills, excessive criticism or lack of emotional support. Adultery occurred in all couples studied but only one couple cited this situational trigger as the cardinal reason for divorce. Hence betrayal was never perceived as the main cause or the "trigger" but the result of the ongoing poor marital relationship or the "fuse" (Rokach, 2004). David: "I didn't call it being unfaithful. I told her that she should stop going to her mother's all the time---I need a wife. - I can't live without a woman.."

Interestingly, women detected their partner's adulterous behavior while men did not, perhaps indicating women's greater sensitivity to social cues. They often chose to ignore it to keep the family together. *Bruria* referring to Shlomo's betrayal says : I had suspicions and maybe I chose to ignore the fact that he was playing around --- but I preferred to ignore it and not see it." *Shlomo* like David notes that the reason for his infidelity is because of deprivation in the marital realm: "I had an infidelity or two--- I suppose that a person who's satisfied doesn't need it---I guess I was looking for something that I really didn't have at home—looking back I knew that Bruria knew—Bruria never said anything to me --- if she had said something to me it's possible that it would have been an excellent opportunity to clarify, to look at things s
Interaction of personal and familial characteristics

Interaction of personal characteristics with family dynamics

In some cases personal characteristics interacted with family dynamics to maintain and eventually destroy the marital relation. Camille "—after the birth of our daughter ---I started to have bad anxiety attacks. For years I think I stayed there because I very much remembered his support—his being there for me in a place where I felt I was going crazy." However, as her self esteem grew

she realized "What a pathological distortion there was in that relationship in the sense that he was to be the healthy one and I'm sick." Her husband Charley, also sees her dependence on him as a central factor in maintaining the marital balance. He emphasizes the gain in self-esteem this gave him in the marital diad. This codependent relationship satisfied them for ten years but also led to the difficulty of separating for an additional ten years. seriously and see where to go from here."

Intergenerational and historical factors

Regarding intergenerational influence parental relations in the family of origin affected late divorce in their adult children. *Dror* believe that Reut's initiative to divorce was influenced by her parent's late divorce: "The relations between my parents weren't much but they lasted till the end---Her parents got divorced when she---was at the end of high school, the beginning of her army service----the family situation was important for me,---but for her It wasn't ."

Other historical factors may also affect the decision to divorce later in life when the children have left home. *Miriam*, the daughter of holocaust survivors, feels she was "programmed" to self sacrifice and preservation of family. "Family is holy, and you don't break it up. Certainly not when your parents are holocaust survivors who succeeded in building a new life and now the family is a part of that life." Conversely she implies that her parent's deaths set her free to willingly agree when Aaron demanded divorce for the third time.

Therapy

Six of the seven couples went to marital therapy and four individuals had personal therapy. All the interviewees who went to individual therapy were women (four females and they unanimously indicated that it "helped" (in their words) them make the decision to divorce and all of them felt they received support and encouragement from their therapists. Couples therapy did not prevent the divorce. *Ora* says she initiated the marital therapy, however *Jacky* when asked about these attempts to improve the marriage replies "No -it was a lost cause." Charley went to several therapists on his wife's initiative, however he believes that Camille used the therapy to ease her conscience and not to improve the marriage. She reports that in therapy (marital and individual) she realized the depth of the differences between them.

Steinmann (2008) interviewed adult children whose parents had divorce in later life when the children were 18 years or older. These interviews were also examined within a systems framework

Personal characteristics

She notes that healthy development in the young adult requires differentiation from their family of origin as well as preserving a sense of belonging. In Israel, belonging and having a safe haven to return to while pursuing autonomy is particularly important for the average young Israeli adult who is usually conscripted into army service at the age of 18 and normally rely on their family to support and nurture them during this difficult period.

Family of origin, couplehood and parenting

In lieu of the above it is not surprising that the young couples examined in the present study valued traditional family life and their marriage in spite of experiencing the failure of their parents' unsuccessful marriage and their own unhappy childhood. They were also optimistic, if somewhat cautious, about their future. To resolve dissonance they often used their parents' relationship as a negative role model for their own parenting. *Miri*: "Only in the last two years I have realized what happens and where it comes from----I do it by deciding treat myself. I do this by breaking a link in the chain----a very long chain which could have ended in the same story as my mothers' and fathers'. --- I function as a mother and not as a servant in the house ----I feel that I can sit and play or speak with my child, something which I didn't experience-----and to speak with him as an adult and not to make of him---like they did of me---something inferior , nothing that has no self. " These findings contradict those of studies conducted in other western industrialized countries where adult children of divorce usually maintain negative attitudes towards marriage as well as displaying a higher rate of divorce than children in nondivorced families (Amato, 2000). Our interviewees counterconformity as expressed in the total rejection of their parents' modes and ways resembles "first order change" which is usually superficial and precludes the cognitive and emotional resolution that should eventually lead to effective adjustment - "second order change" (Watzlawick, Weakland and Fisch, 1974). Second order change requires some integration of parental roles and behaviours which may be useful to these adult children in their present family constellation rather than total rejection of their parents as a role model.

Several couples expressed concern regarding their potential parenting abilities. They perceived direct contact between the concerns and doubts they experienced and the parenting of their parents and the feelings they held towards them. "I don't feel pressure that I don't have a girlfriend---- but regarding parenthood it will be more difficult----I don't want children like myself and my sister----how will they feel about us as parents. I think I must go through a (preparatory) stage before I---- because I don't feel strong enough to----have children. I don't have to hurry to have children.

Psychological treatment

The majority of interviewees (20/25) had psychological treatment. Most of them turned to treatment close to the time of their parent's divorce and this occurred when they were already young adults. *Nadav*: "I went for psychological treatment a year and a half ago. There were many things I wanted to know about myself---all sorts of things I do and so many things that bother me---one of the major things that bothered me was the first separation and the divorce-----psychotherapy was something that was not available in the past when I was younger." Most of the interviewees who sought out treatment (16/20) reported that treatment had benefitted them personally, family wise and from a social interaction perspective.

Conclusions

Late divorce has become of growing concern in contemporary society. The findings in the present set of studies offer some preliminary guidelines for mental health professionals, family life educators and researchers dealing with this phenomena . For example, in Israel, traditional family values are regarded highly because of religious, security and related concerns (Shamgar-Handleman & Bar-Yosef, 1991). This may explain why adult children of divorce view the institute of marriage positively and may even idealize marriage as an indispensable factor for adult happiness. These optimistic views, while encouraging, express short-term reactions to parental divorce characterized by little emotional and cognitive resolution . Future research might examine the long-term effects of late divorce and if such attitudes ultimately contribute to adjustment. If they do not than therapists might focus on helping such couples attain more realistic attitudes towards family which positively contribute to future functioning .

In studying late divorce and therapeutic implications research should also consider:

- intergeneration factors such as family of origin and parental dynamics and divorce history
- cross-cultural differences
- objective quantitative measures of adjustment in addition to the subjective narratives explored in the present study.
- different modes of therapy such as individual, family, marital and group, and their effects on adjustment in adults and children

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