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The diffusion of sustainability activism at an American universtiy

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The diffusion of sustainability activism at an American university

by

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A thesis submitted to the graduate faculty
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MASTER OF SCIENCE

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Abstract

This is a qualitative study of collective action at a large American university. The project explores the motivations for civic engagement of individuals. Eighteen respondents that had been involved with a Sustainability and Greening (SAG) council were interviewed with a biographical in-depth interview approach using an open-ended interview guide. Data was analyzed deductively using Diffusion of Innovations theory as a guide. Categorizing individuals according to Diffusion of Innovation adopter categories proved useful in understanding motivations to engage. Results show that individuals went through an innovation-decision process and were motivated by perceived compatibility of the SAG council collective action with their prior knowledge and current social context, relative advantages of the SAG as an innovation, and most notably by opinion leader endorsements. The study contributes to collective action research by showing how actors can be differentially motivated over time and how engagement can be nurtured to meet our looming social problems.

Chapter 1: Introduction

This project explores the emergence and success of an activist organization organized for the purpose of improving sustainability. It uses a qualitative approach to data collection and analysis to examine how, over the past 8 years, a collective action group located at an American university has evolved, received official recognition from the university administration, and carried out its work. The research examines the factors that motivate individuals to become involved in civic engagement. It explores the influences of colleagues, friends, family, education, nature, life experiences and the media, on motivation to engage. The project examines these factors within the context of the diffusion of innovations perspective, wherein individuals are presumed to be motivated to action by the combined effects of information, persuasion by opinion leaders, and facilitation of efforts to organize and act.

At the dawn of the 21st century, Harvard public policy professor Robert D. Putnam raised a warning about the erosion of civic engagement in American society. His popular book, *Bowling Alone*, uses evidence from sociological studies and surveys that shows associational membership in America is stagnate or in decline (Putnam 2000). Labor unions, church groups, fraternal and veterans' associations and school service groups have lost participants. Membership in professional associations has risen over the same time period, but not as much as would be expected considering the growth of the white collar and professional sector. Environmental groups have also grown in numbers, but

involvement is most often characterized by simply writing a membership check as a response to mass mailing campaigns. This drop off in participation in organizations characterized by local involvement, dense networks of social relationships and the requirement for mutual trust and reciprocity does not bode well for the future of America, according to Putnam. By discovering the factors responsible for motivating civic engagement, this research might help find ways to reverse the decline in social capital described by Putnam and improve our outlook for the future.

Many of the problems we face in the 21st century will require cooperation within and among various groups; however, without the social capital created by active group participation, we may not be able to muster the collective action that will be needed to solve these problems. One of the most pressing problems we are facing today is how to deal with the consequences of global climate change that are most likely caused in part by human activity (IPCC 2007). The consequences and sustainability of the increasingly popular American lifestyle based on high energy consumption, cheap food produced with intensive inputs, and massive amounts of waste is being called into question (e.g., Trainer 1997). Emerging sustainability experts evaluate lifestyles and systems of production according to what they call the triple bottom line: environmental, economic and social sustainability. Improvement in any one of these areas without consideration of the effects on the others will only exasperate our problems for the future (e.g., Ukaga, Maser, and Reichenbach 2010). There has been an

increasing call for social scientists to get more involved to help solve our looming sustainability crisis (e.g. Vlek and Steg 2007). The ability to mobilize collective action and renew the civic engagement that builds strong social capital will be critical as we move forward.

Review of Previous Literature

Inquiries regarding collective action cover a broad range of topics, including activities conducted by local citizen groups, spontaneous crowd behavior, and large social movements (vanZomeren and Iyer 2009). These actions have in common a desire to improve the status or power of a group rather than that of one or a few individuals (Tajfel & Turner 1979; Wright, Taylor, & Moghaddam 1990). The primary goal of collective action research has been to predict or understand “when and why individuals will (or will not) engage in collective action” (Wright 2009: 860). Numerous theories have proposed motivations for such engagement.

Conflict theories, such as those proposed by Marx and Engels (e.g., 2002), focus on the conditions of inequality in society as determinants of social action, but fail to explain why only a small percentage of actors affected by inequality participate in social action (Stouffer, Suchman, DeVinney, Start & Williams 1949). Relative Deprivation Theory (RDT) elaborates upon Marxian approaches in positing that actors must perceive an inequality to pertain to an entire group rather than just to individuals before they seek group action (Crosby

1979). This perspective thereby locates the motivation in the perception of individuals rather than the objective conditions of society. Social Identity Theory (SIT) explores the relationships between individual identities and collective group identities, how individuals use their social groups to enhance their self image and how they assign positive attributes to the social groups to which they belong to maintain their self esteem. Additionally, SIT highlights the importance of perceived group boundaries, such as when low status groups develop an in-group identity and label as the out-group those that maintain the inequality or have what the in-group wants (Tajfel and Turner 1979). SI theorists posit that action will be taken when the boundary between the two groups seems impermeable, preventing the low status individual from simply joining the high status group (Ellemers 1993), or when the boundary seems illegitimate (e.g., Mummendey et al. 1999) yet unstable (e.g., Wright et al. 1990), implying that collective action could indeed bring about change. New Social Movement Theory (NSM), originating in Europe, acknowledges that more recent collective action such as environmentalism and anti-corporatism do not seem primarily motivated by perceptions of deprivation and in-group/out-group identity boundaries. Actors in these groups instead come more from middle class backgrounds, create a politicized identity, and rather than trying to achieve membership in the out-group seek to bring others of like mind into their group (Wright 2009). Resource Mobilization Theory (RMT) turns the focus away from social psychological factors and claims that collective action will arise when

actors have access to resources such as the media and organizational structures (McCarthy and Zald 1977). NSM theories have assumed that the middle class is resource savvy, with educational and work-related experiences that they can bring to the collective action (e.g., Melucci 1980). NSM Theory and RMT see actors as rational decision makers who weigh costs and benefits of personal involvement and possible group success. The problem with this rational action viewpoint is that the individual costs in collective action or civic engagement can be high but the benefits often are made available to many. A rational person therefore might be inclined to avoid collective action and let someone else pay the cost, knowing that they will still gain the benefit. This inclination to let others take the risks for one's benefit is known as the free rider problem of Olson (1968).

New directions in collective action research go beyond identifying actors as intuitive economists motivated solely by inequality or the availability of resources, to a wider exploration of the role of emotion and ideology, suggesting that individuals may be motivated as "intuitive theologians who are trying to defend threatened moral convictions" (vanZomeren and Iyer 2009:654). This perspective might explain why high-status groups engage in action to benefit the disadvantaged. These directions explore new sources of identity, including referents by the individual to opinion-based and superordinate groups that claim that individuals are part of a larger identity. For example, the environmental movement highlights that all individuals and groups are part of the human race

and therefore are vulnerable to the effects of pollution and global warming (vanZomeren and Iyer 2009).

Overall, existing theories posit two general categories of motivating predictors for collective action: structural and psychological. From a structural perspective, social conditions of inequality motivate those who are marginalized or threatened to rise up to bring about change. Marx and Engels (2002), for example, claimed that the economic structure of capitalism would lead to increasing inequality between workers and owners, resulting in a class-based workers' revolution. Similarly, NSM theorists (see Beuchler 1995 for an overview) focus on the structure of society, but emphasize the individual's awareness of the ability to construct society and thereby question who will control that construction (Touraine 1977). NSM theory argues, for example, that increasing urbanization leads to a conflict between the need for commodification and the need to maintain cultural identity (Castell 1977), thereby leading to a division of modern society into a politico-economic realm governed by power and money versus a personal life world governed by normative consensus (Habermas 1975). The increasing pace of change in modern society further problematizes this identity maintenance (Melucci 1988). NSM theory predicts that new structural conditions will bring about conflict that leads to collective action. This group of theories does not necessarily predict, however, which actors will participate in these new social movements (Buechler 1995) because their macro-sociological approach does not specify how individuals move from

non-action to action. Similarly, micro-level psychological predictors, such as actors' perceptions of inequality, deprivation, identity, or perceptions regarding available resources, do not explain how an individual actor with these perceptions becomes engaged as part of a group.

Therefore, although there has been a long history of theorizing about when and why collective action will take place, little is known about the process by which an actor becomes motivated to action. Until we understand the “how” of collective action for an individual, it will be difficult to find ways to nurture that engagement when it is needed or mitigate it when it becomes inappropriately destructive.

An approach that might be helpful in addressing this theoretical gap looks at the role of social networks in predicting activist engagement. Stryker's notion of identity salience (e.g., Stryker 2000), for example, suggests that the relationship between participation and social network ties motivates individuals to become engaged to fulfill needs for social attachment to others. Similarly, McAdam and Paulsen (1993:647), propose that participation is based on the intersection of four limiting factors: “the occurrence of a specific recruiting attempt, the conceptualization of a tentative linkage between movement participation and identity, support for that linkage from persons who normally serve to sustain the identity in question, and the absence of strong opposition from others on whom other salient identities depend.” McAdam and Paulsen found that those who both signed up and staffed freedom schools designed to

help register southern black voters had attitudes that supported civil rights, but also were embedded in other organizations that support this identity and not hindered by family or friends who supported other identities besides participants' pro-civil rights identity.

In a similar line of inquiry, some collective action theorists propose that Pierre Bourdieu's concept of habitus—the social information passed from one generation to the next, allowing the reproduction of the structure of society—can explain a growing tendency towards activism and civic engagement (Crossley 2003). Bourdieu claims that changes in society come at times of crisis, when the knowledge embodied in the habitus no longer meets the needs arising in a field, leading to a questioning and possible change of the accepted way of performing social life. Crossly (2003) goes further to suggest that a “radical habitus” makes reflection and questioning of the status quo a normal component of social conduct, such that significant social change can occur at times other than in crisis. In this manner, social networks are shown important in reproducing the radical habitus. Note, for example, that middle class actors seem to continuously question their own practice and the practice of society either through previous participation in activism or by socialization within their family or schools. This approach brings together the structural factors of the field, including the objective conditions of society and the availability of resources in the form of various capitals, and the psychological factors of perception, habitus, and social learning.

Crossley acknowledges, however, that the habitus perspective fails to address “how neophytes are induced into protest, and the fact that some protests rely heavily on a neophyte base” (2003:53). This question seems relevant not only to the collective action arena of protest, but also to other areas of activism, including the general area of civic engagement (e.g., Putnam 2000).

In summary, although effective theoretical approaches have been developed to address the macro-sociological issues of collective action, much remains to be learned about the process by which an individual becomes engaged in social activism, what one respondent in this study referred to as the attitude-practice gap. Structural, psychological, cultural and network predictors state that if certain conditions are present, collective action is likely to occur, but these predictors do not tell us how specific individuals become engaged in action.

Diffusion of Innovations Theory

Diffusion of Innovations (DoI) theory (Rogers 2003) has been used to explain the processes by which individuals or organizations change their behavior. For individuals, such as those involved with the Prairie Plains University (PPU) greening effort, beginning to engage in social activism with a group about the issue of sustainability can be viewed as a behavior change. Additionally, diffusion studies have been used across a wide range of disciplines, including agriculture and rural sociology, education, medicine and

health, modern technology such as the internet , and in many different cultures (Rogers 2003). These two points make DoI theory ideally suited to help address the gaps left by other collective action research related to the engagement process for individuals, and to shed light on issues that cut across disciplinary boundaries, such as collective action and our current sustainability problems, which are also global in scope.

Academically located in the field of communication studies during his later years, Everett Rogers spent his academic career developing a generalized model of diffusion of innovations that has been employed in multi-disciplinary research studies from the 1960's until the current day. While growing up in a rural Iowa community, Rogers observed and questioned why some farmers lagged behind in adopting new agricultural innovations. As a graduate student at Iowa State University, he became engaged in diffusion research related to the adoption of agricultural innovations. Iowa State was the site of Bryce Ryan and Neil C. Gross' landmark study on the diffusion of hybrid seed corn (Ryan and Gross 1943). While looking at diffusion studies in other unrelated areas, Rogers became convinced that the diffusion of innovations was a “general process, not bound by type of innovation studied, who the adopters were or by place or culture....that it was a kind of universal process of social change” (Rogers 2003: xvi). Rogers attributes the theoretical roots for his model to Gabriel Tarde's *Laws of Imitation*, Georg Simmel's work on communication networks and

diffusionist anthropologists whose work followed Tarde and Simmel, as well as the work of Ryan and Gross (Rogers 2003).

Rogers' model lays out four key elements to consider when trying to understand social change brought about by an innovation: *the innovation*, which may include an idea, practice, technology or combination of these; the *communication channels* through which the innovation is diffused; the *social setting* in which the change takes place; and the idea that diffusion takes place over *time* and may have different motivations depending on when actors are involved (Rogers 2003). This conceptualization of diffusion includes all the predictive factors suggested by theories of collective action discussed earlier. Structural predictors of conflict theories, RDT, RMT, and NSM theories are taken into account by examining the social context of the new idea. Context also illuminates the role of culture and Bourdieu's habitus, including the notion of the field and available capitals. Looking at communication channels allows an examination of psychological factors such as the effects of previous communication on perceptions, the role of socialization, and the role of the social networks discussed by McAdam. Perhaps more importantly though, DoI theory can help us understand how individuals become involved in collective action by acknowledging that the involvement is a process that happens over the fourth key element, *time*. This emphasis on process over time can help get at the "how" of collective action involvement for the individual.

Diffusion theory states that actors go through an *innovation-decision process* of deciding whether to adopt or reject an innovation. At first they seek out knowledge about the innovation. At some point they will evaluate what they have learned and become persuaded either positively or negatively about the potential of the innovation to solve a problem. Then they will make a decision to adopt or reject the innovation and proceed to implement that decision. Finally, actors may confirm their decision or reverse it at a later time. The stages of the innovation-decision process are often labeled as: Knowledge, Persuasion, Decision, Implementation and Confirmation (Rogers 2003).

Another advantage of using DoI to study collective action and civic engagement is that it acknowledges adopters or actors are not all the same. Different actors become involved at different times and hence may be motivated differentially. Empirical studies have shown that cumulative adoption rates for an innovation tend to follow an S-shaped curve with small numbers of actors adopting in the beginning, followed by increasing numbers which reach a critical mass and then a small number of late adopters (Rogers 2003). Rogers identifies five categories or ideal types of individuals according to when they make the decision to adopt an innovation: innovators, early adopters, early majority, late majority and laggards. These ideal types have been shown to have differing characteristics. The founders of the PPU greening effort who are the focus of this study can be viewed as innovators. Others respondents that became involved in the later years of the group might be classified as early

adopters or early majority. Knowing what characteristics are associated with the different categories might help shed light on motivations.

The five adopter categories have been derived on the basis of innovativeness, “the degree to which an individual or unit of adoption is relatively earlier in adopting new ideas than other members of a social system” (Rogers 2003:280) . When plotting the numbers of actors who adopt an innovation at a given time from first adoption, a normal curve results. The five ideal types with their own unique characteristics are abstractions from empirical data that have been separated by standard deviations from the mean time to adopt. Under this abstraction, *innovators* comprise the first 2.5 % to adopt and tend to be venturesome, willing and financially able to take risks, more inclined to interact with a wide range of people and not especially respected by other members of their local system. The next 13.5% are labeled *early adopters*. They are more integrated into their local system and often serve as opinion leaders for others. They have earned this respect by being more deliberate and cautious about adopting new ideas, such that they have a better reputation for being successful than innovators. The *early majority* ideal type fall one standard deviation before the mean and are willing followers of opinion leaders in their group. On the other side of the mean are the *late majority*. These actors wait to adopt an innovation until there is sufficient peer pressure or economic pressure to adopt. *Laggards* are defined as the last 16% to adopt. While innovators and early adopters have been shown to have different roles and characteristics, earlier and later laggards

are relatively the same and do not justify two separate categories. Laggards are the most isolated from others outside their system and can even be isolates in their own system. They tend to resist change and value the way things have been done in the past. Often a precarious economic situation causes them to be very cautious in adopting new ideas or technology (Rogers 2003).

From over thirty years of studying the diffusion of innovations and the specific topic of innovativeness, Rogers has come up with the following generalizations about innovativeness (Rogers 2003). It tends to be positively correlated with:

- years of formal education
- literacy
- social status
- upward social mobility
- larger-sized units
- greater empathy
- less dogmatism
- greater ability to deal with abstractions
- greater intelligence
- more favorable attitude towards change
- greater ability to cope with uncertainty and risk
- more favorable attitude towards science
- less fatalism and more self-efficacy
- higher aspirations for formal education
- higher status occupations
- more social participation
- more highly connected in interpersonal networks of their system
- being more cosmopolite
- more contact with change agents
- greater exposure to mass media channels
- more active information seeking
- greater knowledge of innovations
- higher degree of opinion leadership when system favors change

Additionally, DoI theory might help make sense of the diverse types of collective action that social scientists study by viewing protests, boycotts, social movement organization and civic engagement as different innovations.

Innovations provide possible solutions to problems, according to Rogers. An actor's particular problem may determine what type of action he will be inclined to try. Salient characteristics of an innovation have been identified as: the innovation's relative advantage, its compatibility, its complexity, its triability, and

its observability (Rogers 2003). Using an example of a cell phone, adoption rates will be affected by how compatible the cell phone is with a potential adopter's lifestyle, how complex it is for the user to get access to the device and supporting infrastructure, the degree to which an adopter could try out the cell phone without first having to make a large financial commitment and by how readily he is able to observe the success or failure with which others around him have adopted the innovation.

Because DoI sheds light on how individuals change their behavior in many different contexts and emphasizes the characteristics of individual adopters and innovations, as well as highlighting diffusion as a process that takes place over time, one would expect to find diffusion theory used in collective action research. This, however, does not seem generally the case. McAdam and Rucht (1993) raise this point in their initial examination of cross-national diffusion of movement ideas.

“The relevance of the diffusion literature to the study of movement emergence would seem to be obvious. At one level, social movements are nothing more than clusters of new cultural items- new cognitive frames, behavioral routines, organizational forms, tactical repertoires, and so on- subject to the same diffusion dynamics as in other fields. Yet the movement literature has been distinguished by the virtual absence of any explicit application of diffusion theory.” (1993:60).

Although McAdam and Rucht focus on diffusion between movements rather than between individuals, they attempt to remedy the above lack by mentioning the relevance of diffusion theory for both intra- and inter-movement diffusion and suggest that DoI theory might be able to more adequately address

theoretical gaps left by RMT and NSM theories of collective action. In examining the possible connections between the American and German New Left movements of the 1960's, McAdam and Rucht uncover, through interviews and a review of archival documents, that personal connections between American and German leaders of the groups existed. Bringing in Strang and Meyer's (1993) work on cross-national diffusion of policy, they begin with the notion of institutional equivalency and attribution of similarity and the relative importance of relational or non-relational links in accomplishing this. Strang and Meyer show that the construction of similarity can take place without direct ties between transmitters and adopters. McAdam and Rucht argue that for social movements, however, identity is more complicated and is not made up of a single institutional identity that can be separated from the identities of the individuals forming the new group. They conclude that relational links such as personal contact and non-relational links such as mass media operate in a complementary manner, with personal links perhaps coming first, as they did when German students were exposed to the American New Left while visiting or studying in the U.S., but not disappearing as adopters seek out more information via the media (McAdam and Rucht 1993). Directly interviewing Germans who were leaders of the New Left there brought to light the diffusion between individuals across national borders, but this was not explored further. There was no focus on diffusion from individual to individual within each country's movement, characteristics of the

innovation that are mentioned by Rogers that either encourage or hinder adoption, or sources of knowledge and persuasion outside of the movements.

McAdam and Rucht's methodology of interviewing seemed key in uncovering the diffusion that was taking place between actors on two sides of the ocean. Searle-Chatterjee (1999) also found in-depth interviews valuable in shedding light on why actors become involved in New Social Movements. Investigating the view that New Social Movements are populated by middle class workers from the white collar sector and that these actors participate because of cultural factors such as education, politicized job choice, and networks of like minded people (e.g., Melucci 1980), Searle-Chatterjee conducted in-depth biographical interviews of environmental and feminist activists and found that the origins of their activism came earlier in life.

“Familial socialization was important for both groups studied and particularly for the environmentalists. It was the intersection of familial socialization with personal experience, or learning, of environmental degradation which led to action. For the feminists, it was contradictions in their socialization and as well as their material conditions of existence, which led to their activism” (Searle-Chatterjee 1999:277).

A 1967 study of young radicals (Keniston 1968) also used biographical interview methodology to understand the origins of the engagement of a small group of leaders in the National Office of Vietnam Summer, a group tasked with organizing new recruits to oppose America's growing involvement in Vietnam. Like Searle-Chatterjee, Keniston uncovered roots for activism in the earlier experiences of life, but also emphasized that the propensity to radical activism is

more complex than either of the popular notions of his time: the radical-rebel hypothesis which claimed that youth radicalism of the 60's was a kind of rebellion against male, paternal and societal authority; and the red-diaper-baby hypothesis which credited radical or left-wing families with influencing these young radicals (Keniston 1968). Although interviewees talked about the liberal leanings and involvement of parents, later experiences were also critical to their radicalization. Demographically, Keniston noted that the leaders of Vietnam Summer that he interviewed tended to “come from advantaged sectors of American society, to have upper-middle-class , politically liberal and well educated parents, and to attend prestigious colleges and universities.” (Keniston 1968:15) These results were in agreement with other studies of radicals using different methods and in different contexts (Keniston 1968) and also are not unlike the characteristics that Rogers describes for innovativeness. Studies of radicals using more statistical methods (see Peterson 1968 for an overview) reported psychological characteristics also found by Keniston's qualitative research: “a questioning, independent spirit, freedom to express underlying feelings and impulses, orientation towards principle, outstanding academic performance and so on” (Keniston 1968:15).

In conclusion, to address the research problem of declining civic engagement highlighted by Putnam (2000) and my specific research question of what has motivated participants of the PPU greening and sustainability effort to engage in collective action to improve the sustainability of their university, the

literature on collective action points to a continuing, critically needed role for social science researchers. Our looming societal problems of climate change, the sustainability of our current western lifestyle and decline in civic engagement that could produce socially transforming collective action to change the outlook for the future is, in part, dependent on addressing gaps left by older theories of collective action. As an interdisciplinary social sciences graduate student with a focus on sociology, psychology and anthropology, I believe the literature on Diffusion of Innovations theory and qualitative biographical interview methodology point a possible way to address gaps left by other theories and help synthesize approaches from several different disciplines. Because DoI theory addresses macro-sociological factors in the social context, including compatibility of the innovation with that context and possible changes in the context as diffusion occurs, as well as the micro-psychological factors of individual actors' problem identification, previous knowledge and social networks, the theory may help bridge the macro-micro theoretical divide by at least examining both levels. It is not expected that DoI theory will prove to be the perfect theory for explaining motivations for collective action, but employing the theory to set up a deductive study responds to McAdam and Rucht's call for a search for "diffusion dynamics" (1993:60) in the social movement field.

Chapter 2: Methods

Selection of Study Group

To maintain the anonymity of the respondents, I have assigned pseudonyms for the city and university where the study takes place, the name of the group studied, the names of the surrounding communities mentioned by the respondents, and the names of the respondents themselves. I will refer to the university as Prairie Plains University (PPU) and the group studied as the Sustainability and Greening (SAG) council. PPU is a large Mid-western university in a city I will call Prairie City.

Approximately seven years ago I became aware of a greening effort beginning at PPU. At the time, I was involved with my local Green Party and met the founders of the precursor to the official SAG council through a networking opportunity. I later worked for about a year with a woman who was involved with the endeavor to form the SAG officially and I then considered studying the group for my masters research. At that time I attended one of their meetings and discussed a possible research study. Everyone involved at that time agreed informally to participate. After that, I took a break from graduate school to pursue other work. In 2010, I contacted the group again and discovered they had been formally recognized by the PPU administration and gone through the process of creating a mission statement, by-laws and had aided in the hiring of a full time sustainability director for the university. Because the group self organized and

engaged and was attempting to bring about change at a large social institution, I felt they would be an ideal case for studying collective action and its role in social transformation. My interest is in the role of individuals in social transformation and so it seemed useful to study these individuals to understand what motivated them to join the group. It is important to note that this research study is focused on individuals only and the diffusion of activism among individuals. I did not study the role, efficacy or particular activities of the SAG group itself.

History of the SAG Council

Around 2002-2003, several professors on the PPU campus were getting together to discuss environmental and green issues. There was already a long standing effort on campus to do research and teaching in sustainable agriculture. The College of Liberal Arts and Sciences wanted to explore what they could do to promote interdisciplinary discussions about liberal arts and environmentalism, and so these professors collaborated to bring in relevant speakers for some symposiums and later organized an open workshop led by anthropology professor Brenda Payne from Shadeland University. Dr. Payne had started a greening initiative at Shadeland called the Piedmont Project. At the PPU workshop, she facilitated a discussion on what could be done to start a similar program at PPU. After the workshop, a small group of faculty and staff continued to meet and discuss how they could bring about changes at the university. At this time, the group was grassroots, informal and not officially recognized by the

administration. It soon became apparent that to take much further action, the group would need funding, which would require some kind of official status. Everyone who attended the meetings was also working full time at the university. They felt they did not have enough time to do all that was needed and realized there was a need for a paid coordinator position of some kind.

When they approached the administration about getting support, there was some resistance because of the term “greening” and its association with the Green political party. The administration also did not know how to recognize a group made up of faculty, staff and students. University committees are usually made up of only one group. The founders of the SAG were finally told they could form as a council and that they should use the term sustainability in their name. In January 2006, the group became officially recognized after drawing up a mission statement, by-laws and requirements for membership. They continued to submit proposals and job descriptions for a paid sustainability coordinator, but it wasn't until 2008 that their proposals were no longer sent back for changes. At this time, the PPU president came out with his own green initiative, which included hiring a director of sustainability that would be administratively located in the office of the president. Currently, the SAG council continues its work and interfaces in various ways with the president's initiative and the director of sustainability.

The structure of the group now has two levels. Anyone who receives information from the SAG is considered as being on the council. The council

then officially has a steering committee of ten members chosen from designated colleges and departments. These members can be faculty, staff or students and serve two year terms. When there is an opening on the steering committee, a university wide e-mail goes out asking those who are interested in serving on the steering committee to submit a written application. New members are chosen by the current steering committee members if there are more applications than openings. For the remainder of this study, I will use the term SAG or SAG council to refer to those on the steering committee, as these are the individuals who are the focus of this study.

The Interviews

I interviewed 18 individuals who have participated at some time on or with the SAG council steering committee. Initially, I contacted seven of the eight original members who came together before the group received official recognition. The eighth member has left PPU and I did not try to contact her. One of the two co-founders has also left PPU, but I traveled to her new university for an interview because I believed she was a key respondent. After interviewing these seven, I interviewed three students who were involved in the early days of the group, an individual who was the initial SAG contact in the PPU administration and the newly hired sustainability director. Finally, I interviewed five individuals who are currently on the SAG steering committee as well as a faculty member who works in the PPU president's office and has been tasked

with working with the SAG council since the beginning of the president's green initiative.

I developed an open-ended interview guide to gather qualitative data on the five stages of the innovation-decision process: Knowledge, Persuasion, Decision, Implementation and Confirmation (see Interview Guide in Appendix A). The Interview Guide, an Informed Consent Document, and a detailed plan for the study were submitted to and approved by my Institutional Review Board. For each of the three groups of respondents described, I sent out an introductory e-mail or letter and asked if the respondents would be willing to participate. Every respondent contacted was willing to be interviewed. I then arranged an interview date and sent a copy of the Informed Consent Document to be reviewed before the interview took place. All interviews were conducted during the summer of 2010. Each interview lasted approximately an hour, took place at the respondent's office or a public space (the one out of state respondent was interviewed at her home) and were recorded on digital recorder.

At the beginning of each interview I went over the Informed Consent Document, had it signed, and gave a short introduction about my research and the Diffusion of Innovations approach. I first asked each respondent to tell me the story of how they became involved with the SAG council. I then followed up with specific questions, but remained open to letting the respondent lead the interview if some interesting topic came up. As other topics came up, I pursued them with follow-up questions that occurred to me at the time. Frequently,

information about the innovation-decision stages became interspersed among the answers to several questions. The overall goal of the interviews was to gather information related to the innovation-decision process, but I also wanted to be open to other themes that might emerge. I relied solely on the digital recorder and did not take notes during the interviews, choosing instead to focus on the interaction with the respondent. The interviewees all appeared open and relaxed and most of the interviews went over the planned one hour time period.

Data Analysis

Post-interview, I listened to each digital recording several times and made notes about the innovation-decision stages, which became the main Nodes of my data. For several of the first interviews, I transcribed the complete interview. In all the transcribing, I did not attempt to capture the verbal hesitations, repetitions and fluency disruptions because this study does not focus on discourse or communication style. For the remaining 12 interviews, I used my notes about the interviews to identify important segments and statements to transcribe. Whereas a completely transcribed interview might be 22 pages long, the transcribed notes might wind up being only 12-15 pages long. I did all the transcribing myself, and used computer software to slow down or speed up the interview as needed.

As I completed an interview and its transcription, I began the qualitative coding process at the same time I was conducting other interviews. The first

step in the data analysis was to color highlight phrases, sentences and paragraphs of transcript that seemed to deal with each main Node: Knowledge, Persuasion, Decision, Implementation and Confirmation. In this way, my study uses a deductive approach by allowing Diffusion of Innovations theory to pre-set the main themes/nodes rather than using the coding process to build up emergent themes. For each respondent, this data was gathered and pulled out of the original transcribed document and put in a new document for each respondent titled: DoI Grouped Codes. After the first group of interviews, I began to develop Child Nodes for the Knowledge, Persuasion and Implementation Nodes. Statements in the Decision and Confirmation Nodes were fewer and less complex and did not seem to need further breakdown. During this coding process, I made several attempts to employ the Nvivo coding software, but found that it did not save me time and did not give a visual output of the data that seemed as useful as what I was developing on my own. Using the DoI Grouped codes for each respondent, I coded and labeled the data with Child and Tree Nodes. Here is an example for the Knowledge Node (See Appendix B for all main Nodes, Child Nodes and Tree Nodes):

Main Node:	Knowledge
One Child Node of Knowledge:	Childhood
One Tree Node of Knowledge-Childhood:	Childhood Family and Culture

I then grouped all these nodes into a document for each respondent titled: Case Reference. It proved useful to print and assemble all these documents (the transcribed interview or notes with main Nodes color highlighted by Node,

the DoI Grouped Codes, and the Case Reference) into a case file for each respondent. This allowed me to easily trace back coded statements to the original location and context in the interview.

The final steps in my analysis included going back over all the assembled nodes in each Case Reference to identify word or phrase codes for each node. Statements were originally coded as Knowledge, Persuasion, Decision, Implementation or Confirmation based on the fact that they were answers to specific questions targeted at that Node. However, there was often information in some other part of the interview or some diversion from the Interview Guide that contained relevant statements for a particular Node and I included them in the initial coding process. I wanted to make sure that I was justified in placing these statements in their particular Nodes. Requiring that a word or phrase code be found in each statement that had not been the answer to an Interview Guide question for that Node, I then found it necessary to do some editing of my coding.

Chapter 3: Results

Introduction

Diffusion of Innovations (DoI) theory defines an innovation as, “an idea, practice or object that is perceived as new by an individual or other unit of adoption” (Rogers 2003:12). Actors are presumed to advance through stages of the innovation-decision process, which include 1) accessing knowledge, 2) persuasion as influenced by characteristics of the innovation, the opinions of referent others, and endorsements by opinion leaders, 3) decision to adopt or reject the innovation, 4) implementation of the decision, and 5) confirmation of the decision to adopt. Not all actors go through all the stages, and even if they do, the stages may not happen in this order. For example, one might buy a new object or technology without knowing anything about it, thus making an adoption decision, and only later seeking out knowledge about how to use it and whether or not others find it advantageous. In most cases, however, people seek out or access knowledge and form an opinion before deciding to adopt.

In reporting the results of the 18 in-depth interviews, it is important to note that it is not always easy to say when a respondent's statements qualify precisely as Knowledge, Persuasion, Decision, Implementation, or Confirmation. For example, some knowledge can be seen as persuasive, or sometimes a friend imparts knowledge and persuasion at the same time. I do not claim that the coding in this study has perfectly assigned respondent statements into the main

nodes; but, the coding does give a picture of a process over time and what has been important to determining the “why” and “how” of collective action for these individuals.

When analyzing the data for what pertained to the Knowledge stage of the innovation-decision process, I looked for evidence of cognitive activities.

Cognitive learning theories suggest that when individuals encounter new ideas, they attempt to relate them to things they already know or have been taught.

Constructionist theories highlight the importance of making sense of knowledge through social interaction. I assumed that when considering an innovation,

potential adopters will engage in two types of cognitive behavior. They will access prior knowledge which they think is relevant to the innovation and they

will seek out new information from others, all which they will incorporate into cognitive mental maps that they believe are appropriate. In the interviews, I

probed for prior knowledge related to sustainability and collective action as well

as behavior that indicated respondents were seeking out knowledge through

classes, lectures, conversations, observations, the media and personal reflection.

For the Persuasion stage, I looked for activity in the affective domain, including

evaluation, emotions, and recommendations or advice from others. To be

considered a statement about the Decision stage, there had to be evidence of

some action taken, most usually, becoming involved with the SAG group in some way. This was usually followed fairly quickly by Implementation which was

evidenced by attending meetings and working on SAG initiatives. When looking

for evidence of Confirmation, I searched for positive evaluation statements about what respondents had experienced in their participation with the SAG and indications that they intended to continue their participation on or support of the SAG council or some other related group.

Results show that around 2002-2003, Sylvia, a Prairie Plains University (PPU) professor (all names of people, places and organizations have been given pseudonyms) learned from a friend outside of PPU that a greening effort called the Piedmont Project had been started at Shadeland University. An anthropology professor at Shadeland perceived a need to address green issues at her university and stepped up to organize interested members of the university community to form a group. The Piedmont Project was definitely a combination of a new idea- greening, and a new practice- organizing others to share ideas and collaborate on ways to implement the greening idea at the university, hence, a true innovation according to the definition. At Shadeland, it became a type of civic engagement and collective action that was then considered for adoption by individuals at PPU.

Besides being perceived as new, an innovation provides a possible way for someone to solve a problem or fulfill a need. Identifying a problem or need and the ways that collective action might reduce uncertainty about it for an individual (Rogers 2003) helped analyze motivations. Many of the respondents mentioned the problem of how to find others on the campus with similar interests, either because they had leanings towards sustainability issues and did

not have others to talk and work with on it, or they wanted to find others to collaborate with on sustainability related research. Some also mentioned a need to stay relevant in their jobs. They saw that sustainability was an emerging issue and, as one respondent stated: “There is a real chance that if you do nothing, you are going to get left behind. You are going to become a dinosaur.” Another respondent saw the SAG group itself as a problem. He feared that the group might be a bunch of tree huggers that would make his job more difficult. Two of the respondents were looking for a career path in sustainability and had hopes that they might find a relevant job at PPU. The three students interviewed were more inclined to see the larger global problems of sustainability and were easily recruited because of their interests in these issues. Finally, the three administrators saw involvement as a way to deal with the ongoing problem of fulfilling their jobs. Not every respondent had the same need or problem, but seeing this collective action innovation as a way to address some need or problem was common to all and seemed to prove a good starting point for looking at motivations to begin the engagement.

The Innovation-decision Process

Knowledge

Based upon past knowledge and experiences, actors may actively limit or increase their exposure to certain innovations. Their past, including their attitudes and beliefs, may also affect whether or not they perceive the innovation

relevant to their own situation (Rogers 2003). Due to the possible gate-keeping role of knowledge then, I believed it was important to cast a large net when looking for statements about knowledge in the interviews. Some of the code words and phrases that alerted me to the possibility that respondents were talking about knowledge include:

sense, awareness, taught, a sign, how society was, read, someone talked about, presented a paper, lectures, learn, the word sustainability, I see, courses, discussions, done research, how people talk about it, at a time when, rational use, an understanding, thoughts, lessons, background, I grew up in, couldn't help but know, ideas emerged, looking at, thinking about, being a faculty member, cognitive dissonance

I also defined this collective action for sustainability innovation as having two possible knowledge precursors: Knowledge about sustainability and its component ideas of environmentalism, conservation, economics and social equity AND knowledge about civic engagement and activism.

Knowledge Gleaned at Various Stages of Life

During the analysis of knowledge statements by the respondents, I developed four Child Nodes based on the stage of life or time period that the knowledge was gleaned. Tree Nodes under each Child Node were used to indicate the source of the knowledge. Table 1 shows the names of the Child Nodes and Tree Nodes. (For more detail, see Appendix B) Altogether then, there were 24 Tree Nodes under the main node of Knowledge.

Table 1. Child and Tree Nodes for Knowledge

Child Node (stage or timing)	Tree Nodes (source)
Childhood	Family and Culture, Society, Other Cultures, Personal Experiences, Education, Mass Media
College	Education, Society, Other Cultures, SAG
Professional	Society, Opinion Leaders, Mass Media, Professional Meetings, Professional Experiences, Personal Experiences, Other Cultures, SAG Recruitment
Post-SAG	Opinion Leaders, Professional Experiences, Personal Experiences
Knowledge Gaps	Childhood, College, Professional

Overall, during childhood, respondents were exposed to knowledge about the frugal or careful use of natural and economic resources from their families, or from the non-American cultures they grew up in. Many of the respondents indicated that personal experiences of spending time outdoors in nature, either alone or with family, taught them about the environment. As I stated earlier, it is somewhat difficult to separate out knowledge and persuasion elements here, but these experiences stay in the back of the mind, ready to be recalled when one needs to make decisions. Andrea, who has become involved in the SAG more recently, described experiences that were typical:

“Actually my grandmother, who died when I was thirteen, would take us to lakes and we would spend time looking at nuts and different kinds of trees....so I think there is some of that in there.”

Other respondents described experiences of gardening or being on the farm or camping. When Andrea was struggling with her dissatisfaction as a practicing architect, she joined a women's environmental book club. Here is the explanation of the feelings that persuaded her based on the knowledge she had through childhood experience:

“When I was in Chicago I was in my 30's. I was trying to figure out, here I am working in an architect's firm, I wasn't terribly happy. What made me happy as a child? Being outdoors, being in nature...those were memories that I connected with that were really strong, so I tried to follow that path.”

Several SAG members observed that there were messages from society during their childhood about looming sustainability problems, including the 1970's oil embargo, the first Earth Day and cycles of energy crises. Some remembered mass media messages in the form of ads like Smokey Bear and preventing forest fires; Give a Hoot, Don't Pollute; and the emotionally charged ad picturing a Native American looking on at piles of trash as a tear rolled down his cheek. One respondent mentioned seeing recycling practiced on the TV show, *Blossom*. Other TV programs, such as *Wild Kingdom* for an older respondent and Jacques Cousteau documentaries for a younger respondent, provided knowledge about environmental topics.

Only one respondent, Parker, a college aged participant on the SAG, mentioned learning about recycling from her formal childhood education, however, when she tried to recycle at home, she met resistance from her parents. When asked specifically about school providing roots of sustainability

knowledge, most respondents replied something like Mike: “I got nothing.” Some talked about experiences in school organizations as roots of engagement knowledge, but I will cover that when discussing how-to knowledge in the section below.

When coding for knowledge gained in college, an interesting co-hort split showed up. Gary, a middle-aged architect, stated that during his architecture classes during the 70's, they talked about orienting buildings for energy efficiency and building a tighter envelope, but when he went back to school after working in industry for 6 years, that was gone. All the other respondents in his age cohort, except one (Shawn), claimed they were taught nothing in their college classes that pertained to sustainability issues. For the three students who participated on SAG while they were in college at PPU however, information about environmental, climate change and social equity issues was pervasive. These students also reported having numerous opportunities to learn about engagement through participating in and leading clubs, councils, initiatives or study groups. Two of the three students highlighted college travel classes as being key to their knowledge base for sustainability activism. Overseas travel during graduate school was also important for four mid-30's and early 40's aged respondents as they got to see how people in Europe or Asia had learned to live with limited resources.

For the 15 respondents who were not students during their participation on the SAG, professional exposure to relevant knowledge was mixed. Professional

meetings in the architecture industry proved an early source of information on sustainability initiatives and activism. Other respondents gained knowledge from traveling abroad as adults, much as students had during college travel classes. Other respondents reported knowledge gaps professionally, which will be covered in the later section on knowledge gaps.

After the initial workshop at PPU led by Shadeland professor Brenda Payne, the SAG group disseminated knowledge about their group in several ways. Posters had been put up about the workshop. Reena, who studied campus sustainability for her masters thesis, learned about the SAG group from this poster when she came to PPU looking for work. Co-founder Karen sent out recruitment and informative e-mails across campus and set up a list-serve. Co-founder Sylvia shared a lot of information about the group informally with her friends in Prairie City and colleagues in other departments. Sylvia, Reena and Mike also taught student seminars about sustainability topics and it was in these classes that all three students learned about the SAG group. Because all the respondents had some kind of prior knowledge base though, either from their childhood family and culture or through college classes, the recruiting knowledge piece by the SAG might have been what Rogers calls a “a cue to action” rather than key knowledge. This cue resonated with things they already knew.

The Post-SAG Child Node emerged to cover knowledge gained by respondents after they started to participate on the SAG. For one of the administrators, this was still what might be called ambient knowledge that came

unsought for from his work context. After the SAG grassroots formation and before it was officially recognized by PPU, Matt, the administrator contacted by the SAG group, was starting to hear about sustainability and what other universities were doing when he attended professional meetings. State government was also beginning to talk about and push initiatives. On a more active note, SAG members, especially co-founder Karen, began seeking out knowledge from many sources after the group coalesced. I will talk more about this and other Knowledge Tree Nodes below, but to summarize results for the Knowledge Child Nodes relating to stage of life or the “when” of the knowledge, the age cohort with its overall social context seemed to determine what respondents learned. This will be elaborated upon more in the section on cohort differences.

Awareness, How-to and Principles Knowledge

Rogers mentions three types of knowledge that are relevant for the diffusion of an innovation. An actor must have an awareness that an innovation exists, he must access knowledge about how the innovation works and he must have relevant underlying principles knowledge. An example of principles knowledge would be knowing about germ theory and how it relates to the innovation of boiling water to reduce disease (Roger 2003).

Many of the 18 respondents spoke extensively about two types of awareness knowledge that acted as a lens through which they viewed specific information about the SAG. A common knowledge theme among ten of the

respondents was what they had learned from their families about living frugally, not wasting things, not being excessive consumers and making due with what they had. As one of the co-founders, Karen, stated, “I just grew up being aware.” For Karen, this knowledge came from living abroad as the child of a military parent where choices were limited at the PX and people moved and left communal belongings for others to use. She and her siblings were raised by domestic help while growing up in Europe and Central America and learned from these people how to be careful with resources. Two respondents who were born and grew up in other countries stated that living carefully with resources was part of their culture. Other respondents mentioned the frugal culture of German or Scandinavian grandparents and/or parents or grandparents who came out of the Great Depression and passed on knowledge about how to make do and reuse household items and building materials. Over and over again I heard that sustainability, promoting and living sustainably, “just made sense”. When these respondents were made aware of the SAG group then, they were open to it's message and agenda because of their prior knowledge base.

To a lesser extent, respondents also mentioned being aware of family members who were engaged in civic organizations. These respondents saw their fathers serve on conservation boards, mothers supporting school activities or advocating for women's rights, were themselves members of 4-H or FFA, participated in science fairs and Youth in Government, or had a parent who ran for elected office, to give a few examples. They were aware that participating in

the community was something that adults did. Two of the student respondents seemed hyper-aware of the role of community, which is related to the social pillar of sustainability and a key knowledge piece for civic engagement. Gabe, through a college study course in India, talks about how he learned the language of civil society:

“we did this, it was called Free Tree University organized by an NGO... it was this really neat collection of artists and activists and farmers and even some governmental officials and they organized...these two six week seminars. We are in the field visiting activists and NGO representatives and stop and go to visit farmers to see what was going on in areas, mostly in south India, but yes, it was an active civil society there, so that's where the language comes from.”

Glenn traces his awareness knowledge this way:

“I grew up on a family farm....I didn't see it as much before hand, but when I look back now I understand some of the things ...that go into sustainability and resilience is community, having community that is sustainable, the community aspect. My family is very close. That is something that kind of ran as a thread through my life of having good family connections and good community connections helps build a sustainable community.”

The second type of knowledge, how-to knowledge, again took two forms in this study. Most of the respondents reported knowledge about how to reduce waste, how to be frugal, how to design for energy efficiency, or how to take care of the land, as being related to how to do sustainability, which they hoped the university would do more of. Experience in student organizations, professional societies, other university committees, political campaigns and work endeavors provided how-to knowledge for doing the collective action work of the SAG, including networking, laying groundwork, discussing ideas, and other activities considered part of the implementation of the SAG innovation.

Results have less to say about the third type of knowledge, principles knowledge. Andrea, an architecture professor, linked knowledge she gained in graduate school about how systems work with her emerging awareness of sustainability. What Gabe mentioned about how a civil society works could be considered principles knowledge. Nancy, who worked in corporate agriculture before coming to PPU for graduate school and employment, talked a lot about how change happens. She had experienced “little change committees” in corporate business, and at first she was skeptical about a “little” SAG change committee's ability to bring about change at a large institution. Reena, whose masters thesis was on campus sustainability initiatives, said that from her research, she knew that it would take bottom up AND top down efforts to bring about change. Shawn, one respondent who rejected the SAG for himself, studied the evolution of organizations like the EPA and OSHA in college and focused heavily on the role of policy, perhaps reflecting a different view of the principles of change and concluded that this principles knowledge did not support the grassroots SAG. If these indeed can be considered principles knowledge for collective action and civil engagement, they are less firm and scientific than knowledge such as germ theory and are perhaps less a part of factual knowledge and more tied up with persuasion.

Knowledge Gaps

As coding progressed for this study, I realized that people were talking about things that they or those around them did NOT know. To deal with this in

the analysis, I assigned these statements to a Knowledge Child Node called Knowledge Gaps. It has three Tree Nodes: Childhood Knowledge Gaps, College Knowledge Gaps and Professional Knowledge Gaps. An example of some code words or phrases indicating knowledge gaps were: learned nothing about, not helping people understand, not in the zeitgeist, gap, nothing centralized, disconnect, didn't talk about, don't know.

Two respondents mentioned specific childhood knowledge gaps. Co-founder Sylvia noted that even as a child she wondered why religion wasn't talking about these things of how we treat the environment. Another respondent noted that schools don't teach you "how messy human relations are". Instead they portray history as an orderly progression of dates, people and accomplishments. And again, during the childhood stage, almost all the respondents indicated they did not learn anything about sustainability at school.

Middle aged respondents noted that during college years in the 80's, information about sustainability or energy awareness was missing. The three younger respondents, although their college coursework did include topics related to sustainability and community, felt that a knowledge piece about greed was missing. "This idea of what is enough, I don't know how you teach it in a college," lamented one student. Another student felt that administrators don't know how to take the long term view anymore and that we need to better understand the social question of "why people like power". A middle-aged respondent also expressed dismay at a lack of "erudite" conversation at the

university:

“There is an interesting trade-off there for institutional stability and personal security and what happens when those things are leading us to a path that is ultimately not sustainable, meaning it is detracting from the stability of the environment or it is taking away from people's possibilities to have rewarding lives, to choose these kinds of options, I mean, what if the next generation doesn't have these options that I have. Was I correct? I think about these kinds of questions, about how these things come together and it seems like a university should be thinking about these things in a whole lot more erudite manner than I can look at them.....this is where ideas become actionable because..it is a nice little social space that we have carved out where theoretically these things happen or people find paths for these things to happen, not where you get trained to continue on with an uncritical analysis of how you live and what you live and what it means.”

The most numerous gaps mentioned by respondents were in professional knowledge. As the SAG group struggled to find a place in the university hierarchy, members of the founding group were shocked to discover that the university did not know how to accommodate a group that was made up of various constituents and was integrative across the university. The most mentioned gap was related to knowing how to communicate and find others who were interested in sustainability issues at PPU. Another person described a gap in disseminating knowledge. He observed that the university has “gutted” its extension service at a time when it needs to spread knowledge to the public about important issues such as soil tilth and carbon sequestration as well as technical limits to what some people are talking about. He also sees a gap in who the university disseminates knowledge to:

“We never really reorganized our university outreach system so that they actually maximized the people that they served versus the land that they served. If they maximize the people that they serve, they would start to organize their conversations towards an urban population, the consumers more so than the producers, but we are yet to move towards where we are having a significant

conversation with consumers of food stuffs.”

The three architects interviewed noted knowledge gaps in their industry. Design and construction contractors working for PPU were not readily up to speed on meeting LEED requirements. Private architectural firms were not giving their architects opportunities to try out sustainable design and practices. Not enough was known about the technical aspects of air flows with relation to spatial composition and energy efficiency. One also noted that in her field, sustainability has tended to “get a very technical connotation” and that “sometimes that work gets very narrow.” She sees a need to also bring the social aspect of sustainability into the architectural field.

In summary, casting a wide net for the Knowledge Node resulted in glimpses into relevant prior knowledge gained in childhood, during the college experience and throughout the professional experience. Respondents accessed knowledge related to awareness of sustainability, it's associated ideas, and civic engagement; knowledge about how to do sustainability and work with a group, and possibly principles knowledge related to how systems work and interact and change. They also identified knowledge gaps that I believe the SAG council might help address in the future. These respondents gained knowledge throughout the life course that helped them be open to information about the SAG council and willing to take a closer look to form a positive or negative opinion about it's ability to meet their individual problems or needs.

Persuasion

In the DoI model, Persuasion is the stage when a potential adopter forms a positive or negative attitude about the innovation. Like the Knowledge stage, Persuasion also takes place in the cognitive realm and additionally, in the affective realm (Rogers 2003). Rogers lays out two general sources of persuasion 1) characteristics of the innovation itself and 2) others. The Child Nodes for the Persuasion node were suggested by DoI theory and became: Compatibility, Relative Advantage, Complexity, Family, Friends, Near Peers, Opinion Leaders, and Media. Two additional Child Nodes emerged which I labeled Identity; and Interest, Feeling and Emotion. I did not break down the Child Nodes into Tree Nodes for Persuasion. Some examples of code words and phrases that indicated statements were related to persuasion were:

similarities, makes sense, drive, influence, big step, big support, saying this needs to be, recognition, we ought to, I was able, it was coming, got pulled in, a melting group, impressed, different attitude, I am, I wanted to be, interest, passion, love, how complex this was.

The results show that both characteristics of the innovation and others were important for the respondents, but endorsements by opinion leaders were key for determining ongoing, positive commitment with the SAG.

Seeing The Innovation As Compatible

Respondents saw participation on the SAG as being compatible with several aspects of their lives and context. As mentioned before, most evaluated the promotion of sustainability as congruent with some aspect of how they grew

up, either living carefully with resources, thinking about the environment or participating in community. Respondents also saw the proposed work of the SAG as compatible with what was happening around them in their social and cultural context. They saw it as similar to the work of the Matthews Center on the PPU campus, only on a wider disciplinary scale. They noted PPU's in-place effort to recycle white paper, past innovations such as the co-generation ability of the power plant, current research into biofuels, or Prairie City's excellent bus system. They believed that some sustainability efforts were already underway and it made sense to work to expand that. The SAG innovation was also viewed as being compatible with an emerging Renaissance of sorts that was occurring on campus and across the country. They saw a new cycle of energy awareness coming, businesses trying to become more efficient, the Clean Air and Clean Water Acts being reinvigorated, or a change in our cultural attitudes about consumption. Finally, those who adopted and stayed committed to the SAG evaluated being involved with the group very compatible with their current or desired job situation. Co-founder and faculty member Sylvia was trying to expand her research and teaching in the area of religion and the environment. She had also obtained tenure and felt this circumstance in her work allowed her more freedom to try to explore and organize the SAG effort. Don, who initially saw the SAG as a possible threat, went on to champion the work of the SAG and saw it as part of his job. One of the architects stated that, "we build buildings and buildings consume 40% of the total energy consumption in the U.S., so it

makes sense to build more efficient buildings”. Mike, who joined the group early in it's work and has returned to serve on the SAG steering committee again, saw participation as compatible with his requirement to serve on university committees and his research in business and ISO 14000. Two respondents expressed a desire to be PPU's sustainability director if and when they hired one. Lastly, it is interesting to note that Matt, the first administrator to work with the SAG group, saw the SAG initiative as being a continuation of a long standing tradition of PPU as “an institution with high concentrations in sustainability on agriculture and life sciences and...(it) fits into the academic enterprise, so I would say there are parts of PPU that have been around this for a long time.”

Additionally, when discussing waste and recycling, he notes that, “However this gets managed, we are interested, we have to pay for it”. Conversely, the one adult respondent who discontinued his participation on the SAG did not see the council as compatible with his job; although, he did view sustainability people advocating incremental gains as something he could get behind and support, but not by participating on the SAG council. In DoI theory, Rogers states that adopters can look at an innovation for its compatibility with values, past experiences and/or needs. The theory generalizes that “the compatibility of an innovation, as perceived by the members of a social system, is positively related to its rate of adoption” (Rogers 2003:266). The two co-founders of the SAG, the respondent returning for a second term and the three administrators, had the most positive statements about compatibility for the SAG innovation. The

students and the adult respondent who discontinued, had the fewest. This appears in line with the DOI generalization about compatibility's relation to adoption.

Seeing Advantages of the Innovation

Besides seeing the SAG collective action as compatible with their backgrounds, the changing cultural and social context, and their needs related to work, respondents noted specific advantages to the innovation that contributed to their positive attitude towards participation. Rogers speaks of 'relative' advantage, so the question arises, when respondents talk about advantages, what were they relative to? In the later interviews, I began to ask if respondents had considered any other group to engage with on campus rather than the SAG, but they universally replied "no". Other options might have been the Matthews Center, (and some respondents did attend lectures or workshops put on by the center), or the faculty senate or other university committees, but none of the faculty members felt that there was an option besides the SAG that could meet their needs. It might have been more difficult for staff to participate in these other options and the students were involved in many groups on campus and seemed disinclined to compare groups, at least it didn't come up in the interviews. None of the students had statements that fell under the relative advantage Child Node.

Advantages that respondents did mention included: having a central point of contact on campus to turn to for networking and research ideas related to sustainability, the possibility of synergy and partnerships, being able to do your

service commitment to the university in an area that interests you, or having others to help you keep your interest going in your sustainability related research. Staff mentioned being able to participate more fully in the university community, being able to have some influence on campus, or being better prepared to address the university budget cuts when they hit. A couple of others mentioned the work of the SAG making it possible for them to leave a positive legacy on campus. As their participation continued, some saw increasing advantages. Don, who initially wondered if the group would threaten his ability to do his job, later realized that being involved in this group had “all kinds of advantages”.

According to Don,

“It has taken me and allowed me to be engaged on the academic side of the university....I think that is making me better at my job because I am plugged in with the academic community. I am plugged in with students. I never had that audience before. Now I am a guest speaker at classes and invited to see what they have to say..”

Don says that he is doing more now than just taking care of the inbox at work. He also says he is more persuasive when trying to convince his kids to save energy and he has bought into his wife's greening activities.

After the SAG became a formal group on campus, respondents listed formal recognition as an advantage. They also stated that the way the group was set up as a council with it's own by-laws gave it some freedom that other university committees might not have.

Overall, the one respondent who worked with the group in the beginning, took a break because he was away from campus and has now expressed a

desire to come back on the steering committee, made the most statements about the relative advantage of the SAG group. This would suggest that perceiving advantages can be a strong source of persuasion and confirmation. Both the one adult and one student who discontinued SAG participation made no statements about the advantages of the SAG. The other respondents fell somewhere in between. Those who work with campus buildings or environmental compliance had the most advantage statements of those in between.

Seeing The Complexity of the Innovation

One attribute of an innovation that can discourage adoption, according to Rogers, is the complexity associated with it. Results reveal numerous perceptions of complexity related to collective action to improve sustainability. In this section I will note who was inclined to see the most complexity and how that relates to the adoption decision. Matt, the administrator who was first point of contact for the SAG, expressed the most about the complexity of working to improve the sustainability of the university. He was the oldest respondent and has been with the university for over thirty years. His position at PPU puts him in charge of the business and facilities aspects of the campus. He grew up in the Rachel Carson era and has seen cycles of environmental awareness, but has also been around to see the original rationale behind the way some things are done at the university. PPU has had its co-generation power plant for many years, and it was state-of-the-art at the time it was installed, according to Matt

He is aware that some student and environmental groups are suggesting that the coal powered co-generation plant be replaced, but he also sees how difficult it is to make the financial argument for doing so. He is aware that emotion and science are sometimes opposed to each other, that some things have gotten done because it “feels good” and not because it makes financial sense. Prairie City's resource recovery plant burns trash to produce electricity rather than sending it to a landfill. Matt claims this makes it hard to financially justify recycling, but he knows that students want recycling programs and believe that it is an important value to instill in students for the future. Matt sees other complexities in what students are asking for, stating that we could burn less coal if students were willing to live without things such as air conditioning, but he doesn't believe the majority of the students are willing to give up this comfort. Because students provide some of the financial support for the university, Matt is quite sensitive to their demands. In spite of all the complexity he sees, however, Matt has been supportive of the SAG group. It is possible that his numerous views of compatibility combined with the views of opinion leaders have inspired him to work through the complexity.

Shawn, the adult respondent who discontinued participation on the SAG, had the second highest number of statements about complexity. He sees and often lectures about the technical limitations of some currently popular sustainability initiatives. While some promote a back-to-the-land approach to sustainability, he sees urban systems as the most efficient in managing

resources. Shawn and Nancy both state that they grew up in poor rural communities and Nancy points out that,

“I bring a good understanding of the social trade-offs of living and rural communities...it's not the rosy little thing that people paint. It isn't. I mean you work hard, and that's OK. I don't mind that, but a few people do all the work, they carry all the burden, the people who do that are responsible for the people in the community who don't, because you have an ethic of taking care. I mean, so it's not your fault if somebody doesn't have power or they did this or a tree fell down or whatever they haven't planned for, it's just that your role as a good community member is to help take care, so you burn out and work good people really really hard and society doesn't reward them and I also grew up in a time when there was quite a bit of isolation.”

Additionally, Shawn semi-humorously states that “we are just big pigs” and that people will not reduce their consumption of energy unless a considerable carbon tax is levied. He also sees complexity in taking on the role of activist, noting that others on the PPU campus who have taken an activist role have been marginalized. During his college years, when studying how to deal with harmful externalities of business practices, he notes that there was a danger of being lumped together with “wackos” if you took a politically activist role. His conclusions about how to deal with firms hurting people when the law reacts instead of preempts :

“You know, you can go down a Libertarian route and try to argue there is actually an argument for group self defense, but then you find yourself aligned with these goofy militia fools who think they have a path into righteousness and good and that's not where you want to go....I didn't go there.”

Although Shawn had about half the number of statements on complexity as Matt, he did not have the view that SAG engagement was compatible with his job at PPU to balance out his views of complexity. Neither Matt nor Shawn

identified knowledge about sustainability or civic engagement from their childhoods, but there was a difference in their described family context. Matt grew up a few years earlier in a middle class suburb of Chicago, whereas Shawn describes his people as “dirt poor, everybody was poor, they died poor. I come from very austere origins, just dirt farming ranching scrapping public school teacher, there is just no money..”

Most of the other respondents made a few statements about the complexity of the innovation of taking collective action to improve sustainability, and the issue of complexity appears important, but as the case of Matt illustrates, perceptions of complexity can be overcome. As she tried to lead the SAG group to make changes at PPU, co-founder Karen became aware of how complex it was to introduce energy saving technology such as vending misers and motion detectors, but she was willing to spend her own time at home figuring out how to fund trials of the technology, she constantly sought out new knowledge about how other colleges were doing these things and she even expressed the notion that working on these complex projects was “fun”.

Observability and trialability are two other characteristics of an innovation considered in DoI theory. Respondents were able to conduct a trial of collective action for sustainability in the sense that coming to greening meetings in the beginning was without commitment. After formal recognition, participants on the SAG steering committee were asked to make a time commitment. It was not possible to try the SAG innovation by trying someone else's participation, similar

to trying out a free sample or a friend's new technology. Doing the SAG council was also not something that was obviously observable and neither trialability or observability were mentioned by respondents in the interviews, hence they were not included as Child Nodes under Persuasion.

Persuasion by Others

In addition to evaluating the characteristics of an innovation to make an adoption decision, actors can be persuaded by others, according to DoI theory. I asked respondents specifically about the influence of others related to the collective action for sustainability innovation. This resulted in five Child Nodes: Family, Friends, Near Peers, Opinion Leaders and Mass Media.

For most of those who committed to the SAG innovation, family members contributed to the respondents' knowledge related to sustainability and civic engagement. Some respondents also mentioned persuasion by family in the form of advice and support, often for activities that led to the development of an innovative spirit: overseas travel, being an independent thinker, valuing education and learning. During their SAG participation, several respondents also mentioned a spouse or significant other who was heavily involved in sustainability activities. Don, who was skeptical of SAG in the beginning, had a wife who was involved in the local foods movement and reuse and recycling as a way to save the planet and states that: "She is more of an influence, she greens me more than my childhood." One student's fiance is an organic vegetable farmer and talks to him about the dangers of chemicals in their foods. No one mentioned, however, that

a family member pushed or drew them specifically into participating on the SAG.

Where familial influence was missing, sometimes friendships provided a source of positive evaluation. Reena talked about childhood friends who influenced her about vegetarianism and the issue of rainforest destruction. As an adult, she had friends who supported her interest in campus sustainability and urged her to attend a lecture by Harvard's sustainability guru, Leith Sharp. Paula, a more recent adopter of the SAG, was involved in a network of childhood friends who did recycling, cleaned up the neighborhood and had a lemonade stand that was known to be "ecologically sound." Paula and some of her friends later became eco punks and even as an adult professional, Paula had a group of friends who were heavily involved in social justice issues and the Paul Wellstone campaign. She describes their influence:

"All those people were very invested in sustainability issues. They were doing recycling when it wasn't done.....I was sort of a work, a project for them. I was interested in that, but I thought they were going a little overboard...so by the end of it...I realized how much I had changed and how much these people had influenced me....they were doing real change."

There is one particular friendship network and a dyad that directly contributed to the development of the SAG council. When co-founder Sylvia first came to PPU, she met Nancy through an outdoor sporting group. After group activities, they often got together to talk about sustainability and community issues. Nancy worked for the Matthews Center and brought other people from the center into the group. Sylvia described how the group worked:

“We hung out together a lot, we'd be on our bikes, go from event to event or party to party, speakers would show up, we'd go somewhere and talk...that was a real melting pot...One thing that has been critical at PPU...is having social networks, having people who are interested in this, being able to discuss things. I think if it had been me just fighting on my own it would have been really hard. But they were all really good friends, not only Karen and Nancy, but we had this base support who wanted it to work, the people who are in different forms of sustainable Ag.”

When Sylvia and Karen decided to try forming a group after the Brenda Payne workshop, Sylvia tried to get Nancy to join them. At first Nancy was skeptical about a little grass roots group, but says she persuaded herself when she realized it might have a chance to have some effect at higher levels.

Sylvia also developed a close friendship with the other co-founder, Karen, who was the secretary in her department. Speaking of Karen's influence:

“It was so demoralizing, we'd work and work and we'd have a meeting and Matt would say we'd have to write another by-law. I think he thought it honestly should happen, but it was really....hard to hang on and Karen really kept us going on this stuff...she has a stick-to-it-ness. I think she really cares about it, I think she realizes that these are serious issues and she just kept going in a way that she could do that...without her we wouldn't have gotten nearly that far.”

Sylvia said she and Karen also just had fun together, forming a “chicks club” that would go out together. Not many of the other respondents described friendships as being important in the Persuasion stage. One adult man and only one of the students mentioned any influence from friends. Interestingly, Carmen, a recent adopter of the SAG, said that she had known Karen through the community for many years, but they had never talked about sustainability issues, even though they were both interested, until Carmen landed in a job at PPU that allowed her interest in sustainability to grow.

Near peers, who I loosely defined as those whom the respondents were currently working with at PPU, were also rarely mentioned in the interviews. Adult respondents were mostly looking for ways to connect about sustainability because they were not finding people in their departments who were interested. Student respondents were involved with other students related to sustainability, but they did not mention being influenced or recruited by their peers to join the SAG.

Endorsement by Opinion Leaders

For many innovations, endorsement by relevant opinion leaders has been key in pushing an innovation past the first innovators to early adopters. (Rogers, 2003). For the SAG council, the important endorsement came from the university administration, but there were other important opinion leadership activities leading up to this.

Three national associations served as opinion leaders for several respondents. Gary attended U.S. Green Building Council (USGBC) national meetings with his colleagues at PPU from the facilities department. Founded in 1998, the USGBC developed the Leadership in Energy & Environmental Design (LEED) certification program that promotes sustainable community and building development. Gary noted that at USGBC meetings, they were persuaded that the sustainability movement in building would start in institutions of higher learning. At national and regional meetings, Gary and his colleagues were exposed to what other institutions were already doing, including hiring

sustainability directors. About the time of the birth of the SAG group, the Association for the Advancement of Sustainability in Higher Education (AASHE) had its inaugural meeting. Don was still skeptical of the SAG group, but asked to attend the AASHE meeting. He states that Matt was also hearing about “this sustainability thing” and readily offered to pay for Don's attendance. Don, an engineer, was uncomfortable at this conference that was attended by foodies, people promoting Wicca and environmental sensitivity, as well as other engineers, but he left the conference convinced that sustainability was “a whole lot bigger” than he had realized and he no longer saw the SAG group as a threat. Administrator Matt noted that he was hearing about sustainability at his National Association of College and University Business Officers (NACUBO) meetings. Finally, after they formed the initial SAG group, co-founders Sylvia and Karen actively sought out information about what other universities were doing, looking to places like Harvard and the University of Illinois as leaders and examples. Shawn, on the other hand, made several statements about the negative influence of opinion leaders on sustainability efforts in general and at PPU specifically, which might have contributed to his discontinuance of the SAG council.

Finally, the influence of mass media for these respondents was minimal. Several mentioned reading books that were persuasive about looming sustainability problems, including *Collapse*, *Omnivore's Dilemma*, *Cradle to Cradle*, and *The End of Oil*. Matt mentioned getting information related to energy from National Public Radio. When pressed, respondents tried to think of

a magazine or mentioned pod casts, but they could not point to anything in the mass media that really influenced their attitude about participating on the SAG.

The initial greening group was made up of Sylvia, Karen, Nancy, Don, Gary, Reena and Mike. This was truly a self formed grassroots group, but they soon realized that to have much of an effect, they would need funding, which would require some kind of official status at the university. They actively sought out endorsement from university authority and opinion leadership. Matt was their contact in the administration, because he was in charge of facilities and business. At this time, Matt was becoming aware of “the sustainability thing”, but there was some concern that a greening group at PPU would be perceived as being too political. A lot of this was taking place around the time of the 2004 national presidential election. There was a long period extending to years of going back and forth between the greening group and the administration. Some respondents reported that they got discouraged during this time. Reena stated that while she chaired the group during this time period, people weren't coming to meetings. She began to question her own leadership abilities. Karen was able to get a meeting with Matt and other high level administrators, which seemed like a huge breakthrough., Don states,

“I was sort of amazed at that, at the risk of sounding condescending, because a secretary doesn't follow the money, if you want to talk about authority and holding a big stick, this is somebody who is really low in the fiefdom and she is able to get a meeting with the king and his court, how were you able to do that?”

Matt describes it from his point of view:

“We wanted to have some kind of advisory group and there were these pieces of people out there and as different people would talk about money to do this, that or the other thing or bring in speakers to promote things, I concluded it might be better if we could do a little better job of coordinating this and so administratively there is a senior leadership group which is kind of the president and the VPs and I said why don't we talk about putting together a council on sustainability. The president said a lot of this interest is around buildings and operating the campus, maybe an initially good place to work is through you instead of the Provost, so we kind of put this together and then it evolved.”

The SAG grassroots group became an official council in 2006 after a lot of work on by-laws and a mission statement. Then, in 2008, the president of PPU came out with his own sustainability initiative, decided to incorporate the SAG council's job description to hire a sustainability director and put together his own advisory council on energy and climate change. Part of the rationale for this, according to one respondent, might have been the increased focus on biofuels between 2006 and 2008. Reaction on the SAG council was mixed. Don expresses some of the distress:

“When it was important to him (PPU president), when his boss, the board of regents was saying what are you doing about this...(and) another of our state universities had announced that they were going to hire a sustainability director, it wasn't long after that all of a sudden, boom, we are getting one and he formed his own committee on sustainability and energy conservation. Truth be told, that was kind of a bag over the head and kick in the face to us, wait a second, we've been pushing for this and then there is a unilateral move without involving us, I could have easily sunk into a place where I felt like that was a threat.”

He goes on to show how thinking can evolve however,

“...then I realized that in something big, because this isn't a big school, it's a small city, you have all these factors and what you have to do is find when a mass is shifting this way. When you see a mass shifting and it's going in a direction that is positive for what you do, you ride that. Leith Sharp (from Harvard) describes it as if you took a great big ship, it has a rudder, the rudder on a large ship is so massive that it actually has rudders on it to turn it. So she says, when you get to a university you can't be the rudder, you have to be the rudder on the rudder. So that's kind of the role that we are in and some wonderful things have happened.”

Other Emerging Themes: Identity and Emotion

A possible theme of identity emerged during coding of the interviews and eventually became a Child Node under Persuasion. Some respondents spoke of who they were: I'm a tree-hugger, I'm Catholic, I am a doer, I am not an advocate, I don't see myself as an activist. They seemed to be saying that who they were was either compatible or not compatible with participation on the SAG. Co-founder Karen, when asked about the early use of the term "greening", said it had the advantage of being an action verb and matched her identity as a doer. One respondent was partly persuaded that the SAG could be right for him, a Catholic, when he heard a Catholic priest at the AASHE conference talk about the message of St. Francis of Assisi as being compatible with sustainability. All but two of the respondents made at least one statement about how they saw themselves and the way that it related to participation on the SAG. One student noted, "I have always been into learning new things, intensely curious". Carmen, a recent adopter of the SAG, also noted that she is a person who has always loved learning and can relate anything she learns back to conservation. Additionally, she stated that, "my job is my life" and that one reason for her SAG participation was "my own sense of myself as sort of a citizen of PPU, to be a better campus citizen." Identity was also negatively related to SAG participation. Several respondents stated that they did not see themselves as activists or advocates. Shawn, who left the SAG after one year, made the most statements

about his own identity and how it did not match SAG participation. “I am not an advocate,” he says, “I do not want to be confused.” He described himself as “viciously independent”, “a veteran”, “an essayist”, “a marathoner”. He stated that he could have been “a helper”, giving the SAG council analysis that would make them better advocates, but he stated he was “not a true believer”. Gabe commented on the identity of an environmentalist in his view:

“ people that did identify as environmentalists I was not really close to because I felt like more of a manager...an ecosystem manager...I never really felt like I was an environmentalist....I guess an environmentalist is someone who is not from a farm. I can tell you what they are not, probably don't have an intuitive understanding of time and nature and events with like natural processes....they are really concerned about resource use and recycling and they are a little elitist, they like to look down at other people who aren't driving a certain kind of car...They are worried about the things they can change but they kind of like the system the way it is set up but there are just some tweaks they think we can make. But I am looking at the system and thinking there are 24 million acres of just one crop in this state...this is a big problem. Let's not split hairs if the paper should be burned or if it should be sitting in a pile somewhere.”

As a student, Gabe attended some of the SAG meetings but was very busy in other organizations. After leaving PPU, he went on to work for an organization that supports sustainability but better matches his identity as an ecosystem manager. One respondent cites a negative identity connotation she got from her parents about being an activist. “They were very very opposed to wild eyed activists and fanatics.” Another student pointed out,

“No, I don't consider myself an activist. I consider an activist as someone who preaches and yells at people and stands up in front of people. I consider myself as just leading by example and just telling people about what I do.”

These statements could possibly have gone under the Compatibility Child Node, but since social movement scholars have focused heavily on Identity Theory and Social Identity Theory, it seemed useful to separate these results under a separate Child Node.

The second Child Node for Persuasion that emerged outside of DoI theory I labeled Interest, Feeling and Emotion. All but two respondents made statements that fell into this rather catch-all node. These statements all seemed part of what pulled respondents into participation on the SAG. Over and over again I heard people say they were just interested in these issues or that they wanted to be around other people with similar interests. Some reported positive emotion associated with being out in nature or a feeling of sympathy with animals and nature as being compatible with sustainability and care for the environment. During her graduate work on sustainable campuses, Renna states that she found “her passion” and was thrilled to find an effort at PPU on this topic. An interesting connection between emotion, food and sustainability emerged from the results. Many of the respondents reported that they came into sustainability through their interest in food. Co-founder Karen observes,

“realistically, I have always been interested in food and cooking and if I am going to say there was one place that I actually stepped forward and said I am going to make a conscious decision, it would be foods...certainly I don't like refined foods...I enjoy a kind of true flavor to things.”

Another interesting food story comes from Don and illustrates the power of food to evoke strong emotion. Before involvement with the SAG, Don's main focus

was on saving money. He tolerated his wife's purchase of a Community Supported Agriculture (CSA) share, but teased that he might be eating a "\$400 salad". He was inclined to mock the focus on food at the first national sustainability conference he attended, but since involvement on the SAG, he praises PPU's new food service director and her efforts to buy locally, calling her a campus hero. Don says he has always loved to eat, and gradually, as he became more involved in sustainability through the SAG and read more, his appreciation for quality was added to his desire to save money. One summer when the CSA flood of tomatoes came on, Don's wife made homemade tomato soup. Don didn't think it looked like tomato soup, but remembering his grandmother's admonition to never criticize his wife's cooking he gave it a try.

"So I shoveled it in and it was the most exquisite heavenly tomato soup I have ever had in my life. And what comes out of my mouth? For 40 years I have been duped into believing that the shit in the can is tomato soup...my motivation on the real food part of sustainability is, the shit in the can doesn't pass any more. Life is too short for me to suffer what's in that can, that's just filling the void, just making it so you aren't hungry any more. I ain't got time for that any more. I eat real food."

Becoming involved in sustainability and thinking about the future has also caused Don to look back into his genealogy and visit his roots in Europe with his family. Before the SAG, he had never been away from work for more than a week, "but that's not sustainable either", he concluded. He describes discovering that one of his ancestors was a baker and how he has started to bake his own bread, loving the feeling and aliveness of the dough. Co-founder Karen described her love and passion for the work of the SAG and pointed out that part of its success is

that people had fun, they found camaraderie and meaning in what they were doing. For Karen, it was also important to stay positive, to talk about what was right, not about what was wrong all the time.

Decision, Confirmation, Implementation and Adopter Categories

All 18 respondents reached a decision to join the SAG council, but two did not appear to confirm their decision and discontinued participation when there was clearly an opportunity to continue. Two of the student respondents ended their participation because of graduation; but, because both went on to take jobs related to promoting sustainability, I considered them to have confirmed. The end of their SAG participation was triggered by their circumstances, not a negative confirmation. I did not develop Child Nodes for the Decision or Confirmation main Nodes, but instead, looked at a few key statements by each respondent that indicated the beginning of their initial decision to do something with the SAG, and statements about a possible reevaluation and confirmation of their initial decision or, in two cases, a reversal of their decision (see Table 2).

Table 2. Respondents' Decision and Confirmation by Adopter Category

Respondent Age Cohort Adopter Category	Decision to Adopt Innovation	Example of Decision Statement from the Respondent	Important Source of Persuasion for Decision	Confirmation to Continue Adoption	Example of Confirmation Statement from the Respondent	Important Source of Persuasion for Confirmation
Karen 50-60 Innovation	yes	After seeing what others were doing, "we can make this work here at PPU"	Opinion leaders	yes	"I have been the life blood of this and I think I will continue to be that"	Identity
Sylvia 40-50 Innovator	yes	"Other schools at the time were doing this"	Opinion Leaders	yes	"I wouldn't have thought of myself that way (activist) but I guess I have become one"	Identity
Rachel 30-40 Innovator	yes	"became involved with the SAG through my position here"	Job	yes	"I am more of a change agent in awareness and perspective than activities"	Job related Identity
Reena 30-40 Innovator or Early Adopter	yes	"my passion...I wanted to try to work in that area"	Job	yes	"I couldn't devote as much time because my job (now) requires me to travel...there are still things I get to do."	Job
Don 40-50 Early Adopter	yes	"This university needs a conscience..(SAG) might be a place to do that"	Relative Advantage	yes	After the AASHE conference, "I no longer saw it as a threat"	Opinion Leaders
Gary 50-60 Early Adopter	yes	"I just kind of fell into it (after being contacted by the SAG), I wanted to be involved"	Referent Other	yes	"The more conferences we attended the more I saw we could do this"	Opinion Leaders
Nancy 50-60 Early Adopter	yes	"because of my ties with Sylvia...I went to that meeting"	Referent Other	yes	"skeptical...until I realized we might be able to make an impact ...on messages that go out from the president"	Opinion Leaders
Matt 60-70 Early Adopter	yes	"President said...maybe initially...work (SAG) through you"	Opinion Leader	yes	"we are under continuing external interest pressure"	Opinion Leaders
Mike 30-40 Early Adopter	Yes	"here (SAG) is a good opportunity for me to meet people who are interested in these (research) issues"	Job Need	yes	"I am going to be back on again starting this fall"	Relative Advantage

Table 2. (continued)

Respondent Age Cohort Adopter Category	Decision to Adopt Innovation	Example of Decision Statement from the Respondent	Important Source of Persuasion for Decision	Confirmation to Continue Adoption	Example of Confirmation Statement from the Respondent	Important Source of Persuasion for Confirmation
Gabe 20-30 Early Adopter	yes	Sylvia said I should do this.. and I said "sure sounds great"	Opinion Leader Professor	yes	"I didn't think we (SAG) had a clear enough mission or focus"	Negative Relative Advantage
Glen 20-30 Early Adopter	yes	"Reena sent it out through our seminar...I said sure, sounds interesting"	Opinion Leader Professor	yes	"in my position now....I want to create a more community focused system"	Job
Patricia 40-50 Early Majority	yes	"I was asked to be on the steering committee and I said yes, sure"	Referent Other	yes	"I'll see how much time I have next year...I have to get tenure"	Job
Paula 50-60 Early Majority	Yes	"my dean said this (SAG) is something you should do...so I contacted Karen"	Opinion Leader	yes	"I will probably try to renew...my interest is...how I can translate my day to day work practice using it."	Job
Andrea 30-40 Early Majority	yes	"a call came out asking for faculty representatives...so I sent in my information"	Referent Others	yes	"if I want to find someone else doing research inthat's my agenda (for SAG), a campus wide way of communicating"	Job related need
Carmen 50-60 Early Majority	yes	"I was aware (of SAG) and then Karen brought this specific recruitment opportunity"	Referent Other	yes	"connectivity...I would like to see it come across much more strongly"	Relative Advantage
Heather 50-60 Early Majority	yes	"PPU president asked me to work with SAG"	Opinion Leader	yes	"I will continue to work with the SAG council"	Job
Parker 20-30 Discontinued	yes	"I became aware in Reena's class and decided to apply"	Opinion Leader Professor	no	"I didn't feel like I was contributing"	Interest, Feeling Emotion
Shawn 50-60 Discontinued	Yes	"I was recommended to the SAG...because I had been doing some research"	Referent Other	no	"I didn't feel like I could contribute effectively...I am not an advocate"	Job related Identity

Fifteen Implementation Child Nodes emerged during analysis based on activities that respondents described taking part in during their SAG involvement. Respondents had to self report these activities in order for them to be counted. For example, others may have chaired the group, but if they did not mention this in the interview, I did not count it as an activity. Therefore, statements under the Implementation node are an indication of what each person saw as their participation. A few claimed they were mostly passive or just attended meetings. Others described networking, discussing ideas, organizing and even pushing for things or actively trying to influence the identity of the group. Co-founder Karen engaged in what I called Life Cycle Assurance activities. She recruited others and often expressed that the group would be stagnate without bringing in new blood. The co-founders and early members of the group reported the most numerous activities related to their implementation of the SAG council, but their participation was at a time when there was much to do involving organization and determination of the SAG status at PPU. Those that have recently joined the SAG have not had a lot of opportunity to engage in activities yet.

At the very end of the analysis process, I looked to see if the Decision and Confirmation results revealed any patterns. Grouping these results by gender, age group, or their position at PPU revealed only one strong commonality within a group. Those in the 30-40 year old range seemed mostly motivated by the possible advantages of SAG participation to their jobs. However, when I attempted to use DoI theory to place the respondents into adopter categories,

interesting similarities emerged within all the groupings and reflected characteristics that Rogers assigns to each adopter category.

Three or possibly four respondents could be considered Innovators. Co-founders Karen and Sylvia were definitely the first to adopt this innovation and they possessed characteristics that Rogers uses to describe innovators. Both women are cosmopolite, Karen having grown up abroad as a U.S. military child and Sylvia having done extensive research in India. They were reaching outside of their local networks for new ideas. They both found themselves in an academic department that was not inclined to take on sustainability issues, hence they were somewhat isolated in their own setting. They reached out to each other and to others outside of their department as well as opinion leaders at other universities who were already doing this. Sylvia had the resource of tenure which allowed her to take more risk by trying to teach classes related to sustainability and attempt to organize something brand new on campus. Sustainability director Rachel, who was one of the three administrators I interviewed, can also be considered an Innovator, even though she was not involved with the SAG in the early days because she was not at PPU yet. She also traveled extensively to see what other countries were doing on the environmental front and put together her own graduate program that allowed her to combine her business degree with wildlife biology. She worked for a number of years for the Department of Natural Resources but was eager to reach out and apply for this new position of sustainability director when a friend pointed it out to

her. Reena did her masters abroad and was the one who wrote her thesis on campus sustainability, before it was becoming a popular topic in the U.S. She felt alone in her passion about sustainability at PPU until she found the SAG group. Of the four, she was probably the least secure in her job situation at the time the SAG was forming, and after a few years, her participation became less, so this may have dampened her ability to be an Innovator. All four women, however, were influenced in their decision to participate on the SAG by opinion leaders outside of their current context and made use of their cosmopolite ties and the knowledge they had gained from them. When looking at their confirmation statements, Sylvia, Karen and Rachel seemed to have progressed to a place where they developed an activist or change agent identity which confirmed their decision to adopt.

Five of the adult respondents and two of the students could be considered Early Adopters. Don, Gary, Nancy, Mike, and administrator Matt, were all involved with the group rather early, before it received official recognition. Rogers (2003) describes Early Adopters as more integrated into their social system. Don and Gary had both been in their PPU staff positions for a number of years, Nancy was a veteran program manager, Mike was a professor who has recently gotten tenure and Matt has been at PPU for many years. Early Adopters are more cautious than Innovators and are “respected by their peers...the embodiment of successful, discreet use of new ideas” (Rogers 2003:283). Don was the respondent who was at first cautious about the SAG as a potential bunch

of tree huggers. Nancy was skeptical about the SAG council's ability to bring about true change. Mike and Gary both saw a high number of relative advantages to the SAG and exhibited thoughtful signs of calculation about how the SAG fit in with their jobs. Matt listed numerous examples of the complexity of improving sustainability at PPU, another sign of caution and weighing the relevant factors. All five of these respondents were asked by another to join the SAG council work. They were not out there on the edge working with those outside of the university or their departments to try to bring sustainability activism to PPU like the Innovators were. Also, none of the five had traveled abroad extensively. The two students who confirmed were a little harder to categorize. They were the first students on the council. They had traveled for classes, they were into new ideas, but this was not unusual for students at PPU. They were both asked to join the SAG by a professor or teacher, and they were heavily involved in other campus organizations, making them more imbedded like an Early Adopter. Rogers describes Early Adopters as sources of opinion leadership in their networks, and this was true for all these seven. Don, Gary, and Nancy all supervise others. Mike, as a professor, is looked up to by students, and Matt holds a position of authority as a high level administrator. Both students were leaders in other organizations they participated in. But I also found that they were heavily persuaded by other opinion leaders outside their networks in their confirmation. Don and Gary's confirmation was sealed when they heard in national conferences what others were doing. Matt identified

student demands and external pressure from groups like the Sierra Club as being persuasive for him as an administrator to keep working through this. Mike's confirmation is related to his job and what he hopes SAG will do for his research, but he raises the possibility for prestige in doing sustainability research, noting that "multiple people will make their careers on that (doing research with Walmart on their sustainability index)". Roger states that Early Adopters work to maintain the respect of their colleagues. Making sure that an adoption is endorsed by relevant opinion leaders may be one way to assure that respect is kept. This seemed less the case for the students, but I also did not question the students about how their peers viewed their SAG participation.

I classified five of the respondents as Early Majority. These respondents were also asked by someone to join or work with the SAG. Four of these are newer members on the SAG and one is an administrator who was asked by the PPU president to work with the group while launching the president's own initiative. Their initial decision was prompted by a combination of some kind of persuasion from another and prior knowledge and leanings towards sustainability. It's not clear that they deliberated longer than others, as Rogers says about the Early Majority, but their confirmation statements were all related in some way to how the SAG fits in with their jobs. Four of the five are professors, three of which still need to get tenure. Patricia states the dilemma:

"I have to get tenure so I might step down, I'll see. It's more about organizing my time because when I do something I want to do something, I don't want to just sit there in a meeting. I will use this term to do something, then I'll see how much time I have next year. I can come back when I have tenure."

In this way, they can be considered deliberate, which fits with the characteristics of the Early Majority. They are weighing the costs and benefits of participation. Since the president of PPU has endorsed this activism for sustainability, they see that it has clout and some staying power. The four who were not administrators talked about hearing of the SAG work “through the grapevine”, as Andrea puts it. More people are starting to talk about it and the Early Majority are taking the step of adopting. Rogers states that these individuals function as important links in the diffusion of a new innovation. They are more connected with their peers and can give a positive evaluation that feeds into the “grapevine” of communication. Perhaps the result of this is something that Karen described as the later members of the steering committee came on board:

“We solicited to everybody on the Sustain PPU list-serve and we said this is where we're at. Most recently we need two people and then one student, and so boom, within ten minutes I had two people and very good people, and within two days I had seven, so we were able to vet that out.”

The two respondents who discontinued their involvement with the SAG council might be considered candidates for the Late Majority category. Neither felt they could contribute to the SAG at the time of their involvement. One was a graduate student working on her PhD and so had obvious time constraints. Also, her area of research was not related to sustainability or activism. Shawn felt that it was not his role to be an advocate while being a public servant. He noted that others who had done so at PPU were marginalized, perhaps expressing the

“waiting until it is safe to adopt” characteristic of the Late Majority that Rogers identifies (Rogers 2003:284).

There did not appear to be any of the respondents who fell into or were candidates for the Laggard adopter category. Rogers describes Laggards as “near isolates in the social networks of their system. The point of reference for the Laggard is the past”. He also states that “a precarious economic position forces the individual to be extremely cautious in adopting innovations”. (Rogers 2003:284) For civic engagement and collective action to improve sustainability at PPU, students might be found in this category if they deem involvement to have a negative financial impact, taking time away from jobs or not having a sufficiently positive impact on a resume. Those in departments that are highly traditional or stuck in the past might also take a long time to embrace action.

Differences: Cohorts and Cultures

During analysis, two obvious differences became apparent in addition to adopter category differences. These differences showed up in the Knowledge Node of the data, rather than the Decision and Confirmation Nodes.

I was fortunate to gain access to roughly three age cohorts among the respondents. Older respondents fell into the 50-70 year old age group, early-middle aged were 30-50 years old and the three students were 20-30 years old. Older respondents cited knowledge roots about sustainability and civic engagement from how they were brought up with frugal or conservation minded

parents or some messages from society via books like Rachel Carson's *Silent Spring*, the 1970's oil embargo, cycles of energy crises or ad campaigns. They did not learn anything from their schooling and did not report a lot of knowledge that came from college courses. The middle cohort reported learning some economic conservatism from parents, some had college or graduate courses related to the environment or sustainability, but most did not describe societal messages about sustainability issues. As Sylvia states:

“It was not in the zeitgeist at the time. By the time I got to college, people were just exhausted, then you had the farm crisis going on, you had economic things going on. We were just coming out of the recession and then the 90's went crazy. I was in DC at the time and suddenly there was money all over the place. The whole nation was on a different track at that time. Everyone's mind was different, they weren't thinking about the sustainability stuff.”

The student respondents would have been growing up during the time Sylvia describes and they indicated less knowledge and influence from parents about how to be careful with resources. Glen reflects that his family may not have been the best at taking care of the land. All three students reported that they had enough, but Glen states that his family lived modestly in a small house and that his dad had to work off farm to make ends meet. It is interesting to note, however, that Gabe and Parker both report finding others that passed on the knowledge to them about how to live frugally. After graduating with her B.S., Parker went to live with her grandparents.

“So they are extremely frugal. You wash out the zip lock bags and reused them...all of the little twist ties get saved, pretty much everything gets saved...so I know that some of my habits now I developed from my stay with them.”

Gabe says that his dad “made a great salary for the better part of two decades” but that for a while he felt like, “they were the villain, buy whatever you need, have the air conditioner on all the time, it doesn't matter.” After his participation on the SAG, Gabe found a mentor in the form of prairie farmer K.C., and describes his influence:

“I really feel empowered by him....K.C. really impacted my understanding..he says that the problem with our environment and our state is that people don't ask themselves what is enough. His definition of enough is a nickel more than you need, which is so true.”

All three students indicate that although they may not have learned much from their parents about conserving or living frugally, they now have goals of living with less for themselves.

Differences in the Knowledge Node also showed up by culture. Two of the respondents, both in the over 40 age category, were born and grew up in other cultures, one in western Europe and one in south Asia. Both stated that frugality and using resources carefully was pervasive in their culture, even for those who were middle class. The European respondent mentioned family discussions about the Green Party and learning of Agenda 21, the Club of Rome and other sustainability initiatives as part of their childhood schooling. Her mother always rode a bike, they shopped with cloth bags and always recycled. When asked why she thought Europeans were ahead on these issues, she spoke of several aspects of the society.

“Europe is so much more densely populated than the US. You cannot tread on everybody else's feet all time. You have to move more carefully, you use smaller cars, you have not so wide roads, you have not so huge parking lots...everything

is more limited and that creates innovation I think. There was no need in the US to do any innovation.”

She sites expensive energy costs as driving innovation in building and windows.

“We have ecological taxes too...people understand that there are limited resources, at least I understood that at the time.” She also notes that the European community is highly regulated.

“So if you want to put sustainability through, you have to have a law and regulation for everything. There is a code and requirement and task force for every little piece of paper...yes it is enormous...but it managed to bring across a lot of good things related to Kyoto and Agenda 21, every single community HAS to have a sustainability agenda....Europe wouldn't be where it is today if it had just waited until people had thought it through and decided..it would make a good idea and everybody adopted it. You need some pushing.”

Both of these respondents are participating on the SAG because it is compatible with their current positions at PPU, but both stated that they did not need to be persuaded about promoting sustainability.

Chapter 4: Discussion

Diffusion of Innovation Theory Advantages

Overall, using Diffusion of Innovations (DoI) theory to organize this deductive study proved useful in several ways. The theory revealed a process for engagement- the five stage Innovation-decision process described by Rogers (2003). It provided access to not only the decisions of respondents to engage, but revealed many things that led up to the decisions. Prior knowledge, including awareness, how-to and possibly principles knowledge, gained throughout the stages of Childhood, College and Professional work, made respondents open to considering the SAG council as an innovation that might help them solve a problem. When they were exposed to the SAG innovation, they were then persuaded by referent others through social networks or recruitment to give the SAG a try. The importance of Knowledge and Persuasion often continued after the Implementation stage, leading to a fifth stage of Confirmation. Respondents were successful in finding more knowledge about how to improve sustainability in their institutional setting and sought out and received an official endorsement from the university.

Returning to the research question of what motivated these individuals to take action to improve sustainability, specific motivations identified by DoI theory include prior knowledge about sustainability and/or civic engagement that serves as a lens, allowing respondents to see the innovation of the SAG as making sense and being compatible with how they were raised or what they learned in

school. Social relationships, in the form of family, friends or social groups pulled or pushed some respondents into action. Others were motivated by endorsements from their professional societies, their supervisors or the university administration. Characteristics of this innovation, including its compatibility with personal and wider social contexts and numerous advantages perceived by the individuals, especially related to their jobs, were also important motivators. The theory also showed how individuals were differentially motivated in a changing social context.

DoI theory, as applied here, does not assume that every one participating in collective action and civic engagement has the same motivation. Adopter categories highlight the different motivations. Innovators quickly adopted the SAG idea when they were made aware of it. They were motivated by seeing that other universities and organizations were already doing this and believed that they could spark and find support for a similar effort in their own context. Early Adopters expressed some concerns, either about the purpose of the SAG council or the possible power of the SAG to effect change, but were persuaded and later confirmed their decisions when they saw that opinion leaders were or would perhaps endorse the effort. When the university officially recognized the SAG and then later when the president started his own greening initiative, others, considered Early Majority, began to hear more about the SAG, through work-related grapevines and/or SAG recruitment, and were persuaded that participation might have benefits, especially for their jobs. Those who did not

confirm their original decision saw less compatibility and fewer advantages of the SAG for their own situation. One also expressed the belief that the public was not ready to make needed sacrifices, possibly indicating that working on the SAG was a waste of time. He also believed that opinion leaders were bowing to pressure from outside interests that would prevent promotion of collective action on sustainability improvement. These beliefs might put them in a later adopter category, that of Late Majority, because this group tends to not adopt until they calculate that it is safe for their situation.

Another advantage of DoI theory is its focus on characteristics of the innovation, in this case, a type of civic engagement. The efforts of the SAG group were not implemented with riot or protest, strikes, or political campaigning. In fact, there were specific efforts by some of the respondents to keep the group from being radical or advocating things that might be against environmental regulations. One of the four important factors affecting the diffusion of an innovation, according to Rogers, is the context in which you are trying to diffuse it. A specific context includes structure, values and norms, opinion leaders and communication channels (Rogers 2003). The context for this collective action was an American university. The fact that this SAG collective action was broad based was somewhat problematic for the university structure, but it was compatible with research, educational and financial goals of the university and this aided its diffusion. The innovators chose a type of civic engagement that had already been used at another university. Also, SAG employed a familiar

university format of having workshops and organizing something with a committee-like structure, a mission statement and by-laws. They used established communication channels of e-mail, list-serves, and university publications to advertise their effort. Respondents usually could not remember where they saw something about the SAG, but said merely that it was “out there”, probably in this established channel. If the collective action had been solely initiated by students, for example, or had employed a different collective action strategy, it would not have diffused in the same way and different actors could have been involved, because these respondents might not have been motivated to join an innovation with different characteristics. This gets at a key question of why *these* actors for *this* engagement. It seems that the type of collective action and its relationship to its context, as well as the cause of the engagement, will help determine the “who”.

Finally, DoI theory takes into consideration a possibly changing social context as time passes in which opinions, endorsements and communications may change as a result of the diffusion of the engagement itself. Actors who are not motivated to join collective action when it begins, might change their minds as more people adopt and opinion leaders come on board. If opinion leaders do not endorse the collective action, some may drop out or others who are more inclined toward radicalism may join because they are motivated to challenge authority. The SAG council has progressed to this day and can now recruit new members for several important reasons. The co-founders were not only

innovators but were experienced professionals, Sylvia as a tenured professor and Karen as a longstanding member of the local community. They organized in a way that was largely congruent with their social context, in spite of the fact that at first the university was unsure about how to make their group official. Karen, Sylvia and the other Early Adopters actively sought out opinion leader endorsement and worked within the system. Those that were skeptical or even saw the group as a threat, became involved anyway and made positive contributions to the group's identity. Also key, the innovators welcomed and accommodated the skeptics. Finally, opinion leaders at the university, in spite of their initial concern about the political connotation of greening, were open to meeting with Karen and the others. Opinion leaders in authority were financially supportive of the SAG's initial requests to attend national or regional meetings about sustainability in higher education. They were flexible and willing to work through the dilemma of how to accommodate a group made up of faculty, staff and students. And when Matt suggested they put "sustainability" in their name, Karen accepted that, stating, "What do we care what we are called, there is no ego here." The administration was tolerant of the SAG's efforts to introduce sustainability related technology to the campus, such as vending misers and motion sensors, and went on to expand their trial around campus, eventually realizing that this not only felt like the right thing to do, but it saved money. Both the innovators and the opinion leaders in authority were flexible, tolerant and supportive of each other and this allowed the innovation of this particular kind of

civic engagement to diffuse with resulting benefits to all.

Diffusion of Innovations Theory Gaps

Dol theory is broad enough and system-minded enough that we should expect it to help explain a wide range of innovations and their diffusion, whether the innovation is an object, technology, practice or new idea in a rural village or a longstanding institution. My research suggests there might be a couple of areas important for collective action and civic engagement, however, that are not adequately covered by Dol theory. Some respondents seemed motivated in part, to adopt or reject SAG involvement, based on their perceptions of their own identity. Dol theory does touch on the ideas of homophily, the extent to which actors are similar, and heterophily, the extent to which they are different. According to Rogers, people who try to diffuse a new innovation into a system are usually heterophilous to those targeted for adoption (Rogers, 2003). But acknowledging how actors are similar or different does not fully explain someone's identity or explain how actors assign an identity to the likely adopters of a particular form of collective action with which they then compare themselves. It might be possible to expand the idea of compatibility to discuss the match of some kinds of engagement or causes for engagement to an individual's identity. Finding other ways to incorporate identity theories into diffusion theory could be useful too.

The role of emotion in collective action has been documented, especially for more radical types of action. This is a second probable area of significance

that is not targeted specifically in DoI theory. Rogers discusses the role of empathy for potential adopters by change agents and how it positively affects diffusion (Rogers 2003), but respondents mentioned passion for the environment or sustainability, the role of fun and camaraderie, distaste for activists or environmentalists, and disappointment in institutions like religion or the university. Some respondents also mentioned a love of food that seemed tangentially related to the work of the SAG. DoI theory might be said to consider feelings of respect for opinion leaders or referent others and feelings of caution, fear or risk, but numerous other emotions seem potentially important for diffusion, especially the diffusion of collective action. How does prior knowledge affect emotions related to an innovation? And are there innovations that are so emotionally charged, as some forms of collective action can be, that diffusion processes are altered? Can strong emotions about an innovation be overcome? These are other questions that should be addressed if DoI theory takes on a more prominent place in collective action, social movement and civic engagement research.

Comparison With Other Theories

Acknowledging that DoI theory has shown several advantages for understanding collective action as well as a few possible gaps, how then, does it compare with the other collective action theories discussed in the review of the literature at explaining the results of this particular study and motivations for civic engagement in general?

Conflict theories that predict collective action will take place when there is inequality between social classes do not seem to fit the collective action of the SAG. It is not readily apparent that the innovators began this greening effort because of inequality in their circumstance. One can argue that the problem of sustainability can be framed in a conflict viewpoint, with poorer nations seeking to develop and gain access to a Western lifestyle that is seen as desirable, thereby putting increasing pressure on limited resources. This would also support the idea of Relative Deprivation Theory, because mass media today makes it easier for those who are poorer to see that a better lifestyle is being lived by others . Co-founder Karen grew up in some Central American countries in which this might have been the case, and co-founder Sylvia did extensive research in south Asia, but addressing this inequality was not mentioned by either woman during the interviews. Karen and one student mentioned what they learned from poorer nations about careful use of resources or the benefits of an active civil society as being positive role models to follow, not examples of inequality to be addressed. Conflict theories examine the role of the social context, mostly emphasizing its structure of power, but seem to lump action for change into undifferentiated categories such as uprising or revolution that picture all actors as flat members of a social class. With its macro level focus on the objective conditions of society, it does not give the rich insight into possible different motivations for individual actors in their immediately surrounding context that Dol theory can provide.

As the Early Adopters of the SAG approached the PPU administration for funding to attend conferences or host workshops, it might be argued that they were motivated by the availability of resources and that Resource Mobilization Theory (RMT) is applicable. It is true that pre-existing organizations supported some of the earliest SAG efforts. The Department of Natural Resources (DNR) and the College of Liberal Arts and Sciences (LAS) helped fund the initial Brenda Payne workshop at PPU, but co-founders Sylvia and Karen did not indicate that these organizations were actively pushing them to start a SAG group at the university. The resources were perhaps necessary or at least helpful, but not sufficient to get the group off the ground. Later resources secured by the SAG council from Matt's office could also be explained as one type of opinion leadership endorsement using DoI theory. If existing social movement organizations had been present and influential in starting the SAG, they could perhaps be explained by DoI theory as change agents who are trying to introduce a new innovation. Although calling attention to the important role of resources, RMT does not seem to offer something that DoI theory cannot also accommodate.

I have already acknowledged that DoI theory does not adequately address the issue of identity for civic engagement without a possible expansion of the idea of compatibility. Using Social Identity Theory (SIT) to help explain the motivations of these respondents would put the focus on some of the problems that actors were trying to solve. Most of the respondents expressed a desire to

find and connect with others similar to themselves who were interested in sustainability and greening. Working with others was also seen as a way to have more impact on the university than simply trying to effect change alone. It is not clear, however, that working with the SAG was seen as creating an in-group and out-group situation. Early Majority adopters may be viewed as using SAG involvement to enhance their status in their jobs, but only a co-founder strongly associated her own identity with the SAG council. Stryker's concept of identity salience would highlight the fact that many respondents who confirmed their adoption had family or friends who were supportive of at least some aspect of sustainability activism, but DoI theory also takes this into consideration by examining sources of persuasion.

New Social Movement (NSM) theories seem to do a better job of explaining engagement like the SAG council than older conflict theories. The respondents were white collar workers and students in a cultural setting of an institution of higher education. The larger issues of environmentalism and now sustainability fit into the NSM template of seeking to bring others into an interest group rather than trying to wrest power from another group. The action of the SAG was focused towards beginning a discourse about the direction that their institution is taking, but the macro focus of NSM theories does not explain how these actors came together or what motivated them beyond the beginning of their workshop in the way that DoI does.

Several of the respondents can be considered what one rejecter of the

SAG called “true believers”, individuals who were motivated by a sense that promoting sustainability was a morally right thing to do. These actors could be seen as the “intuitive theologians” mentioned by vanZomeren and Iyer (2009:654). When beginning the research, I believed that such individuals must be the key to the social transformation that we need today. The results show, however, that there were several key motivators beyond being a true believer. Some who joined the SAG can be considered rational actors, supporting Rational Action Theory (RAT). They joined because they calculated that this was related to their job, either in a way that could threaten their job or enhance it. Diffusion theory predicts that these advantages must be there and must be supported by opinion leader endorsement in order for an innovation to diffuse. Respondents from other cultures also reinforce this by stating that living more sustainably is required, either by the fact of high population combined with limited resources or by strong regulation and financial incentives. Most individuals in these cultures live more sustainably because they have to, not because they have a strong moral belief that it is right. Moral beliefs may launch a social movement, but it is important for a theory here to explain collective action beyond the birth of the movement. Respondents mentioned the importance of the sincerity and passion of the innovators for keeping the group moving forward, and diffusion theory can explain some of the origins of this emotion by exploring prior knowledge and persuasion by others that was present in the actors' context and communication channels. The SAG council would probably not have progressed to where it is

today without these true believers, but DoI theory brings to light the fact that for this collective action to diffuse beyond just a few passionate innovators, perceived advantages and endorsements must emerge.

DoI theory indicates that if PPU wants to continue the diffusion of sustainability activism throughout its institution and into society, it must provide, as one respondent described it, “reward signals” to faculty, staff and students. The university must continue to endorse the efforts of the SAG council and other groups that are working in the same direction. The reward signals and endorsements should be communicated extensively, both in formal and informal networks. They must address the complexity issues associated with promoting sustainable practices and deal with real or perceived pressure from other opinion leaders who appear to be against more sustainable practices before the Late Majority will join these efforts. Finally, the university should also continue to value those who are true believers, even as it attempts to appeal to more calculating and rational actors.

Before concluding, I must acknowledge that there are some limitations inherent in this research. I was the only coder for the analysis. Validity for the coding was assumed because a long standing and well respected theory was used to suggest the Main Nodes for the data, but further work with the data could be enhanced by open coding some of the interviews to compare with the results obtained by using DoI theory and by bringing in additional coders. Also, it was my hope to present my results to the respondents for their comments.

This would have perhaps increased the reliability of the findings, but time was a limiting factor for this endeavor. The biographical interview method I used did result in a rich data set with over 300 pages of transcribed responses to analyze. Using this methodology relies heavily on the recall of the respondents though and brings up a third limitation. At times, the respondents were asked to recall their thinking and motivations from many years ago, up to 8 years ago when answering questions about the SAG council specifically, and back into childhood when answering questions about knowledge and persuasion. A participant observation methodology or perhaps a longitudinal study might have increased the reliability of the results and mitigated some of the limitations associated with respondent recall, but due to the limited time period I had to complete the research, these options were not viable.

When considering limitations from a theory standpoint, choosing one theory to use for creating a deductive study and for designing the open ended interview guide may have limited or skewed the data I obtained. An effort was made to be open, however, during the coding process, to other themes outside of those suggested by DoI theory. This resulted in Child Nodes of “Knowledge Gaps” under the main Knowledge Node and “Identity” and “Interest, Feeling and Emotion” under the main Persuasion Node. It is also important to consider what DoI theory was designed to explain. Another possible theory-related limitation is that, by trying to apply DoI theory in a novel way to the area of civic engagement and collective action, I have stretched the theory too far from its intended

purpose. Diffusion theory has been useful over the years for explaining individual and organizational behavior change. It has shown that knowledge, as well as persuasion by characteristics of the innovation and by others, affect adoption decisions. It has also offered explanations for why different individuals or groups are motivated by different factors and adopt at different times. It is easy to see the usefulness of DoI to explain individual and organizational change. We might question, though, whether or not it was designed and/or can be useful in explaining how society transforms itself, which is more related to group action and social movement research. Is this too much to ask of diffusion theory?

We may find that there is some need to expand and deepen parts of DoI theory for it to be helpful in understanding social transformation. I propose, however, that researchers attempting to explain “when and why individuals will (or will not) engage in collective action” (Wright 2009: 860) should consider using Diffusion of Innovations theory to help bridge the numerous macro and micro theories that are prevalent in this field. I believe I have barely scratched the surface of what DoI theory has to offer the social movement and civic engagement literature. Looking deeper into the characteristics associated with innovativeness could help us understand how emotion, interest and identity develop and play a role in collective action. Expanding Rogers' concept of compatibility to include the compatibility of the innovation with adopter identity could also prove useful. The fact that DoI theory looks at individuals, context,

communication channels and time seems to answer a need I see for social science research to take more of a systems approach in looking for solutions to our 21st century problems. If I am able to continue my research, it might be useful to study the diffusion of sustainability activism or other civic engagement in different contexts, including cultures that are considerably different from American culture. I would expect to see the same diffusion process, but might find differences in the characteristics of opinion leaders and endorsements, differences in knowledge and also perceptions of complexity. Continuing and expanding this research using a systems approach can help us find leverage points for nurturing positive types of engagement, mitigating destructive kinds of engagement and improving the sustainability of lifestyles all around the globe.

As we attempt to expand the systems approach in the social sciences, the presence of feedback loops is one aspect of a good systems theory that might at first appear to be missing in diffusion theory. DoI theory can explain how actors perceive a problem and seek out innovations to solve that problem, which actors are most likely to develop the innovation and be its first adopters, and how continuing diffusion might play out, but is this a dead end process? What happens when all those who are going to adopt have done so? If collective action theorists were to focus heavily on the problem aspect of DoI theory and the innovation, especially innovative ideas that could address these problems, I believe they might find useful feedback loops that can also help explain social transformation. The DoI concept of Confirmation suggests a feedback loop of re-

evaluation of adoption decisions. Actors seek additional knowledge and feedback from others when deciding whether or not to confirm their adoption decisions. My research shows that knowledge, especially prior knowledge, often comes from institutions in society such as the family, schools, civic organizations or the mass media. The messages that come from these institutions and opinion leaders, what I call messages from society, can change as time and events in the context change. Individuals themselves can be innovators, and send their own messages to society by introducing new ideas into institutions. These ideas are adopted or rejected to a greater or lesser extent according to diffusion processes. Innovation is a key way that societies and cultures change, especially when innovations include ideas and practices as well as tools or other technology. As societies change, there is feedback related to how well current or past innovations are working to solve problems. Here we can even see innovations as types of changes in Bourdieu's habitus that occur during times of crisis when the habitus no longer works for the current field. Finally, Rogers (2003) discusses the two phenomena of innovation clusters and re-invention. I believe that re-invention must occur due to some feedback loop in which actors like an innovation, but see some need to change it for their own situation. Studying innovation clusters might also be a way that DoI theory can help us understand macro changes in the social and cultural environment.

In conclusion, the problem of declining and changing civic engagement in America discussed by Putnam is intimately entwined with our looming problems

in society, including the problem of the sustainability of our popular American lifestyle. The American culture will most likely remain less regulated than other cultures, but we have seen that relying only on economic reward signals to drive our actions results in fluctuating cycles of interest that do not bring about lasting social transformation. In the past, we have become aware of environmental problems and have seen the emergence of social movements focused on dealing with these problems. Currently, we are facing economic problems that are becoming key issues in the political arena. In order to deal more effectively in both of these areas, it is necessary to build and diffuse social capital characterized by local involvement, dense networks of social relationships and the requirement for mutual trust and reciprocity (Putnam 2000), by supporting collective action efforts like the SAG council in our institutions. Diffusion of Innovations theory can have a prominent role in helping social scientists and others understand what motivates individuals to engage and stay committed to that engagement and can possibly help us understand how this can nurture social transformation so that we bring about long term positive changes for the future.

APPENDIX A. INTERVIEW GUIDE

The Diffusion of Sustainability Activism at an American University

I. Informed Consent

Give participant a copy of the Informed Consent Document. Read the document to the participant and ask if they have any questions about it. Ask for their signature on the document.

II. Welcome

Ask participant if they have any questions or concerns before beginning the interview. Thank them for giving you their time for this study. Ask them if they would be willing to turn off their cell phone. Remind them to tell you if they are uncomfortable or want to stop the interview at any time.

III. Test Equipment

“To start out and test that the digital recorder is working correctly, tell me a little bit about yourself and your role at Iowa State.” (Rewind and listen briefly to make sure the settings are correct. This is not a part of the interview but is meant to help the respondent to relax.)

IV. Semi-structured interview questions

“The purpose of my research is to understand how you became aware of the idea of sustainability and then became involved or interested in the ISU Council on Sustainability effort.”

1. So to begin, tell me about your experience with the Sustainability and Greening Council?

2. How do you believe you became aware of the issue of sustainability?

Prompts:

When and under what circumstances do you think you became initially aware of sustainability issues?

Did any of the following contribute to your knowledge about sustainability?

Family
friends
teachers
organizations
the media
books
experiences

Did your knowledge about sustainability grow gradually or occur at some specific point in your life?

3. When and how were you aware that sustainability needed to be improved at PPU?**4. What persuaded you that you should take action to improve sustainability at PPU?**

Prompts:

Did any of the following help convince you that you should take action?

Family
friends
coworkers
experts
media
books
organizations
experiences

5. Why did you take the step of joining the PPU SAG?

Prompts:

Was it at all difficult for you to make the commitment to the SAG?

Did you consider not joining the SAG?

Did you consider other avenues for sustainability activism besides the SAG?

Why do you believe other people did not take the step of joining the SAG?

6. What steps did you take to implement your early involvement with the SAG?

Prompts:

What was your early role with the group?

How did you implement your desire to take action in the context of the SAG?

7. Are you still involved with the SAG? Why or why not?

Prompts:

If you are no longer involved, what led to your disengagement?

8. Is there anything else you want to tell me that can help explain what brought you to this activism for sustainability? Can you think of any one else that I should interview for this study?

Additional names:

V. Thank respondent for his/her participation and end the interview.

“Thank you so much for taking the time to talk with me about your sustainability activism. I will transcribe this interview and then contact you through e-mail to see if you want to review the transcript and make any additional comments. Also, after I have interviewed all of the participants and made my conclusions, I will e-mail you the conclusions for your comments.”

APPENDIX B. MAIN NODES, CHILD NODES AND TREE NODES

Main Node	Child Node	Tree Node
Knowledge	Childhood	Family and Culture
Knowledge	Childhood	Society
Knowledge	Childhood	Other Cultures
Knowledge	Childhood	Experiences
Knowledge	Childhood	Education
Knowledge	Childhood	Mass Media
Knowledge	College	Education
Knowledge	College	Society
Knowledge	College	Other Cultures
Knowledge	College	SAG Council
Knowledge	Professional	Society
Knowledge	Professional	Opinion Leaders
Knowledge	Professional	Mass Media
Knowledge	Professional	Professional Meetings
Knowledge	Professional	Other Cultures
Knowledge	Professional	SAG Council
Knowledge	Professional	Professional Experiences
Knowledge	Professional	Personal Experiences
Knowledge	Post SAG	Opinion Leaders
Knowledge	Post SAG	Professional Experiences
Knowledge	Post SAG	Personal Experiences
Knowledge	Knowledge Gaps	Childhoods
Knowledge	Knowledge Gaps	College
Knowledge	Knowledge Gaps	Professional
Persuasion	Identity	
Persuasion	Family	
Persuasion	Compatibility	
Persuasion	Complexity	
Persuasion	Relative Advantage	
Persuasion	Near Peers	
Persuasion	Opinion Leaders	
Persuasion	Friends	
Persuasion	Other Cultures	
Persuasion	Interest, Feeling and Emotion	
Persuasion	Mass Media	
Decision		

Implementation
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Gave Time
Networked
Life Cycle Assurance
Demonstrated Sustainable Practices
Attended Meetings
Discussed Ideas
Educated Students
Chaired
Group Identity
Passive/responded
Pushed
Organized
Teamed Up
Ground Work
Behind the Scenes

Confirmation

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Jo Ann (Kosier) Simpson was born in Sterling, Illinois on June 3, 1956. She received her Bachelor of Science in international agronomy from Purdue University in 1977 and completed requirements for an elementary school teaching license at Indiana University-Purdue University at Indianapolis in 1994. She engaged in the AmeriCorps program as a volunteer and later as director of the Each One Counts Corps in the Mt. Vernon Community School Corporation, Fortville, IN, before coming to Iowa State University for graduate work. She is currently a substitute teacher in the Ames Community School district, Ames, Iowa.