'A Dirt Field': Nature and Power in Local Planning

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Abstract
Research in urban political ecology (notably Neil Smith's notion of the production of nature) provides needed legibility for people and things at the cognitive borderland between nature and society, a persistent division in the western worldview. As a social creation, this divide produces material impacts through local political processes. This research problematizes nature as a social object in City of Nayoras planning processes by politicizing hidden flows of power in which nature is often misrecognized or ignored. Bourdieu's field theory provides an overtly political focus that gives legibility to socially hidden facets of an immanent nature. Ethnographic interviews and participant observation showed that discursive frames from the applied sciences and the abstract and financialized character of economic capital affected nature's legibility. Applied academic knowledge was used in ways that regulate human behavior apparently unconnected with its technical content but with material impacts across political scales that stem from these frames. Use of knowledge from the natural sciences in local government may be a low cost-high reward strategy for improving local ecological outcomes through increased legibility of dynamic systems. Observations in Nayoras indicate that this knowledge may be consistently absent within mundane planning and maintenance within an urban purview in California.

Keywords: urban political ecology, local planning, Bourdieu

The lover of nature is he whose inward and outward senses are
still truly adjusted to each other…
--Ralph Waldo Emerson

That [humanity's] physical and spiritual life is linked to nature means
simply that nature is linked to itself, for [humanity] is a part of nature.
--Karl Marx, Economic and Philosophic manuscripts of 1844

Introduction

Abdur Sakarnoputri sat in an ascetically furnished conference room on the third floor of Nayoras City Hall (pseudonym). Planning, he suggested, was an abstract endeavor in which the needs of future, imagined residents needed to be considered: "…it's not like people who haven't bought into a neighborhood are concerned about a neighborhood that doesn't exist. It's a dirt field" (personal communication, July 31, 2013) Echoing Swyngedouw's (1996) early urban political ecological work, Abdur describes planning processes through which urban, suburban and peri-urban nature is regularly metabolized. With the practical sensibility of a local planner, Abdur expresses the juxtaposition of socio-natures in disparate states of digestion within the urban economic, social and political metabolic systems that, as Marx writes above, are never separate from nature. Abdur's colleague Jefferson Graham, adds:

> How the heck are we going to know looking out 25 years to know exactly what's going to happen, but General Plans are updated every five years so that's just the process. You look out, you plan as well as you can. And then in 10 years you're updating your General Plan and then you look out again. As they are always looking out and then looking back and modifying and aligning the theoretical [land use designations] with what's projected, with what's reality all the way. (personal communication, August 29, 2013)

For Abdur and Jefferson, planning is abstract in character because it is connected to outcomes that may materialize decades in the future. In this process, although nature is immanent, natural things are managed through cognitive constructs in power-laden settings, in part, through linguistic and pragmatic simplification that limit possible outcomes. In this sense nature is a wily object (sensu Becker, 1953) in western cognition, one that evokes passion and schooled ignorance in the same breath.

Within urban political ecology (UPE), the idea of the human production of nature takes a unique form through historical examination of 'rural' objects in regional hinterlands in relation to 'urban' objects within cities (Robbins, 2012; Cronon, 1991). UPE has produced empirical research regarding ecological change predominantly in large urban areas including: the historical growth of specific cities (Chicago, Cronon, 1991; New York, Gandy, 2003), metabolism of resources in urban areas (water, Swyngedouw, 2004a and Kaika, 2005; food Galt 2013, Guthman, 2011) and specific geomorphologic features (rivers, Desfor & Keil, 2004; urban lawns, Robbins, 2005). Other post-humanist work, for example Grove (2009), has provided alternative

ontological approaches that discern "broader cultural dynamics inherent in nature" (Heynen, 2013) that might form a basis for political analysis and that has been part of feminist and post-structuralist research in UPE. The unequal distribution of agency in its human form has been problematized in UPE through analysis of flows of power (Berkes & Folke, 1998; Kobayashi & Peak, 1994; Reed & Christie, 2009 for a discussion of gendered information). Heynen (2013) emphasizes that, though the body of UPE literature has expanded and matured, nature, as an object of research, has been under-theorized (with the notable exception of the philosophical/theoretical work of Loftus, 2012). There is a lack of empirical research focused primarily on theorizing nature in a context of local power. This research gap is addressed here through an empirical reading of nature as a social object within urban planning. Because smaller cities are a demographic sector experiencing exceptional growth (globally NRC, 2003; U.S. Vey & Forman, 2000), these cities create a unique opportunity for research regarding planning processes within a context of sustained growth. This paper examines notions of nature within planning processes in the medium-sized city of Nayoras, California through participant observation and ethnographic interviews. Here, discursive forms such as the quotes from Abdur and Jefferson are a proxy for local social processes as well as a generative tool used to mediate the experience of, attitudes toward and management of the natural world.

Research in urban political ecology provides needed legibility at the cognitive borderland between nature and society, a persistent division in the western worldview (Nik Heynen, 2013). A premise of this paper is that this divide is a social creation with a historical and cultural trajectory that, in the aggregate, produces impacts on people and things (Latour, 1993). Problematizing nature as a social object in local planning processes illuminates hidden flows of power where nature is often misrecognized or ignored (Gandy, 2012) because of economic, cultural and social networks that structure competition for resources. In this light, Bourdieu's field theory is used to analyze concepts of nature in City of Nayoras planning processes. Bourdieu's work provides an overtly politicized focus to local planning that gives legibility to socially hidden facets of an immanent nature.

Methodology

Fieldwork for the project took place over a period of six months in the City of Nayoras, a Central California city of several hundred thousand people. Data include field notes, archival material (mainly planning documents, meeting minutes, and agendas), participant observation, informal conversations and semi-structured interviews. The researcher spent several hundred hours in the field from June to December of 2013. A second round of data, centered on a City of Nayoras water rate increase, was collected in focus groups during the fall of 2014. An interview protocol, included as an appendix, was used in the first round of interviews (Patton, 1990). Using language as a proxy, this protocol was designed to uncover the implicit worldview used by informants considered planning experts. Semi-structured interviews provided benefits in three areas: evaluation by university leadership, consistency between different interviewers, and efficiency within a time-constrained framework.

The research lent itself to the case study method as outlined by Yin (1984). This method is useful when applied to settings in which several observable phenomena are evident within present-day contexts and where the nature of the interconnection between the setting and these occurrences is unclear. The case study method allows for use of varied data sources (Yin, 1984). Inductive coding of data initially followed an anthropological method (Spradley, 1979, 1980) with a focus on types and flows of information including Geographic Information Systems (GIS). Initial results from this initial analysis led to subsequent rounds of coding focused on emergent themes relating to organization of social space and stores of capital in a Bourdieuian relational field. Terms used by informants from interviews and observation are off set throughout this paper by use of single quotations.

Theoretical Framework

Humans read nature through social constructs in power-laden settings, including local planning departments. Following Latour (1993, 2007), this social construction does not imply that material reality is imagined or that humans are the sole molders of outcomes in the natural world. Using the much-quoted words of Bourdieu, it does imply that the categories of "vision and division" (1996, p. 5) human's produce affect the management of increasingly fragile human affected natural systems. This moment in history is referred to as the Anthropocene because of the unique and increasingly catastrophic effects of human actions on the global biosphere. In an age where human impacts have left no part of the globe untouched, analyzing nature as a social object implies demystifying and politicizing cognitive simplifications of complex socio-natural systems. Linguistic and cognitive simplifications create a system of urban metabolism that affects extensive stores of resources well beyond city limits. Depending on the character of the constructs used in simplification, less understood natural dynamic processes may become functionally illegible to humans. In a world facing unprecedented environmental changes, a truly socio-natural legibility that addresses flows of power may be a key factor in any attempt to alter negative environmental outcomes.

The work of Bourdieu has been used in social science as a materialist method for analytically debunking the belief that social function is transparent. Bourdieu addresses material relations and objects, including people, that become lost in flows of power. Despite criticism that his theory is deterministic or static, its materialist emphasis has produced what Wacquant (1992), Bourdieu's former student and co-author, calls "a sociology of symbolic power" (p. 14) and what Bourdieu (1996) himself calls a description of "symbolic violence" (p. 3). Bourdieu's theory grants "that symbolic systems are social products that contribute to making the world" and which highlights the "contribution that various forms of symbolic violence make to the reproduction and transformation of structures of domination" (Wacquant, 1992, p. 14-15). Bourdieu outlines a theory of relations that maps social space through species of capital that give substance to these structures (Wacquant, 1991; Jenkins, 1981). The "tool kits" (Wacquant, 1992, p. 31) provided by concepts within Bourdieu's theory are constructed with the goal of solving social puzzles. Bourdieu's focus on

demystifying relations of power through capital flows in an expanded system of exchange speaks to social and political ecological struggles of the 21st century and the role of social processes in the production and reproduction of an immanent nature. This paper analyzes categories in planning processes used to read nature within a local field of power (based on structures and power derived from the state) and focuses on the ways these categories, along with the species of Bourdieuian capital (economic, cultural, social) connected to them, produce nature's illegibility.

Conclusions

Using Bourdieu's field theory, data analysis is centered on how informants perceived nature discursively and how this perception affected behavior. The following paragraphs are divided into four sections that reflect Bourdieu's three types of capital followed by an analysis of the local field of power. Notions of nature were discussed by informants in line with Bourdieu's concept of the visioning power of the state. Informants used discursive categories to structure competitive behavior and used personal agency to bend categories to meet their goals. In this context, the applied sciences were observed in a powerful position among other stores of capital, while the natural sciences occupied a much lower status. This analysis is not meant as a criticism of any applied discipline per se but, instead, is meant to indicate a lack of key ecological knowledge in local planning. Observation indicates that ecological processes central to positive environmental outcomes may be invisible to local planners in light of the dearth of explicit content from the natural sciences while also maintaining the inarguable importance of the applied sciences.

Economic Capital

Economic capital was a predominant theme during participant observation and interviews. Central categories fell roughly in three areas. In line with Marx, informants saw nature as a store of existing or future value for individuals and the community. This is expressed by a powerful development association representative: "There's not a drop [of water] out of the Sierras that doesn't belong to someone. Whether it's the environment or a contract or someone or something" (M. Perez, personal communication, September 13, 2013). The informant describes the high level of commodification of water in the Central Valley such that all the water that flows down from the Sierra snowpack has been allocated in appropriative or riparian contracts. Although dynamic ecological processes were not mentioned, static pools of natural stores or natural objects were seen largely through planning designations, usually for categories of land (e.g. 'smaller parcels,' 'universal access park,' 'greenfield development,' 'median islands') or components of highly commodified and engineered systems, especially water (e.g. 'water out of the Delta,' 'recharge,' 'storage in the Sierras'). Sometimes modifiers were added to these terms to denote the object's possible future place in a planning process involving commodification. Land was seen almost exclusively in terms of land use designations that speak to a hierarchy within a pre-development land market: an 'easy patch of land' is a parcel which fits economic needs in size or shape without much additional cost, 'an empty piece of property' or 'a dirt field' is a parcel with no buildings (equivalent

discursively to a parcel with very low ecological productivity, bare earth). Words like 'easy' and 'empty' refer solely to economic processes for which the city structures a field of power. Competition is waged in this field for economic benefits connected to pieces of nature situated on a continuum of adequacy in the building process.

Second, informants saw metabolism of parcels of land in terms of risk management, a growing foundation for local fiscal stability. According to informants the mode of expansion for infrastructure build out comes in relatively infrequent moments of debt accrual often associated directly with infrastructure build out. Accompanied by increasingly present risk management structures, public infrastructure 'improvements' (e.g. water, sewer, storm drains) enable real estate to enter into productive activity. Risk management was considered 'internal' (as opposed to 'public') to high status management spheres in the local field of power and was seen as highly technical by informants. Changing economic practice has shifted the perception of risk management from mechanisms within a largely *external* market to decidedly internalized processes closely coupled with moments of proposed infrastructure build out and urban metabolism of land. Informants from diverse roles and status saw these moments of intensive risk management as impacting 'cash flow.' For example, negative press from conflict over environmental concerns was perceived as affecting future cash flow through possible effects on the city's bond rating (similar to an individual's credit score). This result echoes Beck: "risks become the all-embracing background for perceiving the world" (2000, p. 218). Through risk management tools local government has created a system of perception of nature structured by the language of finance. These discursive frames seep into material work expectations and the vocabulary expected from experts in the field of power, eventually limiting the type of future imagined for the city and codified in the general plan and the development code.

Third, specific natural objects were seen as providing amenities to neighborhoods in ways that spoke to the positionality of geographic sub-regions within the city, in other words, residents socialized by advocacy efforts competed for particular natural objects. 'Amenities' were seen as signs of a neighborhood's status among other neighborhoods and this vision limited the character of advocacy efforts, notably those that might have been directed toward alternative cultural visions of urban nature. 'Street trees,' sidewalks with 'landscaped areas,' and 'urban green space' were requested by residents as economic markers indicating that a neighborhood matters. These amenities were seen as similar in category to other less natural objects that form part of the distributive network of infrastructure such as streets (e.g. maintenance of potholes, stop signs, speed bumps). When given the opportunity, residents who had visited other urban areas pointed to these amenities as desirable changes. A city staff member regularly charged with gathering community input states:

> Several of the residents were concerned about the need for green space in that area that you know they hear on the television for example the need for green space and childhood obesity and what they have to do to reduce weight and…'And yet we don't have anything around us

> where we can exercise in a safe manner…' (I. Yero, personal communication, August 16, 2013)

While provision of shade or cultural considerations were important aspects of consideration, there was also a decidedly social facet to resident's thinking about which that planners and advocates commented in interviews. Certain amenities are present in neighborhoods with higher status (Bourdieu's autonomous pole). A lack of these physical stores was seen as privation and taken as a sign that an area was less consequential than it could be. Autochthonous categories for natural objects among immigrant groups (e.g. urban farming, creative/ethnic landscape architecture, a sense of dependence on nature) though often extremely important to residents were much less present as signs of status. These objects were reserved for other fields (i.e. racial fields and cultural production). This pattern indicated that categories of management from applied science and planning closer to the autonomous pole, filter down to heteronomous social space within the local field of power. The resulting reading of status among social actors affected environmental outcomes in that advocacy efforts were based on learned understandings of what was possible. This pattern reflects the surprisingly isomorphic nature of the field across language barriers (Nayoras has scores of language groups) as well as the power of applied science in shaping cultural expectations of urban form as well as readings of nature.

Cultural Capital

Bourdieu's species of cultural capital are central to flows of power in his field theory. In this case, the extremely low position of expressions of naturally oriented cultural capital in planning processes produced nature's illegibility in terms of ecological function. The positionality of cultural capital in the local field of power created a system of attitudes and behaviors that, through schooled ignorance, overlooked the mundane nature that is in constant interaction with resident bodies. The systemic (symbolic) violence that resulted stemmed less from intention than an inability to perceive systems through the lens of natural science.

The embodied form

Often misrecognized as skill, social actors read embodied forms of cultural capital as signs of prestige and competence. Bourdieuian embodied cultural capital takes many forms that mark bodies in terms of positionality in fields of competition, including things like mannerisms and clothing. For the sake of brevity, this paper will focus on discursive forms of cultural capital. Within embodied cultural practice in Nayoras planning processes, nature is notable for its implicit presence and discursive absence. Characteristics that were related to competency among informants were framed with limited knowledge of ecological function. Instead informants employed the language of public policy, engineering and a discourse of sustainability (often devoid of technical substance) to categorize things that could be considered natural: 'parcel,' 'groundwater,' 'water table,' 'urban tree forest,' 'recycled water,' 'recharge,' 'universal access park,' and 'storm water drainage.' Other less technical terms for nature or equally technical terms from the natural sciences were almost completely

absent. This discursive pattern was related to attitudes about the kind of people who are most qualified to give input about planning decisions. For example, a manager in the water division stated: "…people say emotional things about water without any understanding…of the practical world" (M. Quist, personal communication, August 17, 2013). Later this manager adds that what is actually needed in policy decisions is "a very robust tactical discussion in terms of what really are the problems and what really are the causes of those problems and what really are the opportunities. What are the real risks? A very robust conversation between…technically proficient and competent people" (M. Quist, personal communication, August 23, 2013). Here the informant describes in detail the characteristics--i.e. embodied cultural capital--that communicates expertise and knowledge within planning processes.

In the minds of expert informants, participants that belong in committee meetings in which the future of valuable resources are at stake should display a cultural capital of technical expertise sufficient to add to a 'tactical' discussion of details. One planning staff, an engineer, described the learning that took place before she felt able to participate: "So we think that these things are going to be a piece of cake and it wasn't. All of a sudden you're being asked to scope this project…from 10,000 feet. How do you do that?...My idea [was that] planning—you know, the way terms were used, the way people communicated—was language that was very internal to their profession and sometimes alienating" (M. Abner, personal communication, September 15, 2013). Even highly trained city staff learned to display language that was similar to other expert staff in order to align themselves discursively with the autonomous pole in a local field of power. In other cases in which committee members lacked the desired technical expertise, knowledge of the rules of the planning game and avoidance of conflict that might change the visionary direction of the project made less skilled individuals appear fit for participation.

The objectified form

Observations about the objectified state of cultural capital, the "(pictures, books, dictionaries, instruments, machines, etc.), which are the trace or realization of theories or critique of these theories" (Bourdieu, 1986, p. 47), resulted in a complex and intricate network of capital in the local field of power. This section describes objects related to the representation of nature in maps or codified documents and the perceived change in techno-natural systems that planning efforts have produced over time. These objectified stores of cultural capital are either representations of or are the material product of theory and reveal social patterns and categories that speak to nature as a social object.

First, objectified information about resource delivery systems and other natural objects in the form of GIS, databases, and digital and paper maps had multiple levels of function. Their formal purpose was to provide a simplified and layered visual/spatial summary of distribution systems such as water, sewer, recreation and housing. But mapping technologies were also used informally as tools to regulate flows of power. Mapping objects had positionalities in and of themselves in the local field related to their speed and power to deliver information. For example, in Nayoras

the water division is an offsite and largely bureaucratic division in which GIS is not used. Instead the water division uses paper maps for day-to-day function related to water delivery and billing to the public. Among high-level staff a GIS is a high-status object used to provide visioning and vetting tools for planning projects. Although a large quantity of geographical and other data is available to the public in shapefile format on the city's Website, this information is rarely accessed. Finally, GIS based information was viewed widely as an 'internal' tool suitable for high level staff. Staff related this to the heightened sense of danger regarding possible terrorist attacks and, as described below, to the changing structure of public space. After 9/11 an initial public GIS system was disabled because of fear of "sewer and water system information [becoming] publicly available to anonymous users" (email communication May 30, 2014). The current system addresses this issue by maintaining three separate user capabilities so that the most sensitive information can be closely monitored. The free version is accessible to everyone but does not contain sewer or water information. The other two systems provide the same meticulously maintained content but are used by 'internal' development subscribers and by city staff.

In Nayoras moments of vision casting regarding future planning efforts (later fleshed out and codified in documents) occurred apart from deliberative public processes. Planning projects, often including delivery systems for water, sewer and land use, are a central mechanism for managing future metabolism of these resources. It was during 'internal' deliberations between a few expert staff, the mayor and, subsequently, hired consults that the majority of this content was formulated. One former planning staff stated that there was "no public involvement" in many important development decisions (M. Peeve, personal communication, August 15, 2013). The director of the water division expressed motivations behind this 'internal' visioning of future distributive structure: "The more I involve the public, the more hassles I have. [The process] was public in a sense… but we didn't invite the public…The public didn't have access to this information…It didn't go to council…It's not public because politics starts to play a part and politics screws it up" (M. Quist, interview, August 23, 2012). The informant expresses the perceived status of 'the public' in planning of distributive networks that are formally public in character. 'The public' was not considered knowledgeable enough to participate in the codification process for planning efforts that might affect other capital stores (e.g. personal cultural capital or economic capital). Because of this, by the time these decisions reached City Council deliberation and vote, they were largely binary in character, i.e. accept or reject a completed plan in which most of the content conforms to the vision of high level staff later fleshed out by consultants. One planning staff person stated: "We use consultants to help. They sort of set the stage, they set it up for us." (M. Abner, personal communication, September 5, 2013). Time added to this dynamic. As planning documents were formulated through 'internal' channels that sometimes took years with one or more changes in City Council make-up, elected officials or 'the public' had no viable opportunity to use the highest quality information systems available to them.

There was also a difference in the positioning of objectified cultural capital produced by planning processes. This positioning often seemed to be intentionally hidden behind a spectacle of city council deliberation and was reflected in admonitions to city staff that political credit seeking was considered untoward. This allowed objectified staff products in Nayoras to go largely unchallenged in public deliberation. In another example of a similar dynamic, a large amount of staff time, sometimes five years or more, was dedicated to General Plan updates that sometimes included the Development Code (a document that codifies the type of urban form that is applied mainly to new development). The General Plan in comparison to the Development Code was much less meaningful for guiding implementation. City Hall, through the code enforcement department, could use force (e.g. code infractions) to ensure code guidelines were followed while the General Plan is not subject to compliance mechanisms. It became clear that the General Plan was used to channel low status 'public' input regarding resource visions molded in more dominant sectors of social space. This allowed advocacy groups and 'the public' to feel that they had participated without the city needing to change central components of planning practice. Within smaller planning efforts informants also expressed a sense of dependence by elected officials on staff input for resource visioning, specifically the pervasive 'staff report'. This unassuming object codified the applied scientific expertise held by professional staff and became a store of cultural capital in the local field of power. During spectacle-like City Council deliberations council members asked questions of expert staff but demonstrated political restraint in the face of high stores of cultural capital objectified in the staff report. Councilmembers sometimes rejected staff suggestions in yes or no votes but avoided challenging them directly. In these ways, the place of applied scientific expertise was close to the autonomous pole of social space in every instance it was observed.

Discussion

In summary, these results speak to the power of academic knowledge to structure the production of nature through local planning. Following Becker (1953), the physical effects of an object are mediated by a social learning. Physical effects alone do not determine the eventual meaning and subsequent use of an object. In this way, the type of social object any material thing becomes over time is molded by the meaning actors use to experience it and with which actors read it for others. Scholars of infrastructure note that systems of infrastructure often become invisible in local government because natural crises (floods, irrigation, water quality) are well-managed by formal structures that require little attention (Melosi, 2001, 2008; Star, 1999; Schott, 2004; Peluso, 2012; Varnelis, n.d.). What is left after these inarguably important facets of collective management are the human categories used to design systems of distribution, regulation and control of nature expressed through the applied sciences.

In Nayoras planning processes, the analysis of Bourdieu's economic, cultural and social capital revealed that applied academic knowledge is used in ways that regulate human behavior apparently unconnected with its technical content. The abstract and financialized character of economic capital have become powerful motivators for

action with both individual and organizational implications. Even the political behavior of neighborhood advocates at the heteronomous pole of social space were affected by academic categories that filter isomorphically to them. The embodied and objectified forms of cultural capital marked the belonging of bodies, things, and organizations within networks of relationships among perceived equals. This capital was used to create opposing 'internal' and 'public' realms of participation along axes of power that defended expert knowledge and limited alternative readings of natural capital. This partitioning was also observed in codified public documents that had extremely variable impact on planning outcomes but that were not represented as such to the public.

Following Latour, much of the power of science lies in its ability to shape thought, in other words, in the production of a dominant reading of a unified social and material world. For Bourdieu, if the social hierarchies hidden within this reading are not problematized—through analysis of capital stores within a broader system of trans-economic exchange—even well-meaning social science may contribute to the misrecognition of the flows of power institutionalized in its products. The results of this paper suggest that existing ecological knowledge may not be part of the reading of nature in local planning because of the dominance of applied science. This paper argues that use of knowledge from the natural sciences may be a low cost-high reward strategy for improving local ecological outcomes through increased legibility of dynamic systems from which ecosystem services flow. The caveat is added that existing flows of power, specifically the network of professional organizations described above are key to meaningful expansion of an applied scientific knowledge base. Observations in Nayoras indicate that this knowledge may be consistently absent within the mundane planning and maintenance of the natural capital within the urban purview. More effective knowledge dissemination is vital in an age that presents global environmental challenges that are directly related to the social processes that produce these effects and in which liberation from socially opaque systems that hide humanity's underlying material relations may be the biggest stake science has ever faced.

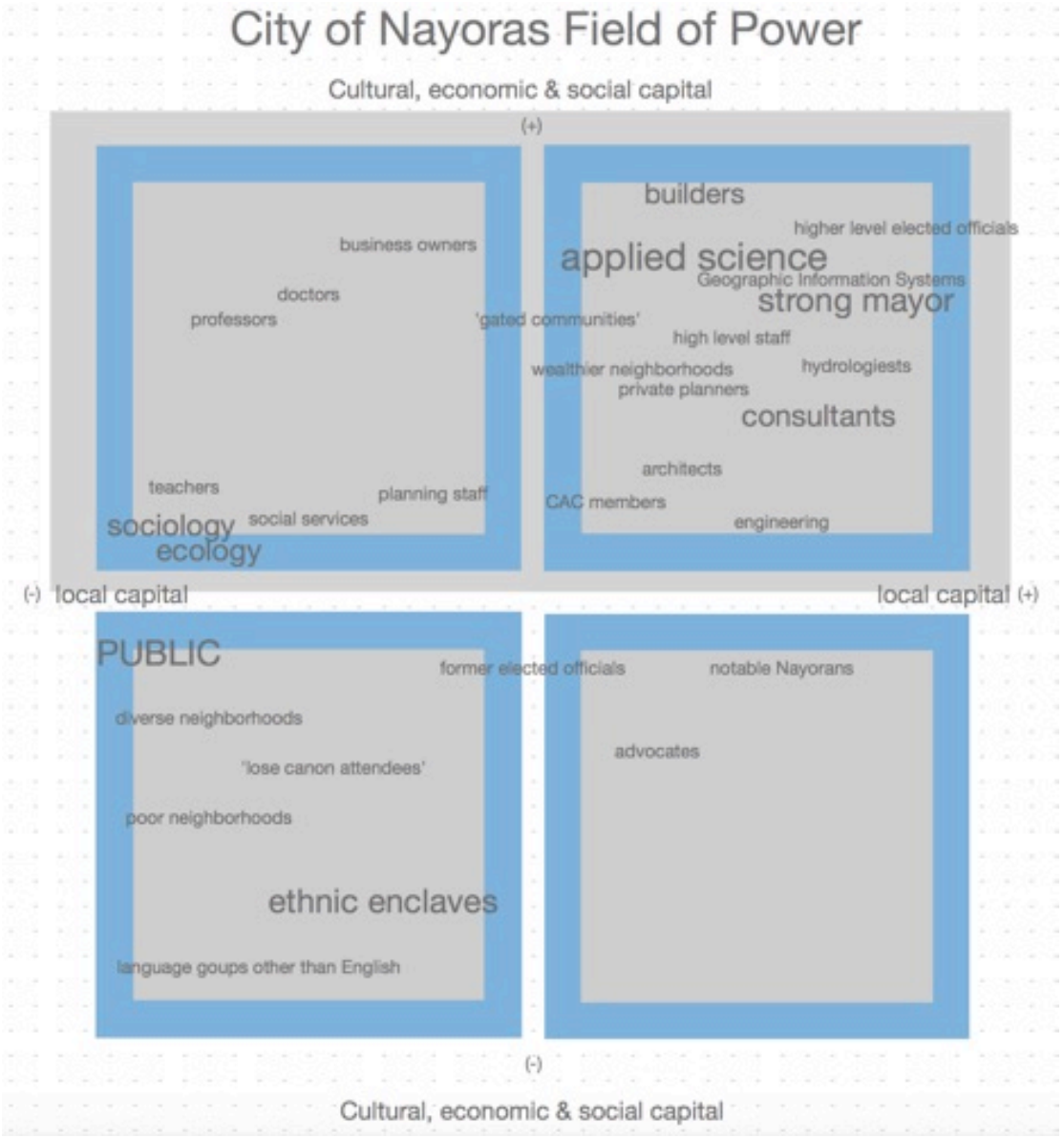

Figure #1: City of Nayoras locality field of power

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