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Institutional Theory and the Natural Environment: Research In (And On) the Anthropocene

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ABSTRACT

This review article summarizes some of the main tenets of institutional theory as they apply to the domain of organization and the natural environment (O&NE). But it is distinctive from other reviews for two reasons: first, it is focused on providing avenues for research in the Anthropocene Era. Second, while based on the trajectory of current, accumulated theory and research, this paper is forward-looking in its orientation, guiding future work to explore the emergence of a new social reality in Anthropocene Society. We begin with a summary of scientific research on the Anthropocene Era, then move to its implications for grand and mid-range institutional theory principles. We then discuss how institutional research might be used to inform societal recognition, transition and response to the Anthropocene shift, and conclude with a call to re-energize and re-radicalize the O&NE field to properly address the magnitude and scope of this shift.

(148 words)

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INSTITUTIONAL THEORY AND THE NATURAL ENVIRONMENT: RESEARCH IN (AND ON) THE ANTHROPOCENE

> *"The Anthropocene represents a new phase in the history of both humankind and of the Earth, when natural forces and human forces became intertwined, so that the fate of one determines the fate of the other. Geologically, this is a remarkable episode in the history of this planet."* (Zalasiewicz, Williams, Steffen and Crutzen, 2010).

Since the Industrial Revolution began two centuries ago, humankind has surpassed all previous efforts to shape nature for its needs and begun to rival or even exceed other natural forces in their influence (Bressan, 2011). Humans use the majority of natural geo-resources - like minerals, rocks, soil and water - and thereby play a new and central role in geology and ecology. To call attention to this emergent reality, geologists have introduced the concept of the Anthropocene as a way to mark a new geological era in which humans are now leaving a permanent and unprecedented geological marker in the stratospheric record of the planet (Crutzen and Stoermer, 2000).

But, just as important as the recognition of this geological shift is the resultant contemporary challenge the Anthropocene creates to the institutionalized belief structures upon which society is based. The Anthropocene Era represents an emergent awareness of a fundamental change in the intellectual, cultural and psychological conceptions of who we are as humans and how we relate to the world around us. In response, we can begin to envision a social response, what is referred to as Anthropocene Society (Palson et al., 2013), as a new form of social structure that accepts and engages that new reality. Both the Anthropocene Era and Anthropocene Society are unprecedented in scope and import, and offer challenges and opportunities to the many theories used to explain the relationship between organizations and the natural environment (O&NE). In this paper, we explore the

past and future application of institutional theory, one of the most vibrant and well-recognized perspectives within O&NE (Greenwood, Hinings and Jennings, forthcoming; Hoffman and Georg, 2013; Hoffman and Bansal, 2012) to explore the critical relationship between the recognition of the present Anthropocene Era and future Anthropocene Society.

Institutional theory is well suited to this task. Its vibrancy and visibility are due, in large part, to its distinctive stance on environmental phenomena. Institutional theory emphasizes environmental problems as being not primarily technological or economic in character, but behavioral and cultural. While technological and economic activity may be the direct cause of environmentally destructive behavior, it is our individual beliefs, cultural norms, and societal institutions that guide the development of that activity (Hoffman and Jennings, 2012; Bazerman and Hoffman, 1999). So, as humankind embarks on this new reality of assuming a guiding role in the operation of the world's natural systems, we must begin to ask what this means for the institutions of society and how we understand them.

In this review article, we examine the implications of being in the Anthropocene Era for main tenets of institutional theory as they apply to the domain of O&NE, and, reciprocally, the implications of modified versions of institutional theory for the study of Anthropocene Society. The tenets of institutional theory are expressed in well-known books, reviews, and journal articles found in the organizations literature (e.g., Thornton, Ocasio and Lounsbury, 2012; Greenwood, Hinings and Jennings, 2011, 2008; Lawrence, Suddaby and Leca, 2009; Scott, 2001; Powell and DiMaggio, 1991), as well as in sociology, political science, and psychology. The application of that theory to the natural environment

is based on our synthesizing efforts in the field (Greenwood, Jennings and Hinings, forthcoming; Hoffman and Georg, 2013; Hoffman and Bansal, 2012;Hoffman and Jennings, 2012; Jennings and Zandbergen, 1995) and the corpus of institutional research in O&NE more broadly. However, our own review is distinctive from these prior reviewers in at least two ways: first, it focuses on an as yet unstudied, but important phenomenon, the emergent recognition of the Anthropocene Era (Crutzen and Stoermer, 2000), and, second, as a result of that focus, the review is much more forward-looking in its orientation. As such, our paper is far more than an historical treatise on the evolution of institutional theory. It is a reexamination of the theory in light of a new reality and an attempt to steer institutional research towards organizations as they operate in Anthropocene Society.

To develop the implications of the Anthropocene Era for institutional theory, and modified institutional theory for the study of Anthropocene Society, we proceed with four sections. The first reviews the nature of the Anthropocene, both as a physical and an institutional shift, in order that the reader may have some feel for the future that we examine with our theoretical and empirical tools. The second section discusses ways in which the Era is examined by and modifies existing institutional theory principles. The third section explores different institutional paths to alternate Anthropocene social orders, and the final section summarizes our contributions and makes a call for energetic O&NE research on the Anthropocene.

THE CHANGING NATURE OF NATURE: ECOSYSTEMS, BIOSPHERES, AND THE ANTHROPOCENE ERA

Nature has been linked to social and organizational systems through a variety of conceptualizations including ecology, environmental protection, sustainable development

and others. The most current and sweeping conceptualization of that link - the Anthropocene - refers to an emergent epoch in which humans have a documentable, substantial impact on terrestrial ecosystems (Zalasiewicz, Williams, Steffen and Crutzen, 2010; Crutzen, 2002; Crutzen and Stoermer, 2000). As put by some of the key proponents of the concept:

> "The Earth has endured changes sufficient to leave a global stratigraphic signature distinct from that of the Holocene or of previous Pleistocene interglacial phases, encompassing novel biotic, sedimentary, and geochemical change. These changes, although likely only in their initial phases, are sufficiently distinct and robustly established for suggestions of a Holocene–Anthropocene boundary in the recent historical past to be geologically reasonable." (Zalasiewicz, Williams, Steffen and Crutzen, 2010: p. 1).

Debate over this concept has taken place primarily within the realm of the physical sciences. We provide a summary of that discussion and add to the debate by connecting it to the social sciences and institutional theory (Hoffman and Jennings, 2012).

The Anthropocene Era as a Shift in the Geophysical Reality

The Anthropocene Era is a proposed new geologic epoch, one that acknowledges that humans are now a primary operating element in the Earth's ecosystems (Crutzen and Stoermer, 2000). This era is argued to have started around the industrial revolution of the early 1800s, and has become more acute since "the Great Acceleration" around 1950 onwards (Steffen, Crutzen and McNeil, 2007). It is marked by the reality that: "Human activity has transformed between a third and a half of the land surface of the planet; Many of the world's major rivers have been dammed or diverted; Fertilizer plants produce more nitrogen than is fixed naturally by all terrestrial ecosystems; Humans use more than half of

the world's readily accessible freshwater runoff" (Crutzen, 2002: 23).

One group of geophysicists have sought to create more clarity on the concept by identifying key biotic and geochemical markers or "planetary boundaries" (Rockstrom et al., 2009) that represent "thresholds below which humanity can safely operate and beyond which the stability of planetary-scale systems cannot be relied upon" (Gillings and Hagan-Lawson, 2014: 2). Nine have been isolated: climate change, ocean acidification, ozone depletion, atmospheric aerosol loading, phosphorous and nitrogen cycles, global freshwater use, land system change, loss of biodiversity and chemical pollution (Gillings and Hagan-Lawson, 2014). "Unless there is a global catastrophe such as a meteorite impact, world war or pandemic," these planetary boundaries will continue to be approached as "mankind will remain a major environmental force for many millennia" (Crutzen, 2002: 23). Indeed, scientists believe that three have been exceeded: climate change, biodiversity loss and the nitrogen cycle (Rockstrom et al., 2009).

While many within geophysical and stratigraphy groups have agreed that the term is worthy of formal consideration (Zalasiewicz, Williams, Steffen and Crutzen, 2010), and a journal - *The Anthropocene Review* - has been created to focus research in scientific circles, the concept has not yet received formal recognition. In terms of science, acknowledging an unprecedented shift in our geophysical reality would be a significant event. It would lead to recognition that we have adopted a demonstrable role in global ecosystems and create avenues for accepting that role by reducing impact through behavior and technological change and increasing impact through deliberate "geo-engineering" manipulations of climatic moderation, sequestration, and amelioration systems (Crutzen, 2002). In short, the technical and scientific response to the Anthropocene represents a shift in our social,

cultural and institutional structures.

The Anthropocene Era as a Shift in the Social Reality

Recognition of the Anthropocene Era has broad implications for our social structures and some of the foundations for the research agenda that studies them. Most importantly, the Anthropocene Era requires us to re-order our conceptualizations of primacy in the relationship between the natural and social systems, one which subverts most prior frameworks. While most theories and models of organizational action offer only loose connections between the natural and social spheres (Gladwin, Kennelly and Krause, 1995) and much O&NE research has sought to correct this deficiency by depicting the biosphere (including the sinks, sources, and drivers of ecosystems health) as the domain that encompasses such organizational and social activity (Lovelock, 2000; Jennings and Zandbergen, 1995; Hawken, 1993) , these depictions call for moves to integrate environmental considerations into human systems in order to avoid the anthropogenic calamities of limits to growth models (Meadows, Meadows, Randers and Behrens, 1972).

But, the Anthropocene Era calls for a shift in that ordering. Rather than fit environmental considerations into social systems, it is a statement that social systems are intruding upon natural systems. The Anthropocene Era brings considerations for sustainability into a new orientation, one that requires, not an adjustment of social systems to the limits set by the biosphere, but recognition of the planetary boundaries beyond which social systems should not go but already have. Climate change, droughts, wildfires, food insecurity, water scarcity, and the social unrest that results: these are all emergent markers of the Anthropocene Era that point to a fundamental system failure created by our

social structures. We now have control over the biosphere and therefore, the human systems which depend on it, in ways that are monumental.

With this kind of a re-ordering, the Anthropocene Era expands beyond prior institutionalized concepts of environmental concern including pollution control, waste minimization, environmental management (e.g., "eco-efficiency") and even the most sweeping concept that is influencing O&NE research today - "sustainability" – whether examined from an environmental (Young and Dhanda, 2013) or social point of view (Greenwood, Hinings and Jennings, forthcoming; Soderstrom and Weber, 2011). Sustainability builds on the Rio Accord definition: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987: 43) and as thus defined, is inherently about reaching some form of equilibrium for the optimized benefit of human populations. Such equilibrium is a hallmark of Holocene depictions of a stable and secure environment for human existence. But a fundamental acceptance of the Anthropocene Era would mean embracing the notions of shifts, variation, complexity, and the increasing need to adapt in an uncertain world. It means embracing a new understanding of the animating forces of nature and the role that humans play within them. The goal of sustainable development therefore, like that of the Rio Accord, while laudable, would now seem to be the wrong goal given the epochal nature of the Anthropocene Era and the degree and type of change it represents (Ehrenfeld and Hoffman, 2013).

Recognition of the Anthropocene Era signals an urgency and complexity that sustainable development lacks, compelling change deep within the structures of our collective understanding of the world around us. "The Anthropocene is not a problem for

which there can be a solution. Rather, it names an emergent set of geo-social conditions that already fundamentally structure the horizon of human existence. It is thus not a new factor that can be accommodated within existing conceptual frameworks, including those within which policy is developed, but signals a profound shift in the human relation to the planet that questions the very foundations of these frameworks themselves" (Rowan, 2014: 9).

A response to the Anthropocene Era calls for a new and as yet undefined social order called Anthropocene Society that transforms many preexisting beliefs within multiple segments of society. The accompanying tensions that such a shift will create can be vividly observed in the currently polarized debate over climate change, one of the planetary boundaries of the Anthropocene (Hoffman, 2015, 2012, 2011a, 2011b; Lefsrud and Meyer, 2012; Hulme, 2009). The cultural and ideological elements of religion, government, ideology and worldviews that animate the climate change debate offer a glimpse into the institutional and cultural dimensions of recognition of the Anthropocene Era and the evolution to Anthropocene Society.

As we discussed below, the complex combination of factors just described leads to both an application and a re-examination of institutional theory in light of complex socio-environmental systems and thinking, and an incorporation of more sophisticated notions of resilience, modularity, and de-coupled institutions (Perrow, 2011). We will now turn to the implications of the Anthropocene Era for institutional theory research on O&NE.

INSTITUTIONAL THEORY AND THE ANTHROPOCENE ERA

Because it is a new paradigm, the Anthropocene Era can be viewed, like any new

paradigm for seeing the world, as a contested terrain in which competing interests and movements engage in discursive debates – or "paradigm wars" – over the interpretation of the problem and the necessity and nature of responses. From a social science standpoint, paradigm wars require a reconsideration of the philosophical underpinnings of theory and of more specific theoretical claims about the operation of the world (Westwood and Clegg, 2009; White, 1992). Our focus on institutional theory is built on this foundation.

We begin by considering the implications of the Anthropocene for the fundamental theoretical principles underlying institutional theory; that is, for the theory's ontology (nature of existence and knowledge) and epistemology (means of knowing), which are part of "Gnosis" (knowing). Next, we turn to the institutional theoretic views of the three questions considered fundamental to the empirical phenomena as hand: 1) What is the socially constructed nature of the Anthropocene Era? 2) What processes might guide the recognition of the Anthropocene Era and the emergence of Anthropocene Society? and 3) What possible social orders might emerge in Anthropocene Society, and how might they be guided in less dystopic directions? These four sections of "gnosis", problem, processes and response and their subsections -- which are summarized in table 1 -- are not meant to be an exhaustive list. Rather they are presented as the foundation for a broader proposed shift in the focus of O&NE research.

INSERT TABLE 1 HERE

Gnosis: The Fundamental Principles of Institutional Theory

Gnosis refers to higher order knowledge, often of a more transcendental nature. Gnosis is about how we understand ourselves and the world around us. The Anthropocene

Era challenges our technical and scientific ways of understanding the environment and how they change on both regional and global scales. In social science and philosophical terms, the Anthropocene Era leads to a transformative cultural shift that is akin to the Enlightenment of the 17th and 18th centuries. The Enlightenment marked an emergent period in which knowledge and our understanding of the natural world was advanced through the scientific method rather than tradition, superstition, and religion, and was built on a shift from perceiving nature as subsuming the human endeavor, to one in which humankind embarked on the "conquest of nature" and a metaphor of the planet as an enemy to be subdued (Mirzoeff, 2014). In ways that are described below, the Anthropocene Era is an acknowledgement that the very same scientific method essential to the Enlightenment is no longer fully adequate to understand the natural world and our impact upon it. Equally important, it is recognition that the conquest of nature is a pursuit that leads to multiple unintended consequences for which we are unprepared to understand. We have become "the stewards of life's continuity on earth. We did not ask for this role, but we cannot abjure it. We may not be suited to it, but here we are" (Gould, 1991).

A person cannot really learn about the Anthropocene through personal experience. For example, while extreme weather patterns have increased the social consensus on climate change (Borik and Rabe, 2012), a real appreciation of the issue requires an understanding of large-scale systems through "big data" models. Moreover, both the knowledge of these models and an appreciation for how they work require deep scientific knowledge about complex dynamic systems and the ways in which feedback loops, time delays, accumulations, and nonlinearities operate within them (Sterman, 2011). Even for those devoted to studying the Anthropocene Era, there will be unusual intellectual

challenges. The process of global environmental change unfolds between complex and multiple bio-geophysical systems with possible non-linear dynamics (Galaz et al., 2012). Where the Holocene Era offered a relatively stable environment which allowed humans to develop agriculture, establish settlements, and create modern civilization, the Anthropocene Era represents a new period in which climatic and biogeochemical instability will provide a less predictably livable environment for human society (Gillings and Hagan-Lawson, 2014). This requires an adjustment in science around a "new normal," one where our existing knowledge base ensconced in equilibrium models and plots of evolutionary paths will become less valid. The Anthropocene Era will require an appreciation of new integrative research themes around issues such as thresholds and tipping points, time scales and time lags, spatial scales and boundaries and feedback loops (Harden et al., 2014). This, in turn, requires a willingness to re-examine some of the knowledge about the evolution of various environmental domains, such as regional climate variation, local ecosystems health, species diversity, and resource availability (most notably water and food) in ways that attach and nest this knowledge under the more generic phenomenon of social change.

If in the Anthropocene, the individual must rely on more informed and abstracted observations about the state of the world and scientists must create more holistic, complex, and non-linear models of various systems, then together these changes suggest that the average person's view of reality and that of science must become more closely linked. In addition, because in the Anthropocene, natural system changes are driven by human activity, there can no longer, at an ontological and epistemological level, be as strict a separation between objectivist and subjectivist or scientific and humanistic ways of

understanding the world (Palson et al., 2013). Landscapes and the environment must be understood as integrated with, and not separate from, human systems (Oldfield et al., 2014). There needs to be a combination and extension of multiple research perspectives from many disciplines that span the social sciences, natural sciences, humanities, arts and engineering to better predict and manage landscape change (Harden et al., 2014). This leads to what some are calling the inter-disciplinary and trans-disciplinary science of coupled Human-Environmental Systems (HES) (Seidl et al, 2013). An appreciation for HES has both 1) ontological and 2) epistemological implications for institutional theory.

Ontological Implications for Institutional Theory. Ontology refers to the nature of being or existence within a theory or perspective. Institutional theorists have long understood that though there is a fundamental philosophical divide between physical science and social science – e.g., between *Naturwissenshaten* and *Kulturwissenshaften* (Weber, 1919) - nature is understood through the cultural lens of society, not separate from it. Scientific observations, such as those about the impacts of DDT (Maguire and Hardy, 2009), are reframed by culture through debate and negotiation, such that what was once a beneficial chemical in the War on Poverty became a banned toxin from the prior era of imperialistic over-reach. Indeed, the actions of agents and acceptable solutions around these reframed scientific observations are equally a matter of culturally conditioned perspective. Chemical operations, once considered essential in industrial development, were later viewed as market forces that needed regulation and, more recently, as processes for demonstrating proactive social commitments (Hoffman, 1999). Being certain that institutional models retain this principle of meaning shift due to the changing nature of actors and negotiation is an important tenet for institutional ontology in the Anthropocene.

To understand such phenomena, institutional theory has long embraced multiple levels of analysis and complex systems of meaning and action (Parsons, 1967; Selznick, 1949). As Scott (2001) notes, these levels move from micro to meso to macro, and encompass everything from meaning for an individual to the rationalization of society due to the spread of the world polity. Most agree that the loci of action bridges levels and tends to be at a particular interface, though variants of institutional theory, such as institutional logics (Thornton, Ocasio and Lounsbury, 2012; Friedland and Alford, 1991) contrasted with institutional work (Lawrence, Suddaby and Leca, 2009), emphasize different specific loci of action. In the Anthropocene, this fundamental set of principles requires a reconsideration of levels and loci of action as they relate to meaning. The nine planetary boundaries and the action work around each are likely to form new domains of logic activity, each at multiple levels. In other words, each boundary area would benefit from being examined using multiple generic logics, such as markets, family, and religion, at multiple levels and with linkages that embed human activity and meaning.

In standard institutional systems, substantive and symbolic meanings are contested by various constituencies in complex, multi-level systems as part of the wider processes of rationalization and institutionalization. Through contestation and the attempts to attach new or changing interpretations to existing social structures, meaning is parsed out, systematized, and rationalized (Meyer and Scott, 1983). Weber (1919), for instance, was greatly interested in how religious charisma was routinized by its adherents and their practices. In other domains, like the natural environment, we see the rationalization of social movements, such as around recycling (Lounsbury, 2001), and sustainability programs in organizations (Bansal and Clelland, 2004). But in the Anthropocene Era, these

twin principles of rationalization and institutionalization are not as inexorable. The rationalization process in society revolves around the progression of bureaucratic and scientific forms and practices. Due to the increasing uncertainty of bureaucracy's and science's benefits, the already elaborated degree of each, and their complex interactions, rationalization may slow and its legitimacy will become more strained over time. Institutionalization would still be important within each domain of the Anthropocene, but whether there would be supra-system shift (world society, polity, or transnational arrangements) that might encourage more lasting institutionalization of standardized artifacts (constitutions, education, and so forth) is more debatable. In a world with increasing periods of scarcity and calamity, these international institutional systems might break down or fragment. The progressive deterioration of the planet may thus allow for more charisma and ideology to come to the foreground once again. In this way, symbolic and substantive meaning may shift away from the bureaucratic and scientific back to other systems of meaning, such as family and religion.

Epistemological Implications for Institutional Theory. Epistemology refers to the methods for building knowledge deemed to be legitimate by at least some audiences. Institutional theory researchers have drawn on the same methodologies as those used in other social science domains, ranging from game theory (Dixit and Nalebuff, 2008) to linguistics (Searle, 1979). Yet, the derived knowledge for institutionalists, unlike those in other disciplines, is "socially constructed" fact. The diffusion of these socially constructed facts, regardless of the specific field or domain, relies on institutional mechanisms. Hence, acceptance and diffusion of new ideas and practices follows similar patterns in domains such as finance (Davis, McAdam, Scott and Zald, 2005; Lounsbury, 2007), human resources

(Baron, Dobbin and Jennings, 1986; Dobbin and Sutton, 1998; Edelman, 1990), and computer technologies (McKendrick et al., 2003). But in the case of the Anthropocene Era, the applicability of standard hazard models to socially constructed observations and processes in that era is more debatable. The complex, interlocked systems of the Anthropocene Era would require institutional models to have multiple levels of analysis and to be built around critical thresholds and boundary conditions. In the case of linked rates of change, the various accelerations in greenhouse gas measures might be linked with diffusion of carbon mitigation technologies. For example, at the current CO_2 acceleration rate, the diffusion of cogeneration engine technology would accelerate - but only to the break point where temperatures no longer allowed for such technological options. As a result, the adoption may look more like boom and bust patterns rather than institutionalized adoption (Strang and Soule, 1998).

In the Anthropocene Era, models employing much vaster ("big") data may also allow for more refined and complex measurement of the interlocked, multilevel systems than our current models allow. Big data is based on a large number of data points – both longitudinally and by individual unit – and collected from widely connected, computer-based sources (Pentland, 2014). Data from green related applications, such as "greenApes," which measures individual carbon equivalents from practices (Orsato, 2014) or "ecological footprint" data which measures organizational or industrial footprint equivalents (Wackernagel and Rees, 1996), can be used to track the carbon-organization link as data for institutional models. Such data might not appear to be necessarily "institutional" in character. However, the measurement systems, the organizations consuming such data, and the bounds deemed to be acceptable are all institutionally constructed and built into

policy parameters. The responses of authorities in the system to such data, then, can be viewed as institutional outcomes (Gehman et al., 2012)

The Problem: The Socially Constructed Nature of the Anthropocene

If these ontological and epistemological challenges from the Anthropocene Era at a grand theory level are recognized, there will be implications for an institutional approach at the mid-range theory level around the fundamental questions of the Anthropocene Era. The first is the core issue of the Anthropocene: what is the nature of the problem? In institutional theory, actors within society only know an environment (economic or natural) through a process of social construction in which the actors in an institutional order are socialized, learn, reflect, and build a meaning system. The natural environment, then, is reflected through the various types of cultural cognition (schema, categories, and beliefs), the norms and peer group interactions, and the order's rules and laws. Discourse around an Anthropocene Era issue like climate change should become – needs to become -- more important for human action than the observed increase in greenhouse gases or the variation in temperature in a person's daily life (Schussler, Ruling and Wittenben, 2013; Hoffman, 2012; Hoffman and Jennings, 2012). Unfortunately, how people create relevant and urgent meaning around the issue depends on proximity and salience. For example, most people see climate change as distant in three ways: geographic (it will not affect their local reality), social (it will not impact people like themselves), and temporal (it will not affect them in the next 100 years or even ever) (Leiserowitz, 2005). This limits their understanding of the issue in significant ways related to 1) constructed meaning and 2) heterogeneity and deviance.

Constructed meaning. In the Anthropocene Era, we hope to see meaning developing around two specific concepts that have animated this paper: Anthropocene Era and Anthropocene Society. The first, Anthropocene Era, refers to the new geo-physical and social reality that alters our understanding and conceptualization of the world around us. The Anthropocene Era is not simply a problem seeking a solution, as in past conceptualizations of "green" and "environmental protection." The era portends a profound shift in the human relation to the planet that questions the very foundations of the existing social order (Rowan, 2014). The second concept, Anthropocene Society, refers to the future form of social order that responds to the emergent reality of the Anthropocene Era. Anthropocene Society invites a deeper consideration of the meaning, significance and consequences for culture, thought, values and politics (Johnson and Morehouse, 2014). Through complex social and political processes, the concept will be theorized in specific ways, which will then be manifested in rules, norms and beliefs at the local, national and global scales. While some may gain in this form of global change (e.g. some northern latitudes may enjoy increased plant growth and crop land), the majority of the world's inhabitants in Anthropocene Society will lose. Conversely, responses to such global change will also create an asymmetry of interests and value in Anthropocene Society. As a result, the conceptualization of both the era and society will be politically contested and open to exploitation by some (Zalasiewicz, Williams, Steffen and Crutzen, 2010).

However, at this point, it is evident that both constructs – Anthropocene Era and Anthropocene Society - are fundamentally under-developed. Attempts at theorization, of course, exist. These range from statements of cross-over scientists like David Suzuki about changing the balance between social and natural systems (1997), cross-over

anthropologists like Jarred Diamond (2005) about factors underlying the collapse of various cultures, or cross-over economists like Jeffrey Sachs (2006) about redistributing productive activity and wealth. A growing group of geophysicists who believe in the Anthropocene Era as a true epoch in natural history have begun, as noted above in our various citations, to discuss the era's societal implications (e.g., Harden et al., 2014; Palsson et al., 2013; Galaz et al, 2012; Steffen, Crutzen and McNeil, 2007) Within the O&NE literature, we see similar efforts, such as Vogel's (2012) discussion of public-private schemes to mitigate impacts and more culturally-oriented theses like Ehrenfeld and Hoffman (2013) which outline an alternative meaning of sustainability as "flourishing".

From an institutional theory standpoint, moving forward requires study of the constructs as they are being used in different groups, such as in physical scientific, social scientific, and policy discourse (Lefsrud and Meyer, 2012; Hoffman, 2011b). The prior paradigms around eco-efficiency and sustainability are easy to identify in such discourse through terms like pollution and climate change abatement. The newer paradigm and its constructed terms need to be distinguished through the creation of new terms, including variants of "the Anthropocene," but also around related elements, such as thresholds, boundaries and longer term time horizons (Bansal and Knox-Hayes, 2013). In effect, the geophysical discourse of physical science around the term needs to be examined in one dimension, and the social interpretations and translations of these effects in another, with linkages among these two dimensions tracked to determine the term's evolution. One could well imagine, for instance, that if climate change models were seen as temporary and based on the operation of the other eight planetary boundaries, this would influence the policy discussions of how much risk and advanced investment might be made. Certainly, the risk

profiles of operations and discourse around them would look very different in the Anthropocene Era than in the era of sustainability.

Heterogeneity of meaning and the celebration of deviance. In the era of sustainability and eco-efficiency, convergence on meaning and practice has been considered a good thing for the natural environment and consistent with institutionalization of environmental fields (Greenwood, Hinings and Jennings, forthcoming; Hoffman and Georg, 2013; Bansal, 2005). In the Anthropocene Era and Society, convergence as an outcome and as a key institutional concept is less important than divergence. The unstable, Anthropocene Era is manifest in different linked domains and cascades in non-linear fashion across them. This means that some appreciation of variety, complexity, and multiple domains is required (Greenwood, Hinings and Jennings, forthcoming), all related in much looser notions than convergence or equilibrium. It stands to reason that in Anthropocene Society, given the planetary scope and multiple geophysical domains in which these changes are manifest, there will be more fracturing of processes and diversity in their expression. Indeed the great differentials between north and south, polar and equatorial, oceanic and terrestrial, will exacerbate this fragmentation.

An issue for institutional theorists studying social construction is how such realities are sewn together into a partially sensible and intelligible pattern. This does not require the high degree of rationalism found in original expressions of institutional theory (e.g., Parsons, 1967; Weber, 1919), but flexible, bounded rationalities (March and Olsen, 1989), combined with emotive sensitivities (Friedland et al., 2014; Voronov and Vince, 2012). The tracking of relative levels of confusion and stress associated with various terms and their clusters (Lefsrud, Graves and Phillips, 2014) will be more important than the tracking of

any rational discourse around these memes.

This leads to a redirection from heterogeneity to deviance in institutional analyses. The claim that a new geological epoch exists, one that is the antithesis of the Holocene, has been considered partly a deviant act as the issue continues to be debated. The lack of complete acceptance in the face of growing evidence and ever-larger numbers of converts has also been discussed as an insider-outsider process (Steffen, Crutzen and McNeil, 2007). Furthermore, even if this notion of Anthropocene Era is accepted, the changing nature of knowledge within and across domains means that continued re-labelling and deviance are to be expected as the norm.

This deviance in language (e.g., concepts, labelling, ascriptions) will partly be manifest in social processes around the treatment of Anthropocene scientists, just as it has been for the antagonism towards climate change researchers (Schussler, Ruling and Wittenben, 2013; Feder, 2012). But this is not a fundamental difference in the social construction process by contested groups, which institutional theory has long examined in various institutionalization projects. What is a deeper change in social construction is around the likelihood of continued and even escalating deviance in language and action. If fragmentation along many geophysical lines is likely to occur, and coordination becomes more complex, then increasing social polarization is expected to give rise to different varieties of language and labelling of actions. One person's terrorist action against Anthropocene inducing establishments might be seen as another person's heroic sacrifice.

Institutional theory has spent the last fifteen years dealing with institutional change (see Greenwood et al., 2011 for a review), but has still not developed enough to discuss how deviance in language and practice themselves become the norm. Still, some of the

latest models on macro-micro change in logics (Thornton, Ocasio and Lounsbury, 2012) and complex responses to multiple logics (Greenwood, Hinings and Jennings, 2011) are a move in that direction. These models embed ongoing change via jolts, reflexivity and re-theorization. They also allow for hybrid practices and forms, which twenty years ago would have been considered a flawed outcome of a partially failed institutional process. As periods of oscillation increase in the nine threshold domains involved in planetary boundaries, the terms around these conditions and their societal consequences will oscillate and the adjustment to new thresholds will depend on moving through periods of deviant and less deviant language and practice. In the next one hundred years, institutionalization will depend on considerably more variation within institutional bounds than it did in the last one hundred.

The Processes: Institutional Change in the Anthropocene

While the constructed meaning of the Anthropocene becomes one dimension of the institutional literature that can be used to understand and explore this concept, a second set of considerations becomes one of process. How will society resist or transition to a new set of social values in Anthropocene Society, and how will these processes progress in the context of the prevailing social values and institutions of an earlier era in both the short and medium term? (Palsson et al, 2013). Such process considerations within institutional theory invoke multiple concepts and models around 1) the role of anomalous events, 2) the makeup of institutional fields, 3) the impact of social movements and institutional entrepreneurs within those fields, and 4) dependencies and discourse as deeper drivers or mechanisms for change.

Anomalous events. Shifts in the institutional order occur when a "cultural anomaly" of sufficient magnitude helps create a crisis within a given institutional paradigm (Hoffman and Jennings, 2011). Jointly or singly, cultural anomalies help push us into what Kuhn (1962) refers to as "revolutionary science," a period in which the pursuit of explanations and understanding results in the exploration of alternatives to long-held, taken-for-granted assumptions. "Cultural anomalies" signal the temporal and social nature of these events, especially the fundamental challenge they pose to actors' identities within an existing institutional order. Variously referred to as shocks (Fligstein, 1991), jolts (Meyer, 1982) or discontinuities (Lorange, Scott Morton and Ghoshal, 1986), events as cultural anomalies focus sustained public attention and invite the collective definition or redefinition of social problems and the actors themselves (Hoffman and Ocasio, 2001; Pride, 1995).

Within the O&NE literature, there has been a strong focus on evocative events like the ozone hole, Love Canal, Exxon-Valdez, Cuyahoga River Fire and others (Hoffman and Ocasio, 2001), the Deepwater Horizon oil spill (Hoffman and Jennings, 2011) and the Fukushima nuclear disaster (Aoki and Rothwell, 2013). These events are framed as institutional failures that are endemic to the overall institutional system around them.

In the Anthropocene, the failure of these larger systems is likely to increase, due to variation internally and to volatility externally. Whereas earlier work tended to popularize these disasters in "story" form (e.g., Perrow's *Normal Accidents* (1999)), newer work will need to document them more systematically and link them to various forms of institutional systems. For instance, fishing stock collapse in several countries might be examined, along with their systemically related effects of water temperature, currents, sea level rise as well

as fishing fleets, employment, and community response at absorbing these changes. In a sense, this expansion of the research domain is a call for longer-range work on systems and failures (along with a few successes) that mirrors efforts like Piketty's (2014) work on social inequality or Diamond's (2005) work on the collapse of various Pacific Rim civilizations.

Further, one challenge for the study of the Anthropocene Era is that no single event will create a disruption to a new institutional order. As such, the Anthropocene is marked by a constellation of events that cumulatively define the new era in the present, and much effort is devoted to attempting to anticipate the emergence of cataclysmic events that mark the crossing of planetary boundaries in the future. Theorizing the ways in which such complex event ecologies can precipitate revolutionary change expands the domain of institutional theory in new and novel directions.

Field level constituency. When faced with anomalous events, a key consideration for framing and conceptualization processes is who has voice in defining them. As discussed, the field is "a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field" (Scott, 1995: 5). Forming around issues of central relevance (Hoffman, 1999), it may include constituents such as the government, critical exchange partners, sources of funding, professional and trade associations, special interest groups, and the general public — any constituent which imposes a coercive, normative or mimetic influence on the organization (DiMaggio and Powell, 1991; Scott, 1991).

The field that has been central in defining present day conceptions of sustainability has included many within the corporate sector, in dialogue with governments, non-

governmental organizations and others (Hoffman, 1999). Other key field level members have included academia, religious institutions, suppliers and buyers, financial institutions and others. But moving beyond the standard suite of social actors, much of O&NE research has sought to expand the field level constituency to include the natural environment, with all of its living and non-living components (Starik, 1995), as well as future generations (Wade-Benzoni and Tost, 2009).

Field level discussions of societal transformation around the Anthropocene Era will include, by definition, disruptive forces and voices that challenge core institutions of the market society. But Anthropocene studies must explore other, less prominent, voices, using means and channels that may lie outside the mainstream. For example, recent social revolts, such as the Arab Spring, Occupy Movement and Tea Party represent outsider voices that have forced their interests into the debate. Social movement theorists have been criticized – and have criticized themselves – for not attending enough to outsider movements, most notably politically conservative movements, although this has begun to change.

Further attention must also consider the location of the field level debates over the Anthropocene. Much of the debate over the emergence of the Enlightenment occurred within the taverns of North America and the salons of Europe (Kors, 2003). Much of the mobilization around contemporary social movements such as Arab Spring and the anti-WTO protests has been taking place on the internet (Howard et al, 2011; Stepanova, 2011). Consideration for the role of such deviant locales convening outsider voices is a significant area of study for the emergence of the Anthropocene Society.

Social movements and institutional entrepreneurship. Much recent effort has

focused on bridging institutional theory and social movement theory (Davis, McAdam, Scott and Zald, 2005), calling attention to the ability of social movements to give rise to new organizational fields and change the demography of existing fields (Rao, Morrill, and Zald, 2000). Field level constituents become parts of these collective movements, using shared and accumulated resources and power to "overcome historical inertia, undermine the entrenched power structures in the field or triumph over alternative projects of change" (Guillen, 2006: 43).

Typically, in social movement theory, field level constituents' actions are depicted as taking place in opposition to one another (Davis, McAdam, Scott and Zald, 2005; Zald and Useem, 1987; Meyer and Staggenborg, 1996). Protracted institutional engagement can yield a gradual merging of interests with a concurrent alteration in the structure of the field itself. However, until that happens, the field is not a collective of isomorphic actors, but an intertwined constellation of actors who hold differing perspectives and competing logics with regard to their individual and collective purpose (McCarthy and Zald, 1977). As a result, an appreciation for a diversity of activities and beliefs has been incorporated into field level arguments, directing attention toward the development of a terminology for the differing roles that field members play within social movement politics (Bertels, Hoffman and DeJordy, 2014; Wooten and Hoffman, 2008) and the tactics they may use (Misutka et al., 2014)

In particular, a great deal of attention has been directed towards the study of institutional entrepreneurs as change agents (Jennings, Lounsbury, and Sharifian, forthcoming; Jennings et al., 2013; Lawrence, 1999; Fligstein, 1997; DiMaggio, 1988) in shaping the discourse, norms and the structures that guide organizational action (Maguire,

Hardy and Lawrence, 2004). This research focuses on change as the outcome of concerted and organized action. Lawrence and Suddaby's (2006) review of institutional theory provides a typology of the different types of activities that actors engage in to create, maintain, and disrupt institutions. For example, during the creation stage, actors advocate on behalf of an institution by mobilizing political and regulatory support. During the maintenance stage, advocacy becomes less important and actors instead aim to police the activities of others to ensure the institution's continuation (Jennings et al., 2013). Advocacy can also lead to stasis, as actors conform symbolically to institutional pressures by decoupling their core activities from the practices and procedures forced upon them from the outside, what is labeled as "greenwashing" (Greer and Bruno, 1996). In this way, they are signaling that they are doing the 'right thing', but the aim is to placate stakeholders by creating a green ceremonial façade (Jermier and Forbes 2003).

In O&NE work, we see both lines of work on field-level actors: social movements and institutional entrepreneurship. For example, studies have examined how environmentally related social movements in industries and around organizations lead to the adoption of more environmentally progressive practices, like recycling (Lounsbury, 2001) and renewable sources of energy (Sine and Lee, 2009) through loosely or temporarily organized constituencies. The progression and "internalization" of environmental concerns within organizational routines has been depicted as driven by field level actors that pre-existed modern environmental concerns: the government, activists, investors, insurance companies, and competitors would all serve to redefine conceptions of corporate environmental management (Hoffman, 1999; Hoffman and Jennings, 2011).

The Anthropocene Era creates significant challenges for the study such social movement or institutional entrepreneurship activity. One challenge is that the "interests" of the natural environment are not captured within standard institutional analyses, which are social by definition. Who can interpret, assess and represent these interests, then, in their entirety? Certainly, scientists are playing a central role in articulating the concerns over climate change and other natural environment problems (Lefsrud and Meyer, 2012; Hoffman, 2011a). But scientific results have become highly provocative and contested within field level debates as being illegitimate representatives (Hoffman, 2015; Garud, Gehman and Karunakaran, 2014).

Another challenge is the periodic, but unpredictable, influence of events in the Anthropocene Era. Climate change, for example, will yield more severe storms, rising sea level, increasing storm surge, the migration of vector-born diseases and other such considerations. Each event constitutes a potential trigger that could coalesce constituents into loose networks towards action. But the variability in the events and the inability (or unwillingness) of many in society to ascribe these events to the Anthropocene will likely dampen mobilization (Hoffman and Jennings, 2011). This continual fluctuation between partial mobilization in social movement terms and the collapse down to dynamic, but only partially aligned constituent networks will have equally unpredictable effects on the institutional forms that develop and survive these swings.

Dependencies and discourse as underlying drivers of change. Institutional strategy has traditionally been framed in terms of how organizational actors respond to institutional pressures, especially due to dependence on legitimating authorities. In original institutional theory, response was limited. Actors might comply or de-couple, thus

looking as if they complied but doing so only symbolically (Meyer and Rowan, 1977). This response view was broadened considerably in the 1990s and early 2000 period (e.g., Seo and Creed, 2002; Lawrence, 1999; Oliver, 1991). In the Oliver (1991) formulation, response would be based on the degree of dependence on others for resources, including legitimacy, where strong dependence would lead to compliance, but less strong dependence, under some conditions, would lead to defiance and manipulation. The manipulation point, raised many years prior by Selznick (1949) and Perrow (1986), was emphasized by those who underscored the directness and mindfulness of actors undertaking projects to institutionalize their professions or legitimate other forms.

These dependencies notwithstanding, institutionalists in the early 2000 era began to emphasize the ability of actors to comply using discourse (Maguire, Hardy and Lawrence, 2004; Lawrence, Hardy and Phillips, 2002). In the last ten years, the role of discourse in enactment and negotiation has become extremely prominent. Suddaby and Greenwood's (2005) study of rhetorical strategies used by accounting professionals is one example. Rhetorical strategies tie into the deeper ontologies (accepted methods of knowing) used by groups, and by leveraging them express concerns in a persuasive way, rhetorical strategies are able to mobilize actors to change institutions – even those that might benefit from keeping the institutions intact.

Research in O&NE on strategies, negotiation, and discourse has largely paralleled that in institutional theory more broadly. Strategies of manipulation and defiance were emphasized by critical theorists (Levy and Lichtenstein, 2012; Forbes and Jermier, 2012; Gladwin, 2012; Levy, 1997). Many of these strategies are now depicted in more linguistic terms, as negotiated policy (Schussler, Ruling and Wittenben, 2013) or as issue framing

(Lefsrud and Meyer, 2012; Hoffman, 2011b). Some have been even more purely focused on discourse, such as the efforts to delegitimize DDT as a toxin in the language of law and policy (Maguire and Hardy, 2009).

The Anthropocene Era is likely to exacerbate this debate between the power of resources and the role of discourse as mechanisms. The trigger events from extreme climate variation, like Hurricane Sandy, the breakup of the Larsen ice sheet, Fukushima's nuclear disaster or California's multi-year drought, emphasize the role of mobilized resource and action over meaning construction (though the two are, of course, entwined). The same is true for switches to alternative energies and transportations, like solar and electric cars. These lead to discussions of decisions, purchasing, taxation, and CO_2 impacts, not quite as much to the theorization of electric cars and alternative power. On the other hand, the long waves and gradual shifts in items like rising ocean levels, ocean acidification, water scarcity and diminished boreal forest cover require even more theorization and objectification via language than environmental issues in the Holocene, like corporate sustainability. The study of the Anthropocene Era is likely to create new pressures on institutional researchers and practitioners to align language and resources.

The Normative Response: Creating Alternative Social Orders in the Anthropocene

In conceptualizing a new Anthropocene Society, consideration must be given to the issue's broad moral component, which leads to a recognition of human responsibility for the planetary changes that result from our actions, both intended and unintended. The Anthropocene is the "by-product of the multiplicity of choices that humans have already made in order to live in a manner to which they aspired," and "the choices we make going

forward can have some influence on the precise shape of the future we are entering" (Ellis and Trachtenberg, 2013: 123). This acceptance of impact compels a responsibility to correct it in the form of adjustments to the economy, behavior, values and ethics, which in turn leads to shifts in governance, most notably on the global level.

More pointedly, some have argued that the Anthropocene Era emphasizes "the limits of the neoliberal market for adequately and sustainably dealing with the major environmental threats we face" (Palson et al., 2013: 9). Ironically, it was the Enlightenment that, following the work of Adam Smith, created the concept of the market. This concept and structure has served as the fundamental organizing principle of the neo-liberal market for goods and services that encroaches upon planetary boundaries today. Therefore, the Anthropocene Era forces an alteration in both the market, which acts as our collective institution for engaging with the environment, and the idea of organizations within it (Hoffman and Ehrenfeld, forthcoming).

New efforts must be directed at analyzing new and different institutions and social arrangements. Global environmental governance must support, coordinate and regulate "the introduction of novel technologies, management practices, organizational structures and institutional solutions that profoundly changes the system in which they arise" (Galaz et al., 2012: 84). So, following on our conceptualization of Anthropocene Society as a response to the emergent geophysical reality of the Anthropocene Era, we now turn to possible normative responses bordering on prescriptions for starting to develop alternative social orders. We do so by considering three different processes: 1) the unintended consequences that change can create, 2) the evolving role of the nation state, and 3) the evolving form of policy.

Social complexity of institutional arrangements. In institutional models, many outcomes have unintended, and dysfunctional, effects. This is particularly true of outcomes driven by highly rational processes in complex institutional situations (March and Olsen, 1989; Perrow, 1986; Allison, 1971). Most environmental issues, such as climate change, endangered species protection, land use planning, or harvesting of the sea, involve a consideration of multiple, complex field- and firm-level responses as being necessary to converge towards any possible solutions (Greenwood, Hinings and Jennings, forthcoming). Isomorphic forms of thought and practice (Srikantia and Bilmoria, 1997) become extremely challenging to measure in such dynamic and complex social environments. In particular, most treatments of such complexity study individual fields of conflict that overlap and interpenetrate but remain as separate domains.

Yet, in the view of institutional theory, the Anthropocene Society represents a challenge at the global level that requires new forms of institutional apparatus for coordination (Galaz et al., 2012; Johnson and Morehouse, 2014). For example, a clash has occurred around the deliberate manipulations of climatic moderation, sequestration, and amelioration systems though "geo-engineering," what some see as a critical element of Anthropocene Society (Crutzen 2006). The geo-engineering approach would require prioritizing scientific research around climate and biodiversity issues (Steffen, Crutzen and McNeil, 2007) and the more sweeping planetary boundaries approach would suggest linking the study of systems, most likely with modelling and monitoring of dynamics within and across them (Galaz et al. 2012). But the geo-engineering approach also involves a level of knowledge about intended and unintended outcomes that human society does not presently possess (Hoffman and Ehrenfeld, forthcoming). Further, it requires a

consideration of legitimacy as to who has the right to attempt to manipulate the global environment that all societies share.

Similarly, global negotiations over climate change have thus far failed to produce results as conflicting interests and values clash and create discourse breakdowns. This result is the product of a clash of many complex fields within the broader normative discussion, and considers extremely long spans of time. Complexity within institutional theory (Greenwood et al., 2011) will need to be extended to multiple domains and responses by organizations examined in multiple fields. The responses, in isolation, may appear to be foolish or dysfunctional. But a patterned set will suggest partial movement towards a new Anthropocene social order.

The role of the nation state. One implication of the general principles from institutional theory is that the surrounding context and the action within it jointly determine institutional outcomes. This is sometimes referred to as structure-process, and the most recent version of this general implication is the "paradox of embedded action" (Garud and Karnoe, 2003). In the case of O&NE, those countries with the greatest accountability for the environmental problems we face also tend to have the most extensive institutional infrastructure. Ironically, this makes such institutional sites among the most difficult for action, as shown in the Schussler, Ruling and Wittenben study of the various COP meetings (2013), the Hoffman and Jennings study of the Deepwater Horizon Oil Spill (2011), and the King and Lenox study of Responsible Care (2000).

Where the Anthropocene Society is concerned, such slowness to action is even more likely. The countries with complex institutional infrastructure that are the most likely to recognize the science behind the Anthropocene, are most likely the biggest contributors to

the shift and most evident to be slow to respond to such large issues. The paradox of embedded action (Battilana and Dorado, 2010) may have a more substantial effect in research on the Anthropocene due to the need for a global level of analysis for handling transnational issues (Ansari, Wijen and Gray, 2013; Djelic and Sahlin-Andersson, 2006).

Going further, "the capacity of states to govern authoritatively on their own has been significantly reduced, particularly in the environmental context" (Palsson, et al, 2013: 9). But the de-institutionalization of the nation-state as the primary actor on the global scene, particularly where the environment is concerned, has not been examined to the same degree in O&NE. At the turn of this century, when the EU was spreading rapidly along with markets, global society (Meyer et al., 1997), transnational organizations (Djelic and Sahlin-Andersson, 2006), and regional alliances were considered as potential replacements for the nation-state. At the same time, the operation of these state-level markets as institutions has come under scrutiny from not just scholars, but policy-makers (Piketty, 2014; Weber, Davis and Lounsbury, 2009; Sachs, 2006).

While the current upturn in the world economy seems to have dampened academic enthusiasm to study market failure, these markets are creating environmental problems at a remarkable rate and are the cause of the overshoot of planetary boundaries in the Anthropocene Era. One can then anticipate a return to the consideration of nation-state legitimacy, particularly in the context of Anthropocene Society, where inter-dependence among nation-states increases as global environmental insults created in one state affect all. Therefore, in the next coming decades, the governments of nations that receive large international attention and/or sanctions for pollution problems will face larger legitimacy crises as a consequence for their actions. At the same time, progressive new forms of

regional alliances and new global actors (most notably multi-national corporations and NGOs) with responsibility for climate issues will displace the centrality of nation-states and will come to the foreground as the units of analysis involved in institutional change. Foresighted institutional theorists should study either these de-legitimated groups, or those replacing current actors in the international environmental field.

Policy. While not a new area, policy is also understudied in institutional theory (Hoffman and Jennings, 2012). Yet, a great deal of effort was made in the area in the late 1990s to mid-2000 era, particularly in the O&NE field. That work has taken place along two broad fronts: first, more formal, regulatory policy, and, second, less formal, more culturally based policy (Jennings, Zandbergen and Martins, 2011; Hoffman and Ventresca, 2004). On the formal side, the use of laws and regulations was emphasized as a means of making up for market failure (Jennings et al., 2005; Vogel, 1996) to compel firms to develop clean technologies (Georg, 1994; Kemp, 1993), environmental management systems (Henriques and Sadorsky, 1996), and environmental strategies (Aragon-Correa, 1998). The laws and regulations were shown to make a substantial difference in forest practices (Sharma and Henriques, 2005), electricity generation (Sine and Lee, 2009), and certification of foods (Weber et al., 2009). On the less formal side, those taking a more cultural approach have shown that similar laws, such as the Clean Air or Water Act in the United States, might be interpreted and applied differently based on the logics of environmental management in a particular period (Jennings et al., 2005; Hoffman, 1999). Further, with the advent of voluntary approaches and an increase in industry self-regulation in the 1980s, the number of studies that focused on informal governance influences increased, as witnessed by the many studies of industry associations and

certification agencies that influence the diffusion of environmental management systems such as ISO 14001 and the European counterpart, EMAS, (King, Lenox and Terlaak, 2005; Delmas, 2002; King and Lenox, 2000; Bansal and Roth, 2000).

Along with this two pronged approach to policy type within O&NE research, there has been a shift in focus away from the character of the regulatory systems, the specific policies and rules, and their enforcement, to understanding the evolution of these systems and the role played by different functionaries in them. The work on regimes of rules (Vogel, 2012), legal rule systems of water management (Jennings, Zandbergen and Martins, 2011), and the comparative (albeit state-level) work on policies are all moves to examine the evolution of legal systems underpinning environmental enforcement. Schussler, Ruling and Wittenben (2013) combine this focus on the regulatory system as set up by the United Nation's climate change agreements with an assessment of the roles played by different representatives in negotiations. Similarly, work by numerous scholars (Lefsrud and Meyer, 2012; Hoffman, 2011b; Hoffman and Bertels, 2010) examines the role of various types of scientists (versus non-scientists) in the depiction and acceptance of climate change.

In the Anthropocene Society, it becomes evident to observers of organizations that national and regional policies are not working well where large scale issues like climate change are concerned. In part, this is be due to the natural cycle of attention for issues (Hoffman and Ocasio, 2001), but also due to the increasing complexity of the science and politics of these issues (Ansari, Wijen and Gray, 2013). The United States, for instance, has a well-known problem of climate change "gridlock" around issues like cap and trade policies. As a result of these cycles and frustration within nation policies, there is an increasing interest in both international or trans-national policy, as well as local (within state, city

level) policies.

The shift in research to the international level enables a comparison and synchronization of policies across countries that are beneficial for stimulating GHG reductions, such as through adoption and legitimation of clean technology the divestment and delegitimation of dirty technology. The shift in research to the local level (either to the urban or rural community) allows for an examination of consortia of organizations that can broker local experiments.

CONCLUSION:
A RENEWED FOCUS AND TONE FOR O&NE SCHOLARSHIP

The notion that humankind has been changing the natural world is not new. Over a century ago, terms such as the "Anthropozoic," "Psychozoic," and "Noosphere" were developed to mark the entry into a new period in which human kind were a global force (Zalasiewicz, Williams, Steffen and Crutzen, 2010). Similar, the notion that this shift compels a new understanding of social arrangements between humans and the environment is not new (Hoffman and Ventresca, 2002). Organizational and sociological study of the interaction between the natural environment and social organization and behavior dates at least from the early 1970s, coinciding with the emergence of environmental activism and social movements in the United States, Europe, and elsewhere (Laclau and Mouffe, 1985). But, where much of this early attention sought corrections by integrating natural system considerations into social systems, the emergence of the Anthropocene Era and the resultant Anthropocene Society compels a recognition of and responsibility for the extent to which social systems have imposed themselves into natural systems with likely calamitous effects.

An important question in such an inversion of focus, and the concurrent magnitude of implications that accompanies it (overshoot of planetary boundaries related to climate regulation, water availability, food security, etc.), relates to the applicability of existing theories to both understand and address it (Kuhn, 1962). For example, Catton and Dunlap's (1980) New Ecological Paradigm--the shift away from anthropocentric (human-centered) to eco-centric thinking (humans are one of many species inhabiting the earth)--was a central and influential theoretical insight of environmental sociology, one that was supposed to supplant existing notions of social analysis. Yet this argument has generated little research interest outside the specialty field (Hannigan, 2014). Beck's (1992) Risk Society, on the other hand, has arguably had tremendous impact beyond the subfield, yet it approaches the subject of environmental risks from the traditional perspective of the macro-sociology of social change (Lash and Wynne, 1992) rather than from the subfield-specific concerns of environmental sociology. The differential impact of these two approaches highlights the tensions over the value of challenging versus engaging existing disciplinary approaches. The corpus of O&NE research parallels this dual track approach. For example, one common theme has been the shift from an anthropocentric to ecocentric perspective similar to the New Ecological Paradigm (Gladwin, Kennelly and Krause, 1995; Purser, Park and Montuori, 1995). But most O&NE scholars have considered how to merge existing concerns for economic competitiveness with environmental demands to gain market advantage by making “the business case” for action (Russo and Minto, 2012; Sexton, Marcus, Easter and Burkhardt, 1999; Roome, 1998; Stead and Stead, 1995; Shrivastava 1995). Much of this research has been normative in focus, focusing on understanding and predicting why and how corporations "can take steps forward toward [being]

environmentally more sustainable" (Starik and Marcus, 2000: 542). The fact is that this latter approach of integrating environmental considerations within the dominant logics of the market and social theory has taken deep root within O&NE research.

But the emergence of the Anthropocene Era and the Anthropocene Society raises questions about the viability of this continued emphasis. It exposes a paradox between the research approach we have been using and the geophysical reality we wish to study. On the one hand, at the time of the writing of this article, we find ourselves in a period when sustainability has gone "mainstream." Firms develop sustainability strategies, create sustainable products and operations, produce sustainability reports, and appoint Chief Sustainability Officers who tout sustainability to be their core mission. University administrators promote sustainability as central to their curricula. Consumers buy sustainable products, drive sustainable cars, stay at sustainable hotels, and are seemingly bombarded with sustainability marketing campaigns. And O&NE scholars can pursue sustainability as a legitimate field of research inquiry, as measured by the norms of academic success (e.g., tenure and promotion).

On the other hand, the problems that the O&NE agenda is meant to address continue to get worse. The Anthropocene Era is a glaring marker of that unfortunate truth. How did this misalignment between sustainability as a problem and sustainability as solution emerge? There is a growing argument that sustainability has been subverted by corporate interests such that it has lost its meaning and does not go far enough as presently envisaged (Sandelands & Hoffman, 2008). Critics have argued that corporate sustainability has become merely a label for strategies actually driven by standard economic and institutional mechanisms (Jacobs, 1993). According to Gladwin (2012: 657), "The past half-

century has been marked by an exponential explosion of environmental knowledge, technology, regulation, education, awareness, and organizations. But none of this has served to diminish the flow of terrifying scientific warnings about the fate of the planet." The notion of the Anthropocene is an articulation of the disconnect between problem recognition and positive response.

This leaves the O&NE researcher with a dilemma. Even with the modifications and new models we propose in this article, we need to both fit the phenomena within existing theory in order to contribute to the field (and maintain legitimacy within the academy through publication, tenure and promotion) and step outside the domains of existing theory to fully capture the magnitude and scope of the problem. The first is to begin to mitigate the impact we are having on the environment. It is polite, acceptable -- and unchallenging to the systems of practice and the academy. The second step is to re-energize and re-radicalize the field (Gladwin, 2012), returning to the O&NE tone of twenty years ago, when scholars of environmental issues sat on the outside of mainstream scholarship and practice by criticizing and challenging the underlying institutions of the field. The Anthropocene Era requires us to do that again, to enter the realm of creative destruction, changing markets, to question taken for granted metrics and concepts, to be impolite and unacceptable, to challenge existing power structures. Rather than merely fitting O&NE within existing management theories and models, this new work in institutional theory must explore the ways in which the fundamental systems of thinking and beliefs must adapt to the present-day reality of the Anthropocene. The goal today for forward-looking institutional theorists is to do both and in doing so advance institutional theory and address the societal implications of the shift to the Anthropocene era.

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Table 1:
Implications for Institutional Research in O&NE and the Anthropocene

Headings and Topics	Existing Institutional and O&NE Research	Research Implications in the Anthropocene
Gnosis: The fundamental principles of institutional theory		
• Ontological principles	Meaning shifts; embedded actors and action; complex, multilevel systems; institutionalization and rationalization.	Meaning shifts with Era; the locus of action and system would be around the nine planetary boundaries; Institutionalization and rationalization would take place in shorter cycles with progressive deterioration in normative forces for conformity.
• Epistemological principles	Diffusion models in systems; linguistic grammars and fields.	The need for complex, multi-system diffusion models; simulations; big data use; more on the psychology of linguistic grammars around the Anthropocene.
The Problem: The socially constructed nature of the Anthropocene		
• Constructed meaning.	Emphasis on meaning and embeddedness within biosphere, but separate from discourse in physical sciences.	Theorized meaning that links physical and social science discourse is critical, with terminology attended towards thresholds, boundaries and longer time horizons.
• Heterogeneity and deviance.	Convergence of meaning and practice, marked by equilibrium and stability.	High variation in adoption, with complexity marked by increasing uncertainty, divergence of meaning, and deviance in practice.
The Processes: Institutional change in the Anthropocene		
• Anomalous events.	Shifts in the existing order rely on events as presently understood and seen as impactful.	Events that bring about the "revolutionary change" of the Anthropocene involve a reconfigured process of recognition and enactment that involve a constellation of events both now and into the future.
• Field level constituency.	Existing field of mainstream actors defined present day notion of sustainability.	Fields that redefine institutional order around the Anthropocene will include other, less prominent, voices, using means and channels

		that may lie outside the mainstream.
• Social movements and institutional entrepreneurship.	Activated social movements as key mechanism versus temporarily aligned constituencies	More institutional oscillation between aligned constituencies and nascent social movements.
• Dependencies and discourse as a driver of change.	Resource and power dependencies as critical forces of conformity and response.	The complex nature of Anthropocene Era phenomena requires greater theorization and objectification, and a greater attention to alignment of language and resources.
The Normative Response: Alternative social orders in the Anthropocene		
• Social complexity of institutional arrangements.	Existing fields create complex institutional environments with interpenetration and overlap.	New forms of institutional apparatus are necessary at the global level where multiple and complex fields clash.
• The role of the nation state.	Surrounding context and action embedded within it jointly determine institutional outcomes. Regional and national differences yield differential action. The role of the nation-state has been greatly reduced in environmental domains, though largely understudied.	Context and embeddedness still matter, but global scale considerations break down standard contextual divides. The diminished legitimacy of the nation-state will be increased. New forms of regional alliances and global actors will come to the foreground in institutional analyses.
• Policy.	Focus on formal and informal policy regimes as well as attendant considerations for the evolution of those systems and the role of different functionaries within them.	The breakdown of national level policy regimes necessitates a shift towards international and local levels with the concurrent opportunity for studies in comparison, synchronization and experimentation.