**Worthy of Debate: Discursive coherence and agreement in the formation of the field of sustainability in higher education**

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**Abstract**: This article explores the development of shared understanding in the field of environmental sustainability in higher education—a field that began with social movement pressure surrounding contentious issues and evolved over decades into a settled field. The study defines and traces two distinct elements of shared understanding in this field: discursive coherence and discursive agreement. Discursive coherence is a shared understanding of which issues matter to a field. Discursive agreement concerns how much agreement there is among field actors regarding those issues. To trace these indicators, we utilize topic modeling alongside qualitative coding of a sample of messages from an online forum of conversations focused on the nascent field. We find that discursive coherence increases over time, but that coherent issues are also more likely to exhibit disagreement, indicating that more coherent issues are seen as more consequential, and therefore more ‘worthy of debate’ in the nascent field.

**Keywords:** fields, discourse, sustainability, topic modeling, social movements

Fields are dynamic arenas where actors occupy particular positions in a social order and interact with one another based on their shared interest in an area of social life and in shaping the rules governing that area ([Bourdieu 1971](#_ENREF_6), [1984](#_ENREF_7); [P. J. DiMaggio and Powell 1983](#_ENREF_10); [Fligstein and McAdam 2012](#_ENREF_16); [Powell and DiMaggio 1991](#_ENREF_50)). In the emergence of new fields, actors engage in contestation over meaning and resources while also attempting to establish what has been termed “shared understanding” ([Fligstein and McAdam 2012](#_ENREF_16)), or “shared meaning,” in the field. While the creation of a common discourse is central to the process of field emergence ([Lawrence and Phillips 2004](#_ENREF_32); [Lounsbury et al. 2003](#_ENREF_35); [Ruef 1999](#_ENREF_51)), developing a shared understanding of what matters to a field is challenging. It is perhaps the most challenging in fields that form around contentious ideas and ambiguous norms and that are composed of an array of actors from different backgrounds and organizational affiliations. For example, when social movements are working to change norms and practices surrounding contentious issues such as forestry standards, industry working conditions, or child labor, they must engage a variety of different actors who have a shared interest in the eventual fate of the contentious issue. The actors who engage in nascent fields may have divergent interests and conceptualizations of the goals and purpose of the field at first. The movement’s goal is for the field to eventually reach a shared understanding, which theoretically should enable it to settle around a set of norms, practices, and potentially standards and evaluation measures. However, it is unclear how fields like these evolve from loosely connected individuals from different backgrounds with a shared interest in a contentious issue (but divergent views on how that issue should operate) to settled fields of activity underpinned by a shared understanding, which is essential for field formation.

Our study focuses on a case of a field that began as a movement-led effort around a contentious issue, but eventually resulted in an entirely new settled field comprised of new practices, norms, evaluation tools, as well as field-specific roles and organizations. We examine how shared understanding evolved over the formative years of the nascent field of sustainability in higher education in North America. This field represents an excellent window to observe changes in discourse during field formation. “Sustainability” as a term, and an associated field, had little to no meaning until the early 1990s, when it began as a site of movement and organizational contention. Social movements, which were primarily comprised of student activists, targeted colleges and universities to pressure them to adopt a wide range of new practices and commitments. At the time, social movement actors, university officials, faculty, staff and other interested parties had very different views about what sustainability meant, how it should be handled, and even whether or not it should be an organizational concern. Between the early 1990s and 2010, however, interested actors carried on a continued discourse with one another that has undergirded the evolution of what can be termed the field of sustainability in higher education. They have sharpened the meaning of sustainability, created normative expectations of higher educations’ “responsibilities,” and spurred the voluntary adoption of a wide range of entirely new practices. By 2010, hundreds of colleges and universities had made significant commitments to sustainability and adopted numerous new practices, including changing waste disposal processes, installing renewable energy systems, adopting green building codes, creating positions for sustainability managers, and reporting on these efforts through voluntary reporting systems.

What sort of discursive change occurred to enable actors involved in the sustainability movement to move from contention over the meaning of sustainability to a relatively stable field with “shared understanding” regarding roles and practices? In order to address this question, we analyze the complete archive of 9,540 messages from an online forum that was the site of conversations in this field between1992 through to 2010. The forum conversations give us a real-time, *in-situ* perspective on a nascent field from the point of view of multiple actors. A central part of our theoretical and analytical approach in this study is our refinement of the concept of “shared understanding,” as it has remained elusive to define and measure empirically ([Mohr 2005](#_ENREF_47)). We consider “shared understanding,” to comprise two distinct elements, which we term “discursive coherence” and “discursive agreement.” These two concepts separate questions of 1) whether or not field members see the same set of issues as equally pertaining to a field (discursive coherence) and 2) whether or not they share opinions about how those issues should operate in the field (discursive agreement). We measure and trace these two concepts through topic modeling and qualitative coding of the discourse in the online forum to address the question of how shared understanding evolved over the formative years of the nascent field of sustainability in higher education in North America. Our approach builds on the linguistic turn within the study of organizations as well as the longstanding consideration of language as central to constituting shared understanding ([P. DiMaggio et al. 2013](#_ENREF_9); [Ghaziani and Ventresca 2005](#_ENREF_17); [Ventresca and Mohr 2002](#_ENREF_57); [Wuthnow 1989](#_ENREF_58)).

In the following, we first introduce existing work and outstanding questions regarding shared understanding in field emergence and further define discursive coherence and discursive agreement. We then describe our data and analyses for measuring discursive change over time. Next, we present our results, which show that over time, the field of sustainability in higher education reached relative discursive coherence between members – actors began to discuss the same set of issues to a similar degree as one another over time. However, the pathway towards discursive coherence was not linear and certain groups remained persistent discursive outliers. Additionally, we find that discursive agreement did not follow the same chronological pattern. In fact, agreement was lowest within issues that had cohered, indicating that there is an inverse relationship between discursive coherence and discursive agreement in the early years of this field. We explore the role of attention to explain this relationship, and indeed find that more coherent issues receive more attention from field members in the conversations. We conclude that once an issue becomes seen as pertaining to a field it also becomes “worthy of debate,” which opens the door to disagreement between actors vying for control. By separating discursive coherence from discursive agreement, we find that field members can develop shared understanding of the central issues of the field, indicating relative field “settlement,” while continuing to disagree over how the field should operate, reflecting ongoing contestation.

**Shared Understanding in Emerging Fields**

 Organizational scholars, drawing on Bourdieu’s ([1971](#_ENREF_6), [1984](#_ENREF_7)) concept of fields, distinguish between “settled” and “unsettled” fields. Unsettled fields are those that are emerging or have persistent disagreement and contestation regarding principles, practices, and “rules of the game” ([P. J. DiMaggio and Powell 1983](#_ENREF_10); [Fligstein 2001](#_ENREF_15); [Fligstein and McAdam 2012](#_ENREF_16); [Hoffman 1999](#_ENREF_23); [Powell and DiMaggio 1991](#_ENREF_50)). Settled fields, on the other hand, are stable social orders, characterized by what scholars have termed a “shared understanding” amongst actors ([Fligstein and McAdam 2012](#_ENREF_16)). Thus, a central assumption of field theory is that as a field becomes a stable order, actors in that field develop shared understanding of which issues are pertinent to that field and the relative importance of those issues. However, shared understanding, while deemed important to field formation, has also been conceptually fuzzy and therefore difficult to measure empirically ([Mohr 2005](#_ENREF_47)). We seek to improve construct clarity and the theoretical language to describe how actors in a nascent field develop what has to date been called “shared understanding.” In our consideration of the development of shared understanding, we think it is important to conceptually separate the degree to which different groups agree on *which issues matter* in a field versus *how much agreement* there is within those same issues ([Goldberg 2011](#_ENREF_20); [Martin 2000](#_ENREF_39)). We term the former discursive coherence and the latter discursive agreement.

*Discursive coherence* refers to the degree to which field actors share a common orientation around how much an issue or set of issues is relevant to a field. Discursive coherence is important for drawing field boundaries and defining which issues are worthy of discussion, debate, and (potentially) conflict. When individuals discuss a set of issues in a field to a similar degree there is high discursive coherence, but when they discuss different issues or the same set of issues to varying degrees, there is low discursive coherence. Attaining discursive coherence is similar to the agenda setting dynamics of political arenas inasmuch as issues compete for attention and relevance, and as a field coheres, eventually certain issues become an accepted part of the landscape of what matters ([Kingdon and Thurber 1984](#_ENREF_30)). *Discursive agreement*, in contrast, refers to shared opinion, preferences, or positions about issues within the field that determine how the field should operate ([Fligstein and McAdam 2012](#_ENREF_16); [Goldberg 2011](#_ENREF_20)). High discursive agreement implies that actors in a field agree, more or less, about how a particular issue should be handled.

 Our premise is that it is possible for actors to have high overlap in which issues they see as relevant to a field and potentially still have different opinions about what to do about those issues. For example, in the formation of the field of HIV/AIDS treatment, various groups that were involved in the field (i.e. pharmaceutical companies, advocacy councils, activist groups, patients) cohered around the issue of clinical trials as being essential to the field ([Maguire 2004](#_ENREF_37)). However, the groups continued to disagree in their views of *how* the trials should operate; for example, who could have access to them, who should pay for the treatments, and who could decide the risks patients could take with new treatments ([Epstein 1995](#_ENREF_12); [Maguire 2004](#_ENREF_37)). The issue became coherent but the field actors were in continued disagreement.

 Both discursive coherence and agreement are essential to questions of field formation, but in the past they have been conflated through general assertions that actors in nascent fields develop a “common understanding” ([Maguire 2004](#_ENREF_37)) or “common meaning systems,” ([Scott 2000](#_ENREF_53)) that they “negotiate over issue interpretation” ([Hoffman 1999](#_ENREF_23)), or that fields are “battlegrounds where collective actors compete to give meaning to an issue” ([Bail 2012](#_ENREF_2)). In separating coherence from agreement, we follow the recent theoretical clarifications made by [Martin (2000)](#_ENREF_39) and [Goldberg (2011)](#_ENREF_20) who distinguish the consideration of the relative significance of an issue to an area of social life from the varying opinions regarding that same issue. In other words, even if actors agree on which issues matter in a field, it does not follow that they necessarily share the same opinions about what should be done about each of those issues.

 Because past scholars have not separated discursive coherence from discursive agreement, we have little understanding of how the two are related, and therefore whether or not there is value in considering them as two separate constructs. To the extent that a field emerges during a moment of conflict and contestation, existing theories of how shared understanding develops in nascent fields would lead us to expect that over time contestation should decline. If discursive coherence and agreement are somewhat interchangeable, then as contestation declines, discursive coherence and agreement (conflated as “shared understanding”) would improve.

However, by separating these constructs we can consider other potential relationships between field settlement and contestation. One possibility is that discursive coherence and agreement are linked sequentially and are produced through different field-level processes. In order for discursive agreement to be reached, actors must first develop a shared sense of which issues matter. Initial contestation over which issues matter is gradually settled as the discourse in a field becomes more coherent, but then this could lead to a second form of conflict in which actors struggle with each over how to pursue their individual and collective goals. Contestation, in this sense, changes form over time. Initially, contestation centers on which issues are relevant to a field, but as a shared set of issues coheres, contestation shifts and centers on how those issues are controlled or carried out by the various players in the field.

In our theorizing, first actors would vie for dominance over which issues matter and ought to be collectively addressed in the field. As the field stabilizes and the issue agenda becomes more defined, the field reaches higher levels of discursive coherence. As the actors begin to see the same set of issues as central to the field, they then contend over how to address those issues and collective goals in the most effective ways. At times, during this stage of discursive evolution, actors’ ideological and positional differences come to the fore, which leads to contestation over means of attainment (rather than just ends). In consideration of this potential configuration, we propose examining discursive coherence and discursive agreement as two separate elements of nascent field emergence. In the following, we empirically assess the discursive evolution of the field of sustainability in higher education.

**Empirical Setting: The Online Forum for Sustainability in Higher Education**

 In the early 1990s social movements, comprised of student activists and movement organizations such as the Student Environmental Action Coalition, the National Wildlife Federation (NWF) and the Sierra Club, began to pressure colleges and universities in North America to institutionalize new practices under the umbrella term of “sustainability,” such as recycling, energy management, renewable energy production, pollution reduction, and waste minimization ([Eagan and Orr 1992](#_ENREF_11); [Keniry 1995](#_ENREF_26); [Lounsbury 1998](#_ENREF_33), [2001](#_ENREF_34)). At first higher education institutions resisted these pressures, preferring to leave sustainability issues to student groups, arguing against the costly nature of these new areas, and insisting that these issues were beyond the scope of their institutions ([Eagan and Orr 1992](#_ENREF_11)). However, over time this field shifted from primarily an unsettled site of contestation between student activists and their universities to a settled one of organizational commitments, annual conferences that brought together movement and organizational attendees, and the widespread adoption of voluntary reporting standards.

This shift was undergirded by ongoing discursive interaction among an unlikely cross-section of interested actors, including students, non-profit organizations, staff, regulators, faculty, and administrators who interacted regularly over time in new online spaces that centered on the field of sustainability in higher education. In this study, we examine the primary site of online conversation in this field, which is a forum that was set up in 1992 as an extension of a book titled *The Campus and Environmental Responsibility* (Eagan & Orr, 1992), in which a section called “A Plea for Networking,” stated, “We urge everyone to share their ideas, their successes, and their failures… [the forum is] dedicated to sharing ideas and experiences from similar campus environmental initiatives nationwide.” The forum would become the central discussion arena for this field.[[1]](#footnote-1) We became aware of the forum during participant observation with a campus sustainability team when the informants frequently mentioned it as their go-to resource for information and a place where they could “connect with their peers.”

In this study, we focus on the period between 1992 and 2010, because by 2010 the field exemplified shared understanding of field practices through both normative and regulatory channels --*he Princeton Review* began to publish rankings of how schools compared across a standard set of sustainability activities and the U.S. Environmental Protection Agency (EPA) began collecting greenhouse gas emissions data on large colleges and universities. Between 1992 and 2010, 1,540 individuals from 641 organizations, including colleges and universities, non-profit organizations, businesses, and government agencies engaged in the conversations on the forum. The forum provide a large-scale, real-time, longitudinal view of the discourse in the nascent field of sustainability in higher education.

**Methods and Analysis**

*The Forum Conversations as Backstage Discourse*

Prevailing approaches to studying discourse in fields have primarily focused on discourse that is produced in “front-stage” performances ([Goffman 1959](#_ENREF_19)), whereas much of the processes of mobilization and collective action to create shared understanding in a field occurs “backstage,” in conversations that are typically closed off from public view ([Kellogg 2009](#_ENREF_25); [Mair and Hehenberger 2014](#_ENREF_38)). Our data of online conversations between field members represent “backstage” discourse because they are produced by field actors for field actors. Additionally, the data do not suffer from the problems of retrospective accounts of a field’s development. The conversations include not only the perspectives of those who endured in the field over time, or those who became leaders, but they include the real-time conversations between individuals who played both major and minor roles at various points. While these data are not free from attempts at individual impression management, we argue that they are more representative of “backstage” interactions, as individuals in the forum frequently express frustration, quarrel, seek help, reveal that they do not believe that leaders in their organizations care about sustainability, and admit that they do not know the best way to carry out their work. These types of conversations are essential to the formation of a field, and yet they are absent from most existing studies.

*Identifying Issues in the Forum Discourse*

We analyze the full message content of all of the conversations in the online forum from when it began in 1992 through the end of 2010, which total 9,540 separate messages (3,509,274 words). Based on the technical design of the forum, all the messages were sent in a “reply all” fashion to all members – the forum operates on a single level, without separate threads or issues. As the online forum we study has no formal structure of conversations by topic, we employ quantitative text analysis to identify and trace issues in the discourse over time. To identify the issues in the discourse, we first analyzed the messages inductively, using an unsupervised topic modeling algorithm called Latent Dirichlet Allocation (LDA) and the software program MALLET ([Blei 2012](#_ENREF_5); [McCallum 2002](#_ENREF_42); [McFarland et al. 2013](#_ENREF_43)). Topic modeling is a text analysis approach that groups words based on their co-occurrence in a document (in our case a “document” is a single message on the forum) and results in groups of words, which form topics, based on the frequency to which they co-occur in a document together ([Blei 2012](#_ENREF_5); [P. DiMaggio et al. 2013](#_ENREF_9); [Mohr and Bogdanov 2013](#_ENREF_48)). To analyze the text, we first applied MALLET’s English language exclusion dictionary to remove common stop words, such as “I”, “it”, and “the,” from the text, which is standard practice in topic modeling. We also excluded all of the forum member’s names and nine of the most-commonly used words, to separate topics into more distinct categories or issues.[[2]](#endnote-1)

 We then ran the topic model analysis, starting with 100 topics and re-running the models with more topics and fewer topics until the word lists formed distinctive and coherent topics, indicative of field-level issues. Each topic is comprised of a list of 20 words that co-occur frequently together in the same messages. As previous scholars have indicated, the standard approach for determining the optimal number of topics is coherent topic interpretability ([P. DiMaggio et al. 2013](#_ENREF_9); [Giorgi and Weber 2015](#_ENREF_18); [Tangherlini and Leonard 2013](#_ENREF_55)). Therefore, after examining the various models, we decided that the 75-topic specification provided the right balance of coverage, coherence, and distinctiveness. In this paper, we focus on six topics of theoretical and practical interest that we identified in the topic modeling procedure. Our approach is similar to Miller ([2013](#_ENREF_46)), who produced 50 topics to balance topic cohesion, but then chose to compare six topics for interpretability.

 The six topics (or issues), which we have labeled from the word lists and our knowledge of the field, are: 1) *compliance*, 2) *nature*, 3) *politics*, 4) *metrics and evaluation*, 5) *efficiency*, and 6) *the* *environmental movement*. The issues and associated word lists are shown in Table 1. Messages about c*ompliance* primarily focus on a regulatory approach to environmental problems, utilizing terms such as “EPA,” “health,” “safety,” “regulations,” and “standards.” *Nature* encompasses discussions of “endangered,” “species,” “wildlife,” “earth day,” and “habitat[s].” *Politics* contains words such as “congress,” “senate,” “vote,” “Washington,” and “president.” *Metrics and evaluation* includes discussions of “surveys,” “ratings,” and “rankings,” and also references to field-specific evaluation tools such as “Cool Schools” and “AASHE STARS.” *Efficiency* includes terms such as “conservation, “cost,” “data,” “reduction,” and “saving.” And, finally, talk of *the* *environmental movement* includes terms such as “action,” “campaign,” “coalition,” and “movement,” and focuses on the collective action within this field.

**-------------------------------------**Insert Table 1 about here**-----------------------------------**

 The topic model analysis produced a matrix of the six issues by the 9,450 forum messages, with percentage figures for the probability of each topic in each message. The topic-message matrix enables us to trace issues by message authors and groups over time as well as helps us identify which messages are most associated with each issue.

*Identifying Groups on the Forum*

 In addition to identifying the issues in the discourse, we also identified the authors of the messages and the groups to which the authors belong, because this enabled us to measure the degree to which each group discusses each of the issues over time. One co-author and one research assistant worked to identify the 1,540 individuals on the forum, utilizing information from the messages (such as email addresses and signatures), as well as details from organizational websites and resume websites such as *LinkedIn*. We were able to identify the authors of 97% of the messages, and we coded each individual as belonging to one of thirty group categories, as shown in Table 2.[[3]](#endnote-2)

**-------------------------------------** Insert Table 2 about here **-----------------------------------**

 We narrow our subsequent analyses to the ten most active groups in the forum, whom we consider the core members. As shown in Table 2, these groups are: 1) sustainability managers, 2) students, 3) recycling managers, 4) faculty, 5) non-profit workers, 6) facilities management staff, 7) activists, 8) business people, 9) environmental, health, and safety (EHS) staff, and 10) energy managers. The messages from these groups represent 85% of the overall forum messages and enable us to make more meaningful comparisons across the most central actors.

*Measuring Discursive Coherence*

We construct two variables to measure the degree of discursive coherence on the forum over time. The first is a variable that is at the group level, which we term “discursive distance,” and the second is at the field level, which we term “discursive coherence.” While we are ultimately interested in discursive coherence at the field level, it is helpful to see the discursive distance between groups in order to understand the underlying dynamics of the discourse in the field. Discursive distance is a measure of how much more or less one group discusses the six issues in their messages on average compared to the other groups in a given period. To measure discursive distance, we calculated the difference between the percentage of overall words in a group’s messages from a topic list compared to the average percentage of overall words in all other groups’ messages from the same topic list. The resultant figure is a percentage and it can be positive or negative, depending on whether or not a group discussed a focal issue more or less compared to the other groups. For example, if one group discussed an issue in 4% of their discourse in a year and all the other groups’ discussion of this issue averaged 9% in that year, then the focal group’s discursive distance for that issue in that year would be -5%. Finally, we take the absolute value of each distance score by topic and sum them by group in a given year to get a total discursive distance score for each group in each year.

To measure discursive coherence at the *field* level, we go one step further. We start with the groups’ distance scores by year (across all topics). Then, we calculate the average of all the distance scores in a year across all groups. Finally, we take the reciprocal of that number to calculate discursive coherence. So, the lower the discursive distance of the groups in a year, the more similar the groups’ discourse is to one another, and the higher the discursive coherence is at the field level. It is important to note that neither accounts for the *amount* of discourse in a given period. While the sheer quantity of conversations may be a meaningful consideration in the evolution of a field, we concern ourselves in this paper with the characteristics of the content of the conversations and not with fluctuations in total discourse.

*Measuring Discursive Agreement*

 In order to measure our second key concept, discursive agreement, we first recognized that agreement and disagreement operate relationally – they emerge from interactions between individuals. Therefore, our unit of analysis for measuring the level of agreement in the forum is the conversation. Our first step in calculating discursive agreement was to extract all of the forum messages that were part of a conversation, and disregard single posts that did not elicit any responses. We therefore retained all messages with the same Subject line (or were a Reply to that same Subject). For example, “Your Green Building Standards/Rating System” and “Re: Your Green Building Standards/Rating System” were considered part of the same conversation.[[4]](#footnote-2) Narrowing the forum messages to those that were part of a conversation resulted in 6,737 messages, or 71% of the overall messages.

We then created a sample of these conversations to qualitatively code for the presence or absence of disagreement. We purposefully sampled 20% of the overall conversations by issue and by year, resulting in a sample of 1,257 messages grouped into 355 conversations. To create this sample, we first calculated the percentage of words from each of our topic model word lists that were present in each conversation. For example, a conversation with the subject “Toxic Lab Waste” contained 24 instances of words from the *compliance* issue word list, including “chemical” and “waste,” out of 532 total words in this conversation, resulting in a 5% composition of *compliance* for this conversation. We then selected the conversations with the highest composition ofwords representing each issue by yearto create the sample; this approach enables us to answer the question of how much agreement or disagreement there was within conversations related to a particular issue in a certain period. For example, we can analyze whether or not conversations about *efficiency* exhibited more or less discursive agreement over time.

 We read each of the 1,257 messages in our sample of conversations in full and hand-coded them for whether or not they exhibited disagreement. Then, we aggregated the message-level disagreement up to the conversation level – resulting in two types of conversations: 1) those that exhibited disagreement and 2) those that did not exhibit disagreement, indicating relative agreement. To calculate inter-rater-reliability measures on our coding, one co-author and one research assistant separately coded a random sample of 10% of the sample (131 messages). The coders attained an inter-rater-reliability of .84, calculated and adjusted using Cohen’s Kappa, which we consider an acceptable figure.

**Results**

*Discursive Coherence*

 Figure 1 is a graphical representation of the discursive coherence at the field level over time in. As shown, the groups discussed the six issue of 1) *compliance*, 2) *nature*, 3) *politics*, 4) *metrics and evaluation*, 5) *efficiency*, and 6) *the* *environmental movement* to a more similar degree as one another over time, indicating a pathway towards greater discursive coherence. Figure 1 also indicates, however, that increased discursive coherence did not come about in a linear fashion. There are periods where the discourse becomes more and less coherent over time. For example, there was more coherence at the very beginning, and then coherence dropped before eventually rising after 2003. Therefore, in order to examine the process through which discursive coherence takes shape, we divide the forum into periods, based on our understanding of the history of the field.

**-------------------------------------**Insert Figure 1 about here **-------------------------------------**

*Periodization of Groups and Issues*

 We consider the first period to be the early years of formation of this field, from 1992-1997. The most active group on the forum during this period was students, who comprised over one-third of the posts. This is when the field was primarily a site of contention between social movement actors (mainly comprised of student activists) and their universities. During this first period, colleges and universities were starting to respond to movement pressure by signing commitments to sustainability, but sustainability in higher education had not yet started to be professionalized. There were some very early gatherings during this period, but they were mainly aimed at mobilizing students. Non-profit organizations such as the National Wildlife Federation and Second Nature encouraged students to work to advance sustainability in higher education, holding campus and regional workshops to coordinate sustainability efforts.

We consider 1998-2003 to be the second period in our era of study. This period comprises very early moves towards professionalization in this field. During this period, sustainability managers surpassed students to become the most prominent group on the forum, comprising 29% of the posts, but students were still active on it as well, comprising 20% of the posts. The National Wildlife Federation expanded beyond training sessions and began to ask campuses to make public commitments to sustainability by enrolling in its Campus Ecology program. Additionally, regional networks began to form, with the most active one being Education for Sustainability (EFS) West, which was founded in 2001.

The years 2004-2007 comprise the third period. This period is characterized by numerous commitments by colleges and universities, organizational foundings, and a large increase in the creation of new positions in sustainability management. In terms of commitments, hundreds of college and university presidents signed on to the American College and University Presidents’ Climate Commitment, which was founded in 2006. In terms of organizational foundings, there was the creation of a consortium of higher education organizations committed to sustainability, called HEASC, which was formed in December 2005, and shortly thereafter in 2006 there was the founding of the first, and what would become the only, professional association of sustainability managers in higher education – AASHE (the Association for the Advancement of Sustainability in Higher Education). AASHE began holding biannual conferences in 2006, and started designing a measurement tool for sustainability in higher education that same year. This period was also marked by an uptick in the creation of new sustainability manager positions at colleges and universities. A 2006 AASHE survey of sustainability managers indicated that two-thirds of their positions were created between 2004 and 2006, with only one-third of them being created prior to 2004. On the forum, sustainability managers authored 47% of the posts.

Period 4 is comprised of the years 2008-2010. This period began with another wave of hires. According to a 2010 AASHE staffing survey, more people were hired into sustainability positions in higher education in 2008 than in all previous years combined. There was also a settlement of activities that had begun in the previous period. For example, AASHE’s biannual conference became an annual gathering starting in 2010. Finally, the most distinctive characteristic of this period is the development of standards of evaluation in the field, in the form of ratings and rankings. AASHE launched a rating system, called STARS (the Sustainability Tracking and Rating System) in 2009. By early 2010, the STARS ratings were feeding in to new *Princeton Review* rankings of schools based on their sustainability activities.

It is important to note that it is difficult to definitively demarcate the boundaries of these periods. There are many milestones that occurred over these decades in the field. However, while the cut points are difficult to precisely determine, what is most important in the periodization is that each period is characterized by a similar type of activity in the evolution of the field (i.e. there is more similarity with what was happening within a period than across periods). However, considering the impact that these period cut points have on our subsequent analyses, we ran a robustness check with a different set of cut-points for the periods, and found that our results are robust to these alternative periodizations that adjusted each period by one year either side.[[5]](#footnote-3) Therefore, we have kept the above periodization, and the relative composition of the issues over these periods is shown in Figure 2.

------------------------------------- Insert Figure 2 about here -------------------------------------

 Figure 2 shows that there have been some clear shifts in the relative discussion of the issues over time. For example, when the forum began, *compliance* was the most frequently discussed issue, comprising 25% of the share amongst the six issues, but it waned over time, only comprising 10% in the final period. Another shift was the frequent early discussions of *nature* and *politics*, which both fell in relative usage compared to other issues over time. Discussions of *metrics and evaluation* increased over time, and especially towards the end of our period of study. The issue of *efficiency*, which had been present in the field to a much lower extent at the beginning, increased steadily, from 15% in the first period to 49% by the last period. *Efficiency* dominated from the year 2000 onwards. Finally, the issue of *the environmental movement* was relatively stable over the periods except for a decrease in the last period.

 Figure 3 shows a heat map of the absolute discursive distance of each group compared to the other groups by period. Generally, as we saw in Figure 1**,** the overall distance decreases over time, indicating increasing coherence. However, the heat map reveals outliers in each period that were not visible by looking at the field level.In the following, we unpack our case through a periodization in which we examine which groups were more or less discursively aligned with the wider discourse and analyze how different groups invoked different issues over time. Our periodization also relies on the graphs shown in Figure 4, which illustrate the discursive distance by group for each of the six issues in each period. Significant distance from the mean is shown at the p<.05 level and discussed in the following sections.

---------------------------------- Insert Figure 3 and Figure 4 about here-----------------------------------

**Period 1: 1992-1997**

 In the first period, 1992 - 1997, the field was more discursively coherent than in the following period, but not as coherent as it became over time. As shown in Figure 2, the most frequently discussed issues were 1) *compliance* 2) *nature* and 3) *politics*. Examining the groups’ discussion of the issues in Figure 4, we see that none of the groups are over- or under-represented in the amount to which they discuss *compliance*, indicating that there was alignment across the groups regarding the relative pertinence of this issue to the field. Much of the *compliance* discussion involved field members with experience in compliance-related practices explaining government policies or grants to others. For example, one message that contained a high percentage of *compliance* language stated, “The U.S. EPA has a great pollution reduction and energy efficiency program called Green Lights.”[[6]](#endnote-3) Another detailed, “I believe that ozone depleting substances are ALREADY regulated under Section 608 of the Clean Air Act (1990).”[[7]](#endnote-4) Actors invoked laws, rules, and government bodies when discussing *compliance*.

 *Nature* was also prevalent in the discourse during the first period. However, as shown in Figure 4, activists discussed this issue statistically more than other groups. In the forum, activists are individuals from organizations such as Greenpeace, campaigners for organizations such as Public Interest Research Groups (PIRGs), and self-described student activists. Messages from activists about *nature* talked about “the fight to strengthen the Endangered Species Act,”[[8]](#endnote-5) and work to “establish the Mojave Desert as the nation's 52nd National Park.”[[9]](#endnote-6) Although activists discussed *nature* regularly in this period, other groups did not discuss the issue as much. In fact, activists are generally an outlier in this period and remain an outlier over time, revealing their discursive distinctiveness throughout the evolution of this field, which is interesting, considering that the field started in large part based on their efforts. As shown in Figure 4, activists discussed three issues more on average than the other groups: 1) *nature*; 2) *politics*; and 3) *the environmental movement*. When activists discussed *politics,* they urged others to mobilize and call legislators regarding anti-logging bills, the endangered species act, and social justice legislation such as wage bills. An example of the messages about *politics* include: “The ESA [Endangered Species Act] is under tremendous pressure in Congress right now and will likely be significantly weakened….Call your representative and 2 senators on Tuesday, July 11.”[[10]](#endnote-7)

 Overall, we characterize the field in the first period as exhibiting medium coherence compared to the subsequent periods. This is evidenced by the overall discursive distance measure of 7% and the underlying differences between groups in their discussion of the issues. Three out of the six issues were characterized by a group that discussed it statistically more, on average, but activists were the only outliers in their discussion of the topics.

**Period 2: 1998-2003**

 The second period, from 1998 - 2003, exhibits the least discursive coherence compared to all other periods in our study. As shown in Figure 4, each issue had a group that discussed it statistically more on average than the other groups, and five different groups were outliers. In this period individuals from each group focused most on those issues that we would stereotypically associate as the core interest of their group.

For example, talk of *compliance* dropped, but it was still employed by EHS (Environmental, Health, and Safety) staff, who discussed it more than other groups. In the 1980s EHS staff were hired to manage environmental issues from a regulatory standpoint, focusing on legal requirements for pollution, toxic waste, and safety. EHS staff are the quintessential compliance-oriented group, so their focus on *compliance* is not surprising, even as other groups discussed the issue less. Overall, the field was moving away from compliance and towards voluntary efforts that went beyond compliance. In this period, discussions of *nature* also dropped overall, but students discussed *nature* the most, talking about Earth Day and activities such as planting trees, cleaning up rivers, and collecting money for rainforest preservation and endangered species. Students shared opportunities for conferences, trainings, and organizations to fight for the protection and restoration of the natural environment. For example, in 1998, a student wrote of an upcoming event, stating that:

This three-day training, co-sponsored by the NWF [National Wildlife Foundation]'s Campus Ecology Program and Xavier University's Center for Environmental program, will give participants the information and skills necessary to protect the Mississippi watershed, on campuses and in communities. Participants will learn how to conduct waste audits, take part in skills training workshops, and participate in a “toxic tour” along the polluted banks of the Mississippi river.[[11]](#endnote-8)

 Between 1998 and 2003, talk of *politics* and *the environmental movement* also dropped; however, as in the first period, activists continued to be the strongest proponents of both issues. Other groups began to refer to *the environmental movement* less on average, while the activists began to discuss it even more, creating a discursive wedge between the groups. This is interesting, because we begin to notice that activists are more likely to discuss three issues that were more central to the field at the very beginning but wane over time in other groups’ discourse – *politics*, *nature*, and *the environmental movement*.

 In the second period, the issue of *metrics and evaluation* began to be discussed by business people, who were architects, consultants, and product and service suppliers. In this period business people were compiling “green guides” for eco-friendly products and evaluations. They were using the forum to both gather information for these evaluations as well as publicize their products. Later on, sustainability managers would attempt to grab hold of rankings and evaluations in the field, but it is interesting to note that they were not the initial proponents of *metrics and evaluation* in sustainability in higher education.

 In this period, talk of *efficiency* increased. While this issue would eventually become central to the discourse of most groups, the analyses reveal that energy managers were the earliest group to regularly discuss *efficiency*. In this period, messages that contain a high degree of *efficiency* focused on adopting practices for energy and water conservation as well as cost savings. For example, an energy manager asked, “If anyone out there has adopted an energy policy on their college/university campus, i.e., something for staff and faculty that states temperature set points for summer/winter…”[[12]](#endnote-9) However, in closely reading messages that had a high amount of *efficiency* language, it becomes clear that some actors also began to employ *efficiency* in their discussions of how to frame and sell sustainability in higher education by discussing it in terms of cost savings and return on investment. For example, a faculty member shared a tool that calculated cost savings for energy efficiency measures, stating that it was “useful in making our case for conservation measures such as powering down monitors.”[[13]](#endnote-10) Students invoked *efficiency* when asking for help in framing projects to external audiences, such as university administrators; they used terms such as “cost/benefit analysis”, “payback”, and “economics.” One student said, “I'm putting together a paper on the economics of green building design, with the hope that this will be a useful document for showing to the administration here at Williams College or elsewhere.”[[14]](#endnote-11)

 Overall, in this period, each group focused more on those issues that were of core interest to them and talked past one another more than in other periods. Discursive coherence was at its lowest compared to all the other periods, evidenced by the overall average distance of 8%. Additionally, as shown in Figure 4, all six issues included a group that discussed the issue more, on average, and five different groups (EHS staff, students, activists, business people and energy managers) were outliers in the degree to which they discussed one or more of the issues.

**Period 3: 2004-2007**

 In the third period, 2004 - 2007, the overall distance between groups decreased, indicating a move towards greater discursive coherence, which would continue into the final period. While many of the issues continued to be over- or under-represented by a single group, both *efficiency* and *metrics and evaluation* did not have any group discussing them statistically more or less than the others, indicating increased coherence regarding the relevance of these two issues to the field.

 During this period, *efficiency* emerged as the most central issue. As we found in the previous period, the discourse reveals that not only was *efficiency* being employed to discuss priorities inside the field but it was also being utilized to discuss strategies for framing issues to external audiences. In a post that contained a high percent of *efficiency* language, an energy manager stated that he wanted to install energy feedback systems in his college’s dormitories, but he needed data to support the investment, because the group they needed the investment from “needs more convincing.” He continued, “I am seeking additional results to support the argument [sic] these feedback systems are effective in motivating conservation behavior.”[[15]](#endnote-12) *Efficiency* was becoming a central issue in the field and continued to also serve as a legitimating strategy for communicating sustainability to external audiences. Another *efficiency* message that was written by a student in 2005 outlined their strategy of framing through the lens of *efficiency* quite clearly:

I'm a student at Columbia University and part of the Earth Coalition, Columbia's Green Campus and Community Initiative. Columbia is about to take on a massive expansion project that will nearly double the size of our campus in the next 20 years…I'm writing to ask for specific examples of how green design has saved your institution money, and how money has been raised to off-set the additional up-front cost. From the conversations we’ve had with administrators and staff, it is clear that economics are the bottom line here. Therefore, we are looking to develop a very business-minded proposal.[[16]](#endnote-13)

 This student was pressuring her school to change, but she planned to frame sustainability in the language of something that the university valued – *efficiency* - indicating the beginning of some discursive alignment between movement members and the targeted colleges and universities. Seven years after this student’s message, the expansion project at Columbia University that she aimed to influence became the first LEED (Leadership in Energy and Environmental Design) Platinum certified campus in the United States, attaining the highest possible level of green building certification. This outcome highlights the fact that these conversations do not just reside in this discursive backstage, but are essential for the mobilization and strategic framing that underpin action in the field.

 The second-most discussed issue in this period was that of *the environmental movement*. As before, this issue was primarily discussed by activists, including individuals from organizations such as the National Wildlife Federation, the Energy Justice Network, the Environmental Justice and Climate Change Initiative, and Greenpeace, who persisted in talking about *the environmental movement* and *politics* more on average. *Nature*, *politics*, and *compliance* were all discussed less overall than in the previous period, and would continue to decline in the final period. The continued decrease in *compliance*, which was talked about the most in this period by staff in facilities management, hints at a schism between what it means for the field to be centrally focused on compliance versus voluntary commitments to sustainability.

 Overall, the third period was more discursively coherent compared to the previous period. However, there were some issues whereby certain groups were statistically distinctive, which follow on generally with the patterns we observed in the previous periods. We characterize the third period as one of medium coherence. This is evidenced by the overall distance of 7% and the underlying differences between groups. As shown in Figure 4, four out of six of the issues were discussed more on average by a group and three groups (activists, facilities managers, and EHS staff) were discursive outliers.

**Period 4: 2008-2010**

 In the final period, 2008 - 2010, the overall average distance between groups was the lowest of all the periods thus far, indicating a continued path towards discursive coherence. Figure 4 shows the lessening of distance across groups over the issues. The conversations in this final period were even more focused on *efficiency* and *metrics and evaluation*, while other issues either decreased or remained constant.

 *Metrics and evaluation* increased from 10% of the discourse across the six issues in the previous period to 28% of the share in this period. The primary measurement tool in this field was the Sustainability Tracking, Assessment & Rating System (STARS), which was developed between 2006 and 2009. It therefore makes sense that the discourse was heavily oriented towards *metrics and evaluation* during this period. Additionally, towards the end of this period *The Princeton Review* began publishing green school rankings based on the data from the STARS reporting tool. The discursive distance for *metrics and evaluation* indicates relative coherence between the groups, with no one group discussing the issue in a statistically different manner. Sustainability managers, the nascent professional group in this field, contributed extensively to the amount of discourse on *metrics and evaluation*. They were increasingly responsible for measuring progress on sustainability within their colleges and universities. Messages with a high composition of *metrics and evaluation* in this period discussed questions of how schools should measure or assign points to certain activities, whether or not schools should pay to participate in rating systems, and whether or not it was better to enable multiple rating systems to persist or to strive to have a singular system. One sustainability manager shared a letter that she had written to the non-profit organization the Sierra Club out of frustration with the fact that they were collecting data that differed slightly from the STARS tool. She wrote the following:

I would implore you to please review your survey form for next year, and mirror the questions and data that are being used for the AASHE STARS sustainability tracking rubric, in which we are a charter participant. In that way, it will be easier for us to respond to your questionnaire, using the same data we will be collecting and regularly updating as part of that rating and benchmarking system. The data, which will be collected through the STARS program was rigorously evaluated by institutional sustainability practitioners and advisors for being the objective metrics we SHOULD be evaluating and using to measure our sustainability progress.

As exemplified in this excerpt, questions of commensuration and accountability became more central to the discourse in this period. This was one of the few changes in the discourse between the third and fourth periods. As was the case in the previous period, activists continued to discuss three issues that were of decreasing discursive importance to the rest of the field members – *nature*, *politics*, and *the environmental movement* and facilities management staff discussed *compliance* more than other groups.

 We characterize this final period as one of high discursive coherence compared to the previous periods. This is evidenced by the lowest overall distance between groups, at 5%. Four out of six of the issues included a group that utilized the issue more, on average, and only two groups (i.e. activists and facilities managers) were outliers.

*Discursive Agreement*

 In our investigation of the evolution of discourse in this field, we have also analyzed discursive agreement, or the level of agreement between field members regarding their opinions on *how* different issues should operate in the field. As described in our methods section, we hand coded a purposeful sample of 1,257 messages grouped into 355 conversations that contain a high amount of discourse representing each of the six issues in each period. Through our analyses, we find that the majority of conversations reflected agreement between field members – 78% of the conversations contained no disagreement. A typical conversation in which individuals expressed no disagreement focused on sharing information. For example, in 1999 a forum member wrote:

I am currently involved in designing a proposal for a composting program here at [University Name]…I would appreciate if you could send any relevant information regarding your university's composting program. Information such as cost-benefit analysis, start-up procedures, design criteria, etc.

 Individuals from Brown University, Cornell University, and Rensselaer Polytechnic Institute responded by sharing advice and experience that they had gained from instituting composting programs. They shared information from conferences, contact details for schools with successful programs, and names of waste companies that offered composting services.

 Overall, 22% of the coded conversations exhibited disagreement. These conversations often began in a similar way as the example above, with an individual asking for help or advice, but they were followed by disagreement in the replies. For example, in the third period a discussion about *efficiency* started with an individual writing the following:

[My university] is interested in learning about steps taken, policies implemented, and education campaigns launched that address energy conservation regarding computer use. Many computer departments advise for everyone to leave computers on overnight so they can receive updates. What have your schools done to ensure that computers are taking up the minimum amount of energy necessary during hours of non-usage?

The first response to this post raised a point of contention regarding these efforts at *efficiency*, stating, “I realize that you asked about behavioral change, but I can't resist editorializing a bit. It is my opinion that structural improvements to infrastructure are more effective than behavioral changes in improving sustainability performance.” Although both message authors acknowledged that *efficiency* was central to sustainability, they had different opinions on the best pathway to achieve *efficiency*. In fact, in the third period, other discussions about *efficiency* highlighted similar points of disagreement, for example when an individual responded to someone’s disparaging talk of behavior change initiatives by saying, “It is important to BOTH address human behavior AND building systems.”

We find through our hand coding that in the last period *efficiency* and *metrics and evaluations* conversations contained a high level of disagreement, even though these two issues had reached relative discursive coherence by this time. For example, in response to a post about *metrics and evaluations* that asked about using kW/gsf (kilowatts per gross square footage) to measure energy usage in buildings, an individual responded that, “…it just seems like there are so many things that prevent you from making an apples-to-apples comparison on the kW/gsf metric if you're going to be identifying or even celebrating a ‘leading building’ as you say.” The message authors were both talking to a similar degree about *metrics and evaluations*, but they differed in their opinion of the best metrics for evaluating the sustainability of a building. In other *metrics and evaluations* conversations during this time, there was also disagreement regarding concerns such as how different green building standards weighted materials in their scoring system and whether or not field members should use one energy tracking tool versus another. Overall, we find that although *efficiency* and *metrics and evaluation* became more coherent in periods three and four, with no one group statistically discussing them to a greater or lesser extent, field members disagreed with one another when talking about these issues.

 In fact, when we calculate the discursive agreement surrounding each issue in each period, we find that when an issue exhibited higher discursive coherence, the conversations related to that issue actually contained more *disagreement*. There was an inverse relationship between discursive coherence and discursive agreement, with a -.27 correlation between the two measures. On average, 74% of conversations about issues that were coherent in a period exhibited agreement, while conversations about issues that were not coherent had 79% agreement. Furthermore, this pattern held within each issue. When *compliance* was not coherent, its agreement level was higher, at 70%, compared to 65% when it was coherent. When *efficiency* reached coherence, its agreement level dropped from 85% to 75%, and during the periods when *metrics and evaluation* was coherent, it dropped from 80% agreement to 77% agreement. For the other three issues, coherence was never reached and they had relatively higher levels of agreement than for any of the other coherent issues – the *environmental movement* had 78% agreement, *nature* had 81%, and *politics* had 85%.

 Why might more coherent issues exhibit more disagreement? One reason may be that more coherent issues are judged by field actors as more consequential to the field, and therefore are seen as more “worthy of debate.” Based on this consideration, we decided to carry out an additional analysis to see whether or not messages about more coherent issues received more attention, or more replies, than messages about less coherent issues.

*Discursive Coherence, Agreement, and Attention*

 In order to investigate whether or not messages related to coherent issues received more attention, we calculated the response rate to the 20 initial messages (i.e. those with a new subject line) most closely related to each issue (i.e. those that contained the highest percentage of words from each topic word list) in each of the four periods. This sample contained 480 messages, or 10% of the overall first messages.

 We find that posts related to coherent issues were more likely to receive a response and received more responses on average compared to posts related to incoherent issues. Overall, initial messages about coherent issues had a 47% response rate, while initial messages about issues that were not coherent had a 19% response rate. On average, the 20 initial messages in each period generated 39 responses for coherent issues and 11 responses for issues that were not coherent. The correlation between coherence and response rate is .64.

---------------------------------- Insert Figure 5 about here-----------------------------------

 As shown in the graphs in Figure 5, we find the same pattern in every period – more coherent issues received more attention - but interestingly the difference in response rates between coherent and non-coherent issues diverged even more over time. Over time the gap in attention grew. As shown in the graphs, this was mainly driven by an increase in attention towards more coherent issues, which were increasingly more likely to receive a response and more likely to receive more responses on average. For example, in period four, the initial messages in *metrics and evaluation* and *efficiency*, which were both coherent, had a 70% response rate (70% of the initial messages related to these two issues received at least one response) while *compliance*, *nature*, *politics*, and the *environmental movement* had a 20% response rate (only 20% of the initial messages in these areas received a response). In fact, there were zero responses to the 20 initial messages about the *environmental movement* in the last period – none of them materialized into conversations, which would have opened the door for debate. When someone posted a message that was highly related to the environmental movement, it did not solicit a response in this last period. The overall correlation between the number of responses an initial message generates and the presence of agreement in the eventual conversation that ensues is -.33. When a post receives more responses, the ensuing conversation was more likely to exhibit disagreement.

 Based on these analyses, we conclude a number of interesting findings. First, the more coherent an issue is, the more that initial messages about that issue receive attention (measured by the response rate and number of responses to initial messages). Second, when messages receive more responses there is a higher likelihood of disagreement in the conversation. Additionally, our hand coding of conversations showed that even when we only analyze messages that turn into conversations, coherent issues were still more likely to exhibit disagreement. Together, these findings support the idea that more coherent issues are seen as more consequential, and therefore more “worthy of debate” in the nascent field, and they also show that there is value in separating discursive coherence from discursive agreement as the two do not necessarily go hand-in-hand.

**Robustness Checks**

*Author Dispersion*

 In interpreting our results, we wanted to check whether or not any of the issues we identified were primarily being driven by either a small number of individuals or one or two groups. Therefore, we examined the authors of the 100 posts that contained the highest percent of words from each issue. We found that the issues are dispersed across numerous individuals and groups, which allays the concern of the influence of a small number of actors driving any of the issues. As shown in Table 3, the 100 posts that most closely represented each issue contained a minimum of 44 separate individual authors, meaning that no one individual was contributing more than 2.2% of the top 100 posts. Additionally, the minimum number of groups contributing to the 100 posts for any single issue was 8 out of a possible 10, indicating that multiple groups discussed each of the issues.

**-------------------------------------** Insert Table 3 about here **-------------------------------------**

*Minority Groups*

 Additionally, we wanted to test whether or not the outlier groups in each period were discursively distinct because they contributed fewer messages in a period. We therefore ran a robustness check with period 3 (2004 - 2007) and period 4 (2008 - 2010), in which activists were the predominant outlier compared to the other groups that we analyzed. We chose these two periods because they had enough representation from other smaller groups to make a comparison, unlike the earlier years which were scarcer in terms of messages from other groups.

 To ensure that outliers were not being driven by their smaller number of messages, we ran a robustness check with 12 additional groups that had fewer messages than the activists during these two periods.[[17]](#endnote-14) The results of the robustness check are shown in the heat map in Figure 6, which displays the discursive distance for each group compared to all the other groups, showing a color gradation ranging from the highest distance shaded in red and the lowest shaded in green. The results show that the outlier position of the activists’ discourse during these two periods is not attributable to their relatively smaller number of messages. Even when compared to the 12 other smaller groups, activists are still far and away the most discursively distant group, averaging 20% distance in period 3 and 13% distance in period 4. In period 3, excluding activists, the other infrequent posters averaged 6% distance, less than one-third of the distance of activists. These results are similar for period 4, whereby the other minority groups averaged 5% distance and the next-closest group had a distance measure of 10%. We are therefore confident that the activists’ outlier status is not due to their lower number of messages, but is rather a measure of their distinctive discussion of the issues.

**-------------------------------------** Insert Figure 6 about here **-------------------------------------**

 Along these same lines, in the consideration of the changing composition of issues, it is worth noting that group entry and exit is not the sole contributor of the discursive changes in the field. While inter-group replacement is likely a factor in changing field-level discourse (e.g. students’ activity in the forum drops over time, so issues that students talk about more frequently, like *nature*, are likely to then drop as well), it is not the whole story. For example, if we just examine the students’ discursive trends, we see that the within-group use of certain issues shifts over time, becoming more similar to the overall trends we see in the field-level discourse. For example, students discussed *efficiency* more than ten times as much in 2010 compared to 1992 and *the environmental movement* six time less over the same period. This preliminary evidence reflects that the entry and exit of groups cannot fully explain the discursive change at the field level; there are also meaningful within-group changes over time.

**Discussion and Conclusion**

In this study, we investigate the backstage discourse among multiple actors in the emergence of a nascent field in order to shed light on how the language of a new field evolves and potentially coheres into a stable social order. The field that we have chosen to study in this case - sustainability in higher education - sits at the intersection of movements and the organizations that they are attempting to influence and change. The field began as a site of classic movement versus target contention in the early 1990s but evolved over time to comprise new commitments, partnerships, roles, practices, and standards for operating.

By unpacking a case of discursive change in the evolution of this field from a site of contentious activity by disparate groups of actors to a settled field, we make three contributions, which we discuss in detail in the following. First, we contribute an approach for studying “shared understanding” in fields, and show that there is value in theoretically and empirically separating what we term discursive coherence from discursive agreement. Second, we find that although discursive coherence increases in this field over time, it does not progress in a linear fashion, or cohere to the same degree at the same time for all actors in the field. Finally, examining the evolution of shared understanding in a nascent field that was founded in large part due to efforts by a social movement, we can better understand the dynamics between social movements and other actors in field construction projects.

*Separating Discursive Coherence from Discursive Agreement*

 Our empirical analyses support the argument that there is value in separating discursive coherence from discursive agreement in what has to date been termed “shared understanding.” Even though shared understanding has been identified as an essential indicator of field development and settlement ([Fligstein and McAdam 2012](#_ENREF_16)), it has been difficult to measure and trace over time ([Mohr 2005](#_ENREF_47)). In this paper, we separate 1) whether or not field members see the same set of issues as equally pertaining to a field (discursive coherence) from 2) whether or not they share opinions about how those issues should operate in the field (discursive agreement). By doing so, we find that the evolution from an unsettled and contentious field to a relatively settled one is associated with increased discursive coherence over time, as actors reach relative consensus regarding which issues are core to this field. However, we find that once an issue reaches coherence it actually exhibits less discursive agreement, meaning that the actors are more likely to disagree about how to implement that issue in the field. Our findings show that more attention is paid to coherent issues in the discourse, supporting the idea that field actors view more coherent issues as more consequential and therefore more “worthy of debate,” and those issues actually draw more contestation as actors vie for control over the fate of the more consequential and central issues.

Thus, even as a field exhibits greater discursive coherence*,* there is still room for underlying contestation and disagreement over issues, in the form of both the presence of persistent discursive outliers (which we found with the activists in this case), as well as the ongoing disagreement over how central issues should operate. In fact, increased discursive coherence may enable a certain amount of healthy conflict and disagreement. Before actors can argue about the best way to go about addressing an issue, they must first identify a set of mutually-agreed upon issues from the world of possible concerns. We find that discursive evolution in a new field exhibits similar processes to agenda-setting in a legislative arena ([Baumgartner and Jones 2010](#_ENREF_3); [B. G. King et al. 2007](#_ENREF_29)). Similar to legislative politics, fields that emerge from social movement pressure for change are churning locations of interaction in which new issues ebb and wane in importance, often spurring controversy and contention ([B. G. King and Pearce 2010](#_ENREF_28)). Fields are very rarely completely settled inasmuch as discursive coherence creates opportunities for disagreement among members of the field about how to handle relevant issues. By distinguishing between discursive coherence and discursive agreement, we offer greater conceptual clarity for measuring shared understanding in fields, as well as greater empirical purchase for studying discursive indicators of field development.

*The Path towards Discursive Coherence*

 Our study also provides evidence that the discourse in fields does not necessarily cohere in a linear fashion ([Fligstein 1997](#_ENREF_14), [2001](#_ENREF_15); [Fligstein and McAdam 2012](#_ENREF_16); [Martin 2003](#_ENREF_40)). We find that some issues in the field of sustainability in higher education cohered early on, while others remained less coherent. Additionally, the discourse of some actors were aligned throughout the period of study, while other groups remained persistent outliers. Coherence did not increase at the same time and to the same degree for all of the issues across all of the groups in the field.

 In the first period, there was medium coherence as to the relative importance of the core issues to the field. However, in the next period, there was actually less coherence. Each group emphasized issues that reflected their own concerns – such as *compliance* for environmental health and safety staff, *nature* for students, *efficiency* for energy managers, *metrics and evaluation* for business people, and *politics* and *the environmental movement* for activists. This is an interesting finding, because our knowledge of the field as having origins in contention may have led us to think that coherence would be lowest in the first period and then increase over time. However, in the very first period there is a smaller group of people who are mainly interested in pursuing changes to practices inside colleges and universities. At first, they are generally on the same page about which issues matter to this field. However, the lack of coherence is strongest in the second period, as more people enter the field, there is a greater diversity of actors regularly posting to the forum, and perhaps the stakes seem higher as it is becoming clearer that this field is going to affect a wide range of positions and practices. This is when we see each group reflecting their core interests, as individuals carry their preferences, capital (social, economic, and cultural), as well as their habitus, or their dispositions, into the new field; these findings emphasize that even a nascent field is not a tabula rasa of social interaction ([Bourdieu 1984](#_ENREF_7); [Bourdieu and Wacquant 1992](#_ENREF_8)).

 Although the field reaches relative discursive coherence over time, we find that certain groups remain persistent outliers in the conversations. In our case, activists, who were members of groups such as Greenpeace and advocacy organizations, were ongoing contributors to the field’s discourse, but they were persistently on the fringe. Activists remain discursively distinctive throughout the period of study, favoring issues such as *the environmental movement, nature,* and *politics*, rather than the issues of *efficiency* or *metrics and evaluation* that became more pertinent to the discourse of other groups over time. Additionally, when other groups began to refer to *the environmental movement* less on average, activists began to discuss it even more, creating a wedge between the groups. Such differences underlie the churning of contestation that likely characterizes many fields. Outliers, like activists in our analysis, may continue to engage in the field discourse as ongoing challengers who voice divergent views about what direction the field should take, even when all other groups’ discourse coheres. So reaching relative discursive coherence does not mean that *all* actors have reached consensus as to the issues that matter to the field. In this case, we have a field that settled despite this continued divergent voice.

*Field Formation out of Social Movement Pressure*

The final contribution of this study is that we are able to identify discursive patterns that are likely present in similar fields that are formed around issues that are promoted initially by social movements, but have eventual consequences for organizations. What is important in this case is not only the patterns of discourse, but also how the content of the discourse changed over our period of study. We find that the discourse shifted in this movement-originated field, away from a social movement orientation and towards a more professional and rationalized lens on sustainability in higher education.

 There have long been theoretical and practical concerns regarding processes of social movement professionalization ([Hwang and Powell 2009](#_ENREF_24); [Lubove 1965](#_ENREF_36); [Staggenborg 1988](#_ENREF_54)) and rationalization ([Michels 1911](#_ENREF_45); [Piven and Cloward 1979](#_ENREF_49)), and debate has persisted regarding how these processes affect the degree to which a movement can maintain its radical stance ([Zald et al. 2005](#_ENREF_59)). Added to that, there is recent concern that the field of sustainability and the associated area of corporate social responsibility have become institutionalized and (potentially) co-opted by organizations that emphasize the “business case” for sustainability, rather than the original substantive and broad agenda. Our evidence supports these concerns in part.

 We find that the discourse in the field of sustainability in higher education cohered around *efficiency* and *metrics and evaluation* over time, indicating a trend towards rationalization. The field did not start out with a discursive focus on these issues, and while discussions of them grew in part through the entry of certain actors, such as sustainability managers and energy managers, it is also surprising that some of the actors who we would normally associate with the movement for sustainability, such as students, also adopted this discourse in this field. The discourse of *efficiency* reflects organizational concerns with cost savings, and sustainability was increasingly aligned with this rhetoric, especially through the focus on energy management and the conservation of resources. In terms of *metrics and evaluation*, the trend towards transforming goals or outcomes into quantifiable metrics has been noted in prior research on commensurability ([Espeland and Stevens 2008](#_ENREF_13); [Meyer 2010](#_ENREF_44); [Timmermans and Epstein 2010](#_ENREF_56)) and in particular on rankings and ratings in higher education ([Sauder and Espeland 2009](#_ENREF_52)). One reason that *efficiency* and *metrics and evaluation* become more central in this field is likely because these issues are central to meeting university administrators’ needs to see quantifiable performance and to institute cost-savings projects, whereas supporters of sustainability as *nature* or as part of *the environmental movement* found it harder to get other groups to adopt their discursive areas. Thus, the discourse over time reflected a trend towards rationalization in this field, perhaps as a means to accommodate administrative demands for measurement and quantification. However, our analyses reveal two caveats to this trend towards rationalization. The first is the aforementioned finding that activists resisted the focus on *efficiency* and *metrics and evaluation* and the second is that we found evidence that some actors who were agitating for change were often employing this language strategically.

Social movement activists, by definition, are agitators, or disruptors of the status quo ([Piven and Cloward 1979](#_ENREF_49)). In our case, activists resisted the dominant issues and did not did not appear to exhibit co-optation, one of the central theoretical concerns of the professionalization and rationalization of movement-oriented fields. In our study it is difficult to tell if activists purposefully positioned themselves as discursive outliers due to their oppositional stance or if they were outsiders primarily because the field moved away from their central concerns. This is an important question that could be investigated further by comparing the discursive trajectory of this field to other fields where activists are essential to the formation of the field and remain engaged in the ongoing discourse**.** However, in this field, the activist outliers likely produced what is termed a radical flank effect ([Haines 1984](#_ENREF_21)). By remaining on the fringe, the ideas of more coherent actors, who were still advocating for change, such as many students and non-profit workers on the forum, would have seemed more reasonable (less “radical’) to university administrators.

The second caveat on the trend towards rationalization is that actors were not passively swept away by these shifts but were often employing this discourse in a strategic manner. This is most clearly visible in our evidence of the intentional employment of *efficiency* to appeal to front-stage audiences. For example, when a Columbia University student wanted to put together “a very business-minded proposal” because it seemed to her that “economics are the bottom line here,” she sought to intentionally frame sustainability in the language of efficiency to the administration at her university. This anecdote illustrates that actors seeking to legitimate a new field are cognizant of the differences between how issues are discussed in the back-stage versus how they are evaluated by front-stage audiences. In order for framing to be effective it should resonate with the beliefs, priorities and ideas of its target audience ([Benford and Snow 2000](#_ENREF_4); [Hardy et al. 2000](#_ENREF_22); [B. King 2007](#_ENREF_27); [Klandermans 1984](#_ENREF_31); [McAdam 1986](#_ENREF_41)). Being a “socially skilled” actor relies on convincing others to collaborate through perspective-taking, establishing shared identities and employing shared cultural frames that motivate others ([Fligstein 2001](#_ENREF_15)). Our evidence of these strategic attempts to sell sustainability to administration and other external audiences contributed in part to the rise of discourse that reflected rationalization in the field, and we would expect to find similar trends in other fields that sit at the intersection of movements and organizations.

*Future Work and Conclusion*

 While our approach goes beyond many empirical cases of field evolution, it also has limitations and opportunities for future research. We recognize that there are additional factors beyond discourse that should be considered when studying nascent fields, such as changes in practices, standards, actor composition and events. In fact, many of these indicators have been examined in previous studies of field evolution ([Armstrong 2002](#_ENREF_1); [Hoffman 1999](#_ENREF_23); [Lounsbury 2001](#_ENREF_34)). We focus on discourse in large part because previous theoretical work has stressed the importance of shared understanding as an indicator of field formation, while to date there have been few empirical studies that have attempted to measure changes in shared understanding. However, future work could integrate discursive indicators with other factors, for example by examining whether or not shared understanding that is constructed behind-the-scenes precedes, develops in parallel with, or lags behind other indicators of field emergence and settlement.

 Our findings also highlight the importance of the continued use of qualitative methods for analyzing text. In this case, a purely quantitative approach would have only showed an increase in discursive *coherence* over time, which could be mis-interpreted as *agreement* and miss the important underlying contestation that continued in the field. Future studies should continue to integrate multiple methods to examine the full picture of changing discourse over time.

In conclusion, our data and methodological approach have enabled us to pull back the curtain on the construction of shared understanding in a nascent field. Our findings contribute to an understanding of the process of field emergence by assessing discursive coherence and discursive agreement amongst a wide array of actors over time to trace the changing discourse in the field of sustainability in higher education. We find that the issues in this field have been contested by various groups but reach relative discursive coherence over time. However, we also uncover some important caveats. The process of discursive coherence did not progress at the same time and to the same degree for all of the groups, and some groups in particular remained outliers while others coalesced around the same set of issues more quickly. Additionally, even when the discourse in the field reaches relative coherence, we find an increased disagreement around the most coherent issues, indicating that fields can exhibit a stable order while allowing for ongoing contestation.

**Figure 1: Discursive Coherence (With Linear Trend Line)**

**Figure 2: Composition of Issues in Forum over Time**

**Figure 3: Heat Map of Absolute Distance by Group by Period**

|  |  |
| --- | --- |
|  | **Distance to Other Groups** |
|  | Period 1 1992-1997 | Period 21998-2003 | Period 32004-2007 | Period 42008-2010 |
| Activist | 25% | 14% | 22% | 13% |
| Business Person | 7% | 7% | 6% | 3% |
| Environmental, Health, & Safety (EHS) | 8% | 11% | 5% | 3% |
| Energy Manager | 8% | 11% | 8% | 5% |
| Facilities Management | 4% | 8% | 10% | 9% |
| Faculty | 4% | 8% | 4% | 3% |
| Non-profit Worker | 3% | 5% | 6% | 3% |
| Recycling Officer | 5% | 3% | 4% | 3% |
| Student | 3% | 6% | 3% | 4% |
| Sustainability Manager | 7% | 4% | 4% | 4% |
|  |  |  |  |  |
| **Average by Period** | **7%** | **8%** | **7%** | **5%** |

**Figure 4: Graphs of Raw Distance by Group by Period (\*\*p<.05)**

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**Figure 5: Response Rate and Number of Responses by Coherent and Non-Coherent Issues**

**Figure 6: Heat Map of Period 4 and Period 5 Distance By Wider Group of Actors**

|  |  |  |
| --- | --- | --- |
|   | Period 3: 2004 - 2007 | Period 4: 2008 - 2010  |
| Distance | Distance |
| Activists | 20% | 13% |
| Administrative Assistants\* | 7% | 10% |
| Administration Members\*  | 7% | 7% |
| Business Person | 5% | 3% |
| Business Services Staff\* | 4% | 5% |
| Capital Planning Staff\*  | 5% | 5% |
| Dining Services Staff\* | 11% | 6% |
| Energy Manager | 6% | 4% |
| Environmental, Health, and Safety Officers | 4% | 2% |
| Facilities Management | 10% | 8% |
| Faculty | 2% | 2% |
| Housing Staff\*  | 6% | 6% |
| Information Technology Personnel\* | 10% | 5% |
| Lab Managers\* | 2% | 3% |
| Non-profit Workers | 3% | 2% |
| Public Sector Workers\* | 5% | 6% |
| Researchers (inside university setting)\*  | 5% | 4% |
| Researchers (outside university setting)\*  | 6% | 5% |
| Recycling Manager | 2% | 2% |
| Student | 0% | 3% |
| Student Affairs Staff\*  | 6% | 6% |
| Sustainability Manager | 1% | 3% |
| \*Groups with fewer posts than Activists |

**Table 1: Topics Word Lists**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Compliance** | **Nature** | **Politics** | **Metrics & Evaluation** | **Efficiency** | **Environmental Movement** |
| air | activities | act | aashe | building | action |
| chemical | area | action | brown | conservation | alliance |
| cost | day | american | colleges | consumption | campaign |
| epa | earth | association | cool\_schools | coordinator | challenge |
| federal | earth\_day | budget | data | cost | clean |
| government | endangered | call | efforts | data | climate |
| health | event | committee | institutions | efficiency | climate\_change |
| levels | events | congress | program | electricity | coalition |
| management | forest | government | questions | energy | energy |
| million | habitat | house | ranking | energy\_star | global |
| pollution | local | legislation | rating | equipment | global\_warming |
| prevention | national | letter | report | management | movement |
| quality | natural | million | report\_card | power | national |
| regulations | park | national | schools | program | network |
| safety | parks | president | sei | projects | organizations |
| standards | public | program | share | reduction | organizing |
| states | region | senate | stars | saving | peace |
| u.s | species | support | survey | technology | people |
| waste | tree | vote | system | usage | world |
| water | wildlife | washington | year | utility | youth |

**Table 2: Groups in the Sustainability Forum**

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Total Posts** | **Percent of Posts** | **Cumulative Percent of Posts** |
| 1) Sustainability Manager (University / College Staff) | 2447 | 26% | 26% |
| 2) Student  | 1150 | 12% | 38% |
| 3) Recycling Manager (University / College Staff) | 967 | 10% | 48% |
| 4) Faculty  | 909 | 10% | 57% |
| 5) Non-Profit Worker  | 880 | 9% | 67% |
| 6) Facilities Management (University / College Staff) | 504 | 5% | 72% |
| 7) Activist | 337 | 4% | 75% |
| 8) Business Person  | 324 | 3% | 79% |
| 9) Environment, Health and Safety (University / College Staff) | 320 | 3% | 82% |
| 10) Energy Manager (University / College Staff) | 270 | 3% | 85% |
| 11) Sustainability Committee Member (University / College Staff) | 235 | 3% | 87% |
| 12) Public Sector Worker  | 127 | 1% | 89% |
| 13) Researcher (University / College Staff) | 123 | 1% | 90% |
| 14) Administrative Assistant (University / College Staff) | 122 | 1% | 91% |
| 15) Business Services (University / College Staff) | 93 | 1% | 92% |
| 16) Lab Manager (University / College Staff) | 87 | 0.9% | 93% |
| 17) K-12 Staff  | 48 | 0.5% | 94% |
| 18) Student Affairs (University / College Staff) | 43 | 0.5% | 94% |
| 19) Librarian (University / College Staff) | 41 | 0.4% | 95% |
| 20) Information Technology (University / College Staff) | 37 | 0.4% | 95% |
| 21) Administration (University / College Staff) | 36 | 0.4% | 95% |
| 22) Researcher (Outside the University) | 27 | 0.3% | 96% |
| 23) Capital Planning (University / College Staff) | 25 | 0.3% | 96% |
| 24) Communications (University / College Staff) | 25 | 0.3% | 96% |
| 25) Dining (University / College Staff) | 23 | 0.2% | 96% |
| 26) Housing (University / College Staff) | 23 | 0.2% | 97% |
| 27) Environmental Policy Or Stewardship (University / College Staff) | 21 | 0.2% | 97% |
| 28) Center Director (University / College Staff) | 11 | 0.1% | 97% |
| 29) Academic Affairs (University / College Staff) | 5 | 0.1% | 97% |
| 30) Purchasing (University / College Staff) | 1 | 0.0% | 97% |
| 31) Other: Unidentifiable | 279 | 3% | 100% |

**Table 3: Robustness Check for Author Dispersion**

|  |  |  |
| --- | --- | --- |
|   | Number of individual authors (out of 100 posts) | Number of groups authoring (out of top 10 groups) |
| Top 100 Posts on Efficiency | 69 | 9 |
| Top 100 on Compliance | 50 | 10 |
| Top 100 on Nature/ Ecology | 45 | 8 |
| Top 100 on Politics | 44 | 8 |
| Top 100 on Metrics | 62 | 8 |
| Top 100 on Environmental Movement | 53 | 9 |

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**Notes**

1. In 2009 there was an attempt to shift the field conversations to a technologically-superior platform that was organized under topics and threads and could have provided a better structure to the field discourse. But between October 2009 and December 2010, there were only 592 posts to this new platform, while the forum that we study had 1,662 posts over the same period of time. In 2016, the new platform was discontinued, as the threads on it had an average of 400 days since their last posts. [↑](#footnote-ref-1)
2. The additional words that were removed in the analysis were: sustainab\*, environment\*, campus, university, college, green, education, office and school. [↑](#endnote-ref-1)
3. One additional category, “unidentifiable,” was used for individuals whom we could not identify. This category comprised 2.9% of the overall posts. [↑](#endnote-ref-2)
4. When multiple messages had the same subject line in different time periods, a manual check was done to see if they were building on the same conversation or if they were separate messages that just happened to have the same subject line. [↑](#footnote-ref-2)
5. With the robustness checks, Period 2 consistently has the least coherence (whether it ends in 1997 or 1998), Period 4 consistently shows the most coherence (whether it begins in 2008 or 2009), and Periods 1 and 3 show a similarly medium degree of coherence (whether Period 1 begins in 1997 or 1998 and ends in 2003 or 2004 and whether Period 3 starts in 2004 or 2005 and ends in 2007 or 2008). [↑](#footnote-ref-3)
6. Green Schools Forum, 4 May 1996. [↑](#endnote-ref-3)
7. Green Schools Forum, 1 November 1993 [↑](#endnote-ref-4)
8. Green Schools Forum, 15 November 1993 [↑](#endnote-ref-5)
9. Green Schools Forum, 5 April 1994 [↑](#endnote-ref-6)
10. Green Schools Forum, 10 July 1995 [↑](#endnote-ref-7)
11. Green Schools Forum, 8 February 1998 [↑](#endnote-ref-8)
12. Green Schools Forum, 3 November 1999 [↑](#endnote-ref-9)
13. Green Schools Forum, 20 May 2002 [↑](#endnote-ref-10)
14. Green Schools Forum, 16 October 2002 [↑](#endnote-ref-11)
15. Green Schools Forum, 12 June 2007 [↑](#endnote-ref-12)
16. Green Schools Forum, 22 Jan 2005 [↑](#endnote-ref-13)
17. Additional groups include: 1) Administrative assistants (85 messages); 2) Administration members (32 messages); 3) Business Services staff (90 messages); 4) Capital Planning staff (25 messages); 5) Dining Services staff (23 messages); 6) Housing staff (17 messages); 7) Information Technology personnel (15 messages); 8) Lab managers (86 messages); 9) Public Sector workers (42 messages); 10) Researchers (inside university setting) (107 messages); 11) Researchers (outside university setting) (11 messages); 12) Student Affairs staff (27 messages). [↑](#endnote-ref-14)