

*Climate Change Counter Movement Neutralization Techniques: A Typology to Examine the Climate Change Counter Movement**

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The Climate Change Counter Movement has been a topic of interest for social scientists and environmentalists for the past 25 years (Dunlap and McCright, 2015). This research uses the sociology of crime and deviance to analyze the numerous arguments used by climate change counter movement organizations. Content analysis of 805 statements made by climate change counter movement organizations reveals that the theory Techniques of Neutralization (Sykes and Matza, *American Sociological Review* 22 (6):664, 1957) can help us better understand the arguments adopted by these organizations. Taking two observations from two time points, the author examine not only the composition of the messaging adopted by Climate Change Counter Movement (CCCM) organization, but how these messages have changed over time. In all, there were 1,435 examples of CCCM neutralization techniques adopted by CCCM organizations across these two points in time. This examination of the movement provides valuable insight into the CCCM and the subsequent environmental harm that is partly facilitated by their actions.

Introduction

Climate change is one of the most pressing issues facing the world (Pachauri et al. 2014). Industrial and technological developments have increased the amount of carbon dioxide (CO₂) and other greenhouse gases (GHGs) creating what scientists have documented as a warming of the Earth's atmosphere (e.g., Mann et al. 2017). The adverse effects of climate change will likely cause mass victimization of varying forms (Popovski and Mundy 2012), including public health effects such as heat-related illnesses, waterborne and foodborne diseases (Patz et al. 2000), to species decline or extinction (Thomas et al. 2004).

Despite the scientific consensus on climate change and its impacts, an organized group of actors have campaigned, distorted, and minimized the impacts of climate change criticizing domestic and international policy approaches to address the adverse effects of climate change. This group of actors is more commonly referred to as the Climate Change Counter Movement (CCCM) (Boussalis and Coan 2016; Brulle 2014; Dunlap and McCright 2015;

Farrell 2016). The CCCM is made up of fossil fuel industries, conservative foundations, think tanks, front groups, and AstroTurf organizations (Dunlap and McCright 2010). Directly and indirectly, these organizations oppose proposed and existing mitigation strategies using power and influence in public policymaking. For the purposes of this research, CCCM organizations are those categorized as non-profit and non-governmental organizations (NGO). Arguably, these organizations play an influential role in negotiating public policy and influencing public opinion on behalf of fossil fuel and corporate actors (Levy and Egan 2003).

Researchers have proposed several reasons why the CCCM emerged (see Dunlap and McCright, 2015 for a review). The overarching conclusion is that the movement attempts to protect the accumulation of capital from production processes reliant on fossil fuels (Dunlap and McCright 2015). Simply put, the destruction of nature is inherent in capitalistic production (and consumption) (see Lynch et al. 2013 as related to the Treadmill of crime) and climate action will compromise the ability to sustain and increase the accumulation of capital (Levy and Egan 2003). These organizations then operate to protect what McKie (2018) argues is a fossil fuel-based global capitalist economy; that is, CCCM organizations operate as a network attempting to protect a fossil fuel-based economic system challenged by the rise of environmentalism and environmental policy. This is because the economic system continues the intensification of carbon-intensive production and consumption practices that greatly contribute to climate change (Foster 2011).

Social scientists have provided vital insights into the diverse arguments adopted by the CCCM (see Boussalis and Coan 2016; Farrell 2016). Nonetheless, formulating a set of categories through a deviance lens provides a new perspective. This study proposes Sykes and Matza's (1957) *Techniques of Neutralization* offers one-way to categorize these arguments. To the author's knowledge, no one has yet empirically applied these techniques to examine the arguments made by CCCM organizations despite their relatively non-normative stance on climate change.

To fill this lacuna in the literature, the author propose Sykes and Matza's approach provides a foundation to answer the first research question: Can the arguments adopted by CCCM organizations be rebranded as CCCM neutralization techniques? This is because the theory offers a theoretical perspective that brings the organizations of interest into the lens of sociology of crime and deviance. More specifically, proposing that using techniques of neutralization to frame a debate on climate change to protect the interests of corporate and vested interest actors inadvertently contributes to less or inaction on climate change and associated environmental harm (see also Kramer 2013). The author then answer the second research question: Can these CCCM

neutralization techniques be used to monitor change over time in organizational messaging? the author take two points of time to see whether this theoretical framework can help monitor change over time observing whether organization adopt the same arguments or if they change, and speculate why these changes may have occurred. Change in CCCM organizational messaging over time has been the focus of both Boussalis and Coan's (2016) and Farrell (2016) quantitative text mining projects, and the author make some additions to this literature by asking whether this theoretical framework is useful for monitoring change in CCCM organizational messages.

To answer these research questions, the author first examine neutralization theory to justify its application. Second, to support the application of these techniques, the author employ a content analysis of 805 statements made by CCCM organizations between the years from 1988 to 2016 to determine potential reasons as to why CCCM neutralization techniques are adopted. The author then explore how these techniques change across two points in time to answer the second research question. Finally, the author suggest a brief narrative strategy that could be used by the public, NGOs, and policymakers to minimize and counter the implications of CCCM neutralization techniques used by CCCM organizations.

Theoretical Framework

Sykes and Matza (1957) applied neutralization theory to the study of juvenile delinquency. Using an individual unit of analysis, they asked the question "why do men violate the laws in which they believe?" (1957:666). According to Sykes and Matza:

Much delinquency is based on what is essentially an unrecognized extension of defenses to crimes, in the form of justifications for deviance that are seen as valid by the delinquent but not by the legal system or society at large.

In other words, a deviant recognizes wider societal norms and use neutralization techniques to avoid moral culpability when they violate these norms. This contrasts with most other theories of deviance that propose a delinquent follows or believes in an alternative set of values that differ from wider society (i.e., subcultural theories such as Cohen 1955). The arguments used by a deviant are commonly described as rationalizations used after an act have been committed to protect the individual from both self-blame and the blame from others. However, Sykes and Matza proposed these could also be justifications used by deviants proceeding deviancy and "make deviant behavior possible" (1957:667).

Sykes and Matza identified five techniques of neutralization, although researchers have expanded the number of techniques over time (for a review see Maruna and Copes 2005). The five original techniques are listed below:

- 1 *Denial of Responsibility*: the deviant lacks or does not take full responsibility because there were other mitigating factors allowing a deviant action to take place.
- 2 *Denial of Injury*: the delinquent claims they are only partially responsible, and/or the injury is in fact not as bad as the victim may claim. An additional caveat to this technique comes from the work of Thompson and Harred (1992) that add the deviant may claim their act/actions are beneficial.
- 3 *Denial of Victim*: the deviant believes there is, in fact, no victim or that the victim is in some way deserving.
- 4 *Condemnation of the Condemner*: the deviant argues that the condemner should be condemned for their behavior.
- 5 *Appeal to Higher Loyalties*: the deviant contending there is a group of people or something that requires the deviant act to be committed even though it is a violation of a social norm.

While the theory suffers from methodological weaknesses in particular (see Fritsche 2005 for a review), it continues to be widely applied in the field of criminology and other disciplines (e.g., Maruna and Copes 2005; Suchita, Wasewar, and Agnihotri 2017; Van Baak et al. 2017). Importantly, some have applied the theory to examine harmful behavior that may not be defined under traditional definitions of law. More specifically, its application to the study of social harms (Hillyard and Tombs 2004), which proposes criminal law fails to capture other forms of harm (see also Pearce and Tombs 2007). For instance, Lynch, Nalla, and Miller (1989) observe the media response to the Bhopal disaster in India. One of their findings from their content analysis revealed that both across India and the United States, media distributed by Business periodical focused outlets were more likely to overlook the death and tragedy caused by the Bhopal disaster. Additionally, they observed that the benefits of environmental hazards and potential harms associated with industrial production appeared to be a focus, particularly within the US sample, overlooking the harmful human costs. Similarly, Schindeler and Ransley (2015) discuss how respondents in Australian court cases and tribunals regarding justifications for failing to deliver safe work environments adopted neutralization techniques. Consequently, such neutralization techniques—through a regulatory legal framework—were able to reduce and in some cases normalize the harmful impacts of such corporate neglect.

Whyte (2016) provides an insightful use of neutralization theory to understand how corporate actors in the automobile industry minimize industry wrongdoings. He proposes industry actors use neutralization techniques to shape a conversation or debate about behavior that may not be criminal or

deviant in a traditional sense, yet still cause harm by, for example, health and safety breaches, and/or violating pollution levels. Similarly, Meesters and Behagel (2017) find mining project managers employ a neutralization discourse in Social License to Operate documents. They adopt techniques of neutralization to minimize the associated harm of extractive industries on both nature and society. Likewise, Fooks et al. (2013) employ neutralization techniques to examine British American Tobacco corporate social responsibility reports. In doing so, they summarize how the company employs techniques to shape perceptions, attitudes, and criticisms about unethical company behavior, or the minimization of the harmful effects of this industry.

This application of neutralization theory to examine behaviors not classified as deviant or criminal under conventional law, and operationalized to illustrate a debate and framing strategy of an issue that may not be criminal or deviant yet harmful, suggests there is reason to believe it may apply to the behavior of CCCM organizations. This is because, climate change and its implications contribute to a discourse that could be adopted by the public and politicians that help protect, for example, extractive industries that harm nature and the society. In other words, because, “indifference rather than intent may well be the greater cause of avoidable human suffering” (Box 1983:19), creating a debate or indifference toward climate change and its impacts. In doing so, it may fail to prevent the subsequent harm caused by the negative relationship between the fossil fuel-based economy and climate change.

To further justify why Sykes and Matza’s theoretical framework can be applied to the study of CCCM organizations, the author highlight approaches from the sociology of crime and deviance that have already been used to explore climate change (Agnew 2012; Lynch and Stretesky 2010). Agnew (2012), for instance, outlines potential criminogenic consequences of climate change, including increased state conflicts, conflicts over natural resources, and increased violence. He applies criminological theories including strain (Merton 1938) and social disorganization theory (Shaw and McKay 1942), concluding climate change may create beliefs, values, and a social environment that increase opportunities for criminal behaviors.

Adopting a social harms approach, others have turned their attention to corporations and state actors driving climate change, suggesting this behavior be labeled as criminal and/or deviant (Kramer 2013; Lynch, Burns, and Stretesky 2010). For example, Kramer (2013) adopted a state-corporate crime perspective arguing the lack of US legislation to address climate change is one outcome of relationships between, for example, carbon-intensifying corporations, related industries, political organizations, think tanks, and foundations.

Kramer’s critical “deviancy” perspective on corporate and [political] states role in failing to seriously address climate change, aligns with ideas emerging

in the Treadmill of Crime literature (e.g., Stretesky, Long, and Lynch 2014). Stretesky, Long, and Lynch (2014) draw on Schnaiberg's (1980) concept of treadmill of production proposing links exist between environmental disorganization, political economy, and a harms-based approach within criminology. They contend that capitalism—as the world's dominant economic system—drives the constant expansion of production to accumulate profit. Consequently, this creates a form of environmental disorganization, whereby in the constant pursuit of capital, there is a subsequent disorganization of the ecosystem or environmental harm. CCCM may well be an integral group of organizations used to defend this trend and prevent any disruption to the treadmill. Operating alongside and in conjunction with powerful “capitalist” actors, such as fossil fuel industries (see also Brulle 2014), through this perspective there is scope to further posit links between CCCM organizations and environmental harm.

Aligned with the views of Kramer (2013) and others, the author propose that CCCM organizations use CCCM neutralization techniques to minimize the problems and challenges associated with climate change, leading to further environmental harm. Thus, CCCM organizations operate to frame the debate on climate change science and policy as “up for debate” rather than aligned with the scientific consensus. The purpose of which is to resist challenges to a fossil fuel-based economic system that requires the constant accumulation of capital from natural resources (e.g., McCright and Dunlap, 2011). This is because human-caused climate change can be thought of as a systematic function of economic growth and industrial development under capitalism (Foster, Brett, and Richard 2010; Stretesky, Long, and Lynch 2013) and these industries are directly and indirectly connected with CCCM organizations (e.g., Brulle 2014).

Having identified how and why there is reason to believe the CCCM can be examined via a crime and deviance lens, the same principles of sociological investigation can be applied to CCCM organizations by forging a new interpretation of these oppositional arguments using neutralization theory.

Method

Before applying this theoretical framework to the messages adopted by CCCM organization, the first step in the process was to identify the CCCM organizational population. The author based the initial sample of CCCM organizations on an aggregated list of organizations based on previous CCCM literature (see Appendix A). The author then examined each organization's Web site to identify and inspect every other organization listed as a friend or connection on their Web site. To determine whether those connected organization could be classified as a CCCM organization, each had to satisfy characteristics denominated from a relational defined boundary (Butts, 2008). The author developed the relational defined boundary using previous literature on the

CCCM (see McKie 2018 for further information on this relational defined boundary).

The final population consisted of 465 CCCM organizations located across 53 countries operating between the between the years 1950 and 2016. Not surprisingly, many of these organizations ($N = 330$) are from the United States. Nonetheless, it is clear that CCCM organizations operate in other countries including parts of Europe, Latin America, and Australasia. Thus, while there were fewer CCCM organizations in other countries, the CCCM is not simply a US phenomenon (more information on these organizations and locations is available on request).

Following identification, the author undertook a content analysis of 805 CCCM organizational documents. The author operationalized a pre-defined coding scheme incorporating a set of neutralization techniques specific to the CCCM (see McKie 2018 for further information on the development of these techniques). Table 1 presents the transformed techniques of neutralization, renamed CCCM neutralization techniques. To account for the emergence of any techniques that were not pre-defined, the author added the category of "other" to the coding scheme. The employment or non-employment of a technique of became a dummy variable; coded "1" an organization adopts the techniques, and "0" an organization does not adopt the technique.

The author collected data from two points in time to see whether there were significant differences in neutralization techniques across the two points. To monitor these changes over time, the author used data taken from the organizations' point of emergence based on available data as "time 1" (between 1957 and 2014) and their most recent point in time (i.e., 2015 or their last year of operation) as "time 2." The author treat the techniques as mutually exclusive (independent), and Pearson's chi-square results are used to establish whether there are associations between techniques changing over time where significance is measured at the $p < .05$ level.

The author conducted two intercoder reliability tests to check the reliability and validity of the coding scheme. Krippendorff's alpha (KALPHA) is a useful measure of intercoder reliability measured as the percentage agreement between two coders where values of .00 (no agreement) to 1.00 (perfect agreement) (Lombard, Snyder-Duch, and Bracken 2002). The first set of independent coders were myself and an academic from the same institution. Coders analyzed a sample of ten position statements, and KALPHA equaled 67.9 percent. This was on the lower end of what can produce reliable results. Consequently, the author conducted a second test using ten coders from a criminology undergraduate level class studying techniques of neutralization as part of a learning exercise. KALPHA equaled 82.8 percent. The mean of both scores was 75.35

Table 1
Climate Change Counter Movement Neutralization Techniques

Name	Original definition	Climate change definition
Denial of Responsibility (DOR)	Denial of responsibility is used to contend that the deviant or criminal act is accidental and/or fell victim to their social environment unable to control their actions	Climate change is happening, but humans are not the cause.
Denial of Injury (DOI1 and DOI2)	Denial of harm or injury asserts (1) an act will not injure or significantly injure someone or something; and/or (2) there are likely positive impacts from this behavior	(1) There is no significant harm caused by human action, and (2) there may even be some benefits
Denial of Victim (DOV1 and DOV2)	Denial of Victim on one hand juxtaposes victim and offender as the deviant becomes the condemner and law enforcer	(1) There are no climate change victims. (2) If climate change victims do exist, they deserve to be victimized.
Condemnation of the Condemner (COC)	Condemnation of the condemner shifts negative or criticisms of a deviant those condemning that person's actions, thereby rejecting the higher status of the condemners.	Climate change research is misrepresented by scientists, and manipulated by media, politicians, and environmentalists.
Appeal to Higher Loyalties (AHL)	Appeal to Higher Loyalties imitates a sacrifice to satisfy the requirements of an intimate social group	Economic progress and development are more important than preventing climate change.
Other		Any argument that appears to be oppositional to climate change but not one of the above

percent, suggesting sufficient reliability in the coding and the author could proceed with confidence that findings would be reliable.

Findings & Analysis

The author identified 1,435 CCCM techniques in total across the two points in time. The average number of techniques used by an organization at both points in time was two. Additionally, there was a consistent pattern where an organization will include one or two techniques and far fewer organizations using three or more techniques at time 1 and time 2 (see Appendix B).

Table 2 provides descriptive statistics and an example of each technique at both time points. The results tell us that COC is the most commonly used technique across both points in time ($N = 517$) with 64 percent of organizations adopting the technique at time 1 increasing to 64.4 percent at time 2. AHL follows with 383 accounts in total with 48.3 percent of organizations adopting it at time 1, decreasing to 32.1 percent at time 2. The other techniques were less popular. There were 207 examples of the technique and the percentage of organizations using this technique increased from 18.5 percent to 25 percent over time. The author found 178 examples of DOI1, and the percentage of organization adopting the technique decreased from 19.7 percent to 17.2 percent. There were fewer accounts of DOI2 ($N = 103$) compared to other techniques at both points in time, but the percentage of organizations adopting the argument did increase from 12.5 percent to 13 percent. The technique used least in this data was DOV1, adopted by 49 organizations in total, and decreased from 8.2 percent to 2.1 percent over time.

Upon analysis of the statements, the data revealed another technique similar to the technique of neutralization justification by comparison (JBC) (Cromwell and Thurman 2003) ($N = 31$). JBC may be used to claim that climate change should be a lesser priority than other domestic or international policy issues. Thus, the technique is employed to compare and contrast climate action with other policies.

The technique DOV2 based on the notion that the victim was in some way deserving (Sykes and Matza 1957) did not appear in the data. There may be two reasons for this. First, it may be that this technique does not fit to the subject area of CCCM arguments. Second, it may be a true reflection of a potential argument used by CCCM organization because juxtaposing victim and offender is not a suitable argument to stimulate resistance to climate action.

A closer examination of each technique provides greater insight into the construction of denial and how techniques of neutralization can be used to label arguments used by CCCM organizations. In doing so, the author answer the first research question: Can the arguments adopted by CCCM organizations be rebranded as CCCM neutralization techniques?

Table 2
 Frequency and Example of Each Climate Change Counter Movement
 Neutralization Technique

Technique of Neutralization	Freq. Time 1	Freq. Time 2	Total	Example
DOR	88	119	207	“Changes in global temperatures are natural. There is no proof that temperature is affected by anything that man has done” (American Policy Center, 1998).
DOI1	94	83	177	“Man’s contribution to atmospheric CO ₂ is small and dwarfed by natural emissions. . .” (Carbon Sense Coalition, 2007)
DOI2	49	54	103	“CO ₂ does not control the climate. It is an essential plant food and more CO ₂ will produce more plant growth and a greener globe” (Clexit, 2015).
DOV1	39	10	49	“Computer models forecast rapidly rising global temperatures, but data from weather satellites and balloon instruments show no warming whatsoever” (Science and Environmental Policy Project, 1998).
DOV2	0	0	0	–
COC	251	266	517	“Our main purpose is to bring reason, integrity and balance to a debate that has become seriously unbalanced, irrationally alarmist, and all too often depressingly intolerant” (Global Warming Policy Foundation, 2009).
AHL	230	153	383	“The Kyoto Protocol, by focusing on attempts to curtail CO ₂ at great cost, will not stop or reverse climate change. It would be better to spend our money on fighting true pollution of atmosphere and surface waters, and on feeding starving children” (Friends of Science, 1998).

Table 2
(continued)

Technique of Neutralization	Freq. Time 1	Freq. Time 2	Total	Example
JBC	0	31	31	“...China emits more CO ₂ in one month (more than 800 million tonnes) than the maximum amount Environmental Protection Agency’s (EPA) proposal will reduce in one year (approximately 550 million tonnes)” (American Coalition for Clean Energy, 2015).

The first technique of interest DOR denies the human impacts on climate change. Organizations adopting the technique acknowledge climate change is occurring, but argue it is the result of other “natural” factors. For instance, in 2006, the US-based Goldwater Institute stated, “There is no doubt that CO₂ is a greenhouse gas that when elevated will act to warm the Earth. However, its levels have fluctuated enormously over the history of the Earth.” Likewise, in 2007, the Australian-based think tank Carbon Sense Coalition adopted DOR stating, “man does not control these global events” (2007: np). This new label is consistent with previous research such as McCright and Dunlap (2000) that argue CCCM organizations adopt these forms of pseudo-science to contradict the scientific consensus.

DOI was operationalized as two separate codes: (1) DOI1, there is no significant harm caused by human actions, and (2) DOI2, there may be some benefits to rising CO₂ emissions. Both techniques indicate an organization accepts that humans are at least partially responsible for climate change, and in the case of DOI2, these changes have positive impacts. For instance, in 2002, Canadian CCCM organization Friends of Science used DOI1, “So-called greenhouse gases constitute about 3 percent of the atmosphere. Of this 3 percent, CO₂ is a minute quantity; water vapor (clouds etc.) amounts to 97 percent.” Humans then bare little responsibility for climate change. The Cornwall Alliance in the document *An Open Letter to the Signers of “Climate Change: An Evangelical Call to Action” and Others Concerned about Global Warming* stated, “Natural causes may account for a large part, perhaps the majority, of the global warming in both the last thirty and the last one hundred fifty years... Human emissions of CO₂ and other greenhouse gases are probably a minor and possibly an

insignificant contributor to its causes” (2000:2). DOI1 then implies that a CCCM organization understands human emissions play a role in climate change, but to neutralize and create resistance to climate action they suggest humans only play a minor role or the injury is not worthy of discussion.

Consistent with previous research (e.g., Dunlap and Jacques, 2013), the technique DOI2 positively frames the impacts of climate change. For example, in 2009, the New Zealand-based branch of Climate Realists contended, “. . .Increasing the amount of CO₂ in the atmosphere increases plant growth rates. . .” (2009: np). In 1998, the US-based American Policy Center positively frames the impacts of a naturally evolving climate stating, “. . .The truth is, someday humans may be able to take tropical vacations at the North Pole – and it will be perfectly natural. . .” (American Policy Center, 1998: np). Similarly, the Ethan Allen Institute contended, “. . .if global warming does occur, it is likely to be beneficial to crops and animal life. . .” (1998: np).

DOV1 supposes that there are no victims of climate change. While the number of organizations using this technique is significantly lower than other techniques, it is still used by CCCM organizations. For example, the Science and Environmental Policy Project contended, “Computer models forecast rapidly rising global temperatures and data from weather satellites and balloon instruments show no warming whatsoever” (1998: np). Similarly, Climate Depot, an offset of the CCCM organization Committee for a Constructive Tomorrow, stated that, “there has not been global warming for over 18 years.”

These findings illustrate that the techniques DOR, DOI1 & 2, and DOV1 mimic scientific arguments providing counterclaims to justify inaction on climate change. CCCM neutralization techniques are another way to label the arguments concurrent with previous research on the CCCM. For example, these four techniques directly adopt the term “denial” to manipulate existing scientific findings and deny the reality of science or general environmental consensus (e.g., McCright and Dunlap 2000; Washington and Cook 2011) in the same way that a deviant adopts justifications in direct contrast to general social norms allowing deviance to take place.

In contrast to the application of “science denial,” the techniques, COC, AHL, and JBC, do not strictly fit this category. These are similar to the group of policy-oriented arguments identified by researchers such as Boussalis and Coan (2016) and Farrell (2016). Rather than relying on science denial, CCCM adopt justifications concerned with domestic and international political economy. For example, the use of COC shifts attention from the “deviant” actor (CCCM organizations) by transferring the deviant label to scientists, environmentalists, and/or other policy actors attempting to address climate change. The Bulgarian-based Institute for Market Economics, for instance, used COC stating, “. . .more and more frequently the movement in question (proclaiming

global warming) is being referred to as religious, since it is based not on facts but on the faith of its followers. . .” (2007: np).

The Mackinac Center for Public Policy stated, “. . .radical environmentalism—which seeks to impose ever bigger government on society—has become the last refuge of many of the world’s socialists. . .” (1992: np). Similarly, the Ghanaian Imani: Center for Policy and Education released a statement criticizing several political actors and environmentalists; “Rather than face up to climate change with reasoned technology, we are engaging in fear mongering and selling ourselves short in the face of limitless solutions our brains can bear” (2007: np). Framing environmentalists as an extreme “religious group” holds negative connotations, condemning those that follow the consensus on climate change. This technique used to equate environmentalism and a problematic ideology is consistent with the work of Antonio and Brulle (2011). The researchers highlighted similar opposition by CCCM organizations noting among the American public, and in conservative media, climate change was often sighted as a “left-wing anti-capitalist conspiracy” (2011:198). Hence, the CCCM transform the image of a deviant to environmentalists, climate scientists, and policy-makers rather than themselves because they are protecting the fossil fuel-based global capitalist economy (see also Dunlap and McCright 2015).

Climate change counter movement organizations also operationalize the technique AHL which emerged in two general forms. The first presents concern for the social and economic development of domestic populations, and the second presents concern for the social and economic development in other parts of the world. For example, the United Kingdom-based Clexit stated, “For developing countries, the Paris Treaty would deny them the benefits of reliable low-cost hydrocarbon energy” (2016: np). Similarly, the Kansas Independent Oil and Gas Association stated, “because fossil fuels provide about 85 percent of the energy used in the US economy, any program that constrains CO₂ emissions will effectively constrain US energy use and result in higher prices and less economic output” (2009:2). CCCM organizations then adopt arguments that accept climate change may be real and needs addressing; however, these actions themselves will cause harm to social and economic development.

Another technique identified in the data was JBC. This technique has appeared in many crime and deviance studies (e.g., Cromwell and Thurman 2003) and is operationalized in this case like a bargaining tool in climate change negotiations both by cross-country and cross-policy action. For example, in 2016, an article on the US CCCM organization American Coalition Clean Coal Energy Web site contended, “. . .China emits more CO₂ in one month. . .than the maximum amount Environmental Protection Agency’s (EPA) proposal will reduce in one year. . .” (np). This statement incorporates JBC by contrasting the EPA’s and Chinese climate policy to justify lesser action on

climate change in the United States. Similarly, the Hudson Institute employed the technique making several comparisons between the United States and other countries climate action plan including China; “In fact, the Beijing deal would see China begin to cut its carbon emissions only after the United States made dramatic cuts to its own emissions first” (2014: np).

JBC along with the techniques COC and AHL are in a sense a form of strategic skepticism; that is, rather than opposition messaging focused on the science of climate change, CCCM organizations adopt arguments that question the legitimacy of policy and certain mechanisms to address climate change by offering alternatives that do not address the wider political and economic factors detrimental to environmental harm.

Second research question asked as follows: Could these techniques of neutralization help us monitor the arguments used by CCCM organizations over time? As highlighted in Table 2, there are some changes over time where 58.8 percent organizations did adopt different neutralization techniques. Table 3 provides only significant cross-tabulation results revealing more information on how this framework can be used to monitor how these arguments changed over time. It reports the frequency and percentage of cross-tabulations for each technique used at time 2 and whether it is influenced by the use or non-use of the same technique at time 1.

The results in Table 3 present all significant results for monitoring change in organizational messaging. All significant results show that employing a technique is often a precursor for employing the same technique in future ($p < .05$); that is, the significant chi-square results show that, with some confidence, employing the technique at one point time is related to employing the same technique at another time. To be clear, CCCM organizations that use a denial tactic at one point in time are likely to use the tactic.

A high percentage of organizations newly adopted COC at time 2 compared to time 1 were 40.3 percent ($p < .05$) of organizations that did not adopt COC at time 1 did so at time 2. A high percentage of organizations that adopted COC at time 1 continued to do so at time 2 (78.6%, $p < .05$), with only 21.4 percent of organizations choosing not to adopt the technique at time 2. This differs, for example, to AHL, where over half of the organizations adopting AHL at time 1 did not use the technique at time 2 (54.4%, $p < .05$), and only a small percentage of organizations did add AHL to their denial tactics (26.1%, $p < .05$).

The results on science-based techniques (DOR, DOI1, DOI2, DOV1) are diverse. For example, there was a 24 percent increase in the number of organizations adopting DOR at time 2 showing a small increase in the percentage of organizations choosing to add DOR to their denial tactics. Thus, despite the growing scientific consensus on climate change, organizations did continue to

Table 3
 Cross-Tabulation Results On Techniques of Neutralization Across Two Points In Time

Denial of Responsibility Time 1		Denial of Victim 1 Time 1							
		No	Yes	Total	No	Yes	Total		
Denial of Responsibility	Freq. (%)	No 206 (76.0%)	Yes 44 (51.2%)	250 (70.0%)	Denial of Victim 1 Time 2	Freq. (%)	No 314 (98.4%)	Yes 35 (92.1%)	349 (97.8%)
Time 2	Freq. (%)	Yes 65 (24.0%)	42 (48.8%)	107 (30.0%)		Freq. (%)	Yes 5 (1.6%)	3 (7.9%)	8 (2.2%)
Total		271	88	357	Total		319	38	357
Chi-Square Tests	19.210*				Chi-Square Tests	6.205*			

Denial of Injury 1 Time 1		Condemnation of the Condemner Time 1							
		No	Yes	Total	No	Yes	Total		
Denial of Injury 1 Time 2	Freq. (%)	No 225 (82.7%)	Yes 53 (62.4%)	278 (77.9%)	Condemnation of the Condemner Time 2	Freq. (%)	No 71 (59.7%)	Yes 51 (21.4%)	122 (34.2%)
	Freq. (%)	Yes 47 (17.3%)	32 (37.6%)	79 (22.1%)		Freq. (%)	Yes 48 (40.3%)	187 (78.6%)	235 (65.8%)

Table 3
(continued)

Denial of Injury 1 Time 1		Condemnation of the Condemner Time 1			
		No	Yes	Total	
Total		272	85	357	
Chi-Square Tests	15.591*				Total
					Chi-Square
					51.558*
					119
					238
					Total
					357
					238
					357
Denial of Injury 2 Time 1		Appeal to Higher Loyalties Time 1			
		No	Yes	Total	
Total		287	19	306 (86.0%)	Total
Chi-Square Tests					Chi-Square
					13.864*
					142
					215
					357
					215
					357
Denial of Injury 2 Time 2		Appeal to Higher Loyalties Time 2			
		No	Yes	Total	
Total		311	45	357	Total
Chi-Square Tests	81.607*				Chi-Square
					13.864*
					142
					215
					357
					215
					357

Notes: * $p < .05$; Degrees of Freedom (df) = 1.

adopt this arguably pseudo-scientific technique. 57.8 percent ($p < .05$) of organizations continued to use the science technique DOI2 again, despite the overwhelming scientific agreement.

The results in both Tables 2 and 3 provide mixed evidence supporting previous studies on the messages used by CCCM organizations over time. First, the finding regarding COC bares similarities with McCright and Dunlap's (2010) analysis of US CCCM organizations. The researchers observed that prior to 1997, these organizations would more likely adopt positions that were "obfuscating, misrepresenting, manipulating a suppressing research results" (p. 111). Since 1997 and after the Kyoto Protocol, additional counterclaims evolved, where CCCM organizations employed messages that became "intimidating or threatening [towards] individual scientists" (p. 114). This might explain why COC did slightly increase at time 2 by .4 percent and 40.3 percent of organizations introduced the technique at time 2. Likewise, these results also bare some similarities with the work of Farrell (2016). He found that over time, CCCM organizations incorporated more policy-oriented or strategic forms of messaging than science-based arguments and these results for the technique COC—although not for AHL—do bare this similarity.

These results do show an increase in the number of certain science-based neutralization techniques corresponding with the findings of Boussalis and Coan's (2016) longitudinal analysis of 19 CCCM organization messages between the years 1998 and 2013. Their analysis revealed a slight increase in the number of science-based arguments adopted by CCCM organizations leading to the conclusion that "the era of science denial is not over" (2016:89). While there are no defined points at time 1 or 2 in this research, the fact that the number of organizations adopting DOR and DOI2 increased does suggest like Boussalis and Coan's that science-based arguments are still used by CCCM organizations despite the overwhelming scientific consensus on climate change. It is also reasonable to assume that the increase in certain science-based techniques may well be in direct response to the prevailing evidence of the climate change consensus (Lewandowsky, Ecker, and Cook 2017).

Lastly, the author conducted simple bivariate correlation results on the techniques of neutralization at time 2 to see whether there were any significant relationships when techniques are used together (see Appendix C); that is, the results indicate that techniques are not treated as mutually exclusive, with bivariate correlations providing information on any significant relationships between certain techniques of neutralization. The author took time 2 because all the data were taken from 1 year (2015).

There are two points to note. One, DOR is positively and significantly correlated with all techniques except AHL and JBC. This suggests it is not simply science-oriented techniques, which are significantly correlated, rather there are

significant correlations between both types of arguments. Similarly, DOI2 was also significantly and positively related to COC ($p < .05$), AHL ($p < .01$), and JBC ($p < .05$). Thus, the positive relationship between the employment of policy-oriented and scientific techniques appears a common strategy used by the CCCM. Again, these significant correlations between CCCM neutralization techniques show preliminary associations that show the complex nature of how multiple techniques are used by CCCM organizations. Moreover, organizations will not simply adopt a strategic or scientific set of arguments. These results align with previous research such as Boussalis and Coan (2016) that highlight the prevalence of multifaceted arguments to construct a narrative of denial.

Discussion and Conclusion

Evidence indicates these organizations adopted one or more of the newly constructed neutralization techniques answering research question one. Often, these neutralization techniques were not mutually exclusive, where on average two or more techniques were used at one point in time. One example is taken from a statement by the US Environmental Literacy Council, the recipient of donor funding from fossil fuel interested organizations (Brulle 2014), combined COC and AHL arguing “Climate change also reveals how difficult it is to separate environmental science from environmental politics. This is not simply to say that people use science for political reasons...The consequences, however we answer that question, might be very great” (1998: np).

The commonality of multiple techniques suggests organizations attempt to appeal to different groups that may respond more favorably to one technique over another. In addition, the purpose of employing multiple techniques may be to reinforce the idea that there are several reasons to resist climate change mitigation strategies. These findings are consistent with previous work on the CCCM that show CCCM organizations adopt multiple arguments to convince the public and politicians to do the same (e.g., Farrell 2016). The reason for this application may be traced to the nature of the organized opposition in climate change denial techniques where, particularly in the United States, there has been a historic campaign to distort the scientific consensus on climate change. The tactic of employing multiple techniques may be a result of historical activity of the movement that culminates in a variety of arguments to frame skepticism and an alternative perspective on climate change. The purpose of which is so the public and/or politicians may also question climate action and adopt a variety of arguments resulting in a lack of support for the scientific consensus and proposed strategies.

By analyzing techniques at two points in time, the data also reveal that organizations did make some changes to the techniques they used. The use of some techniques such as COC increased, while others such as DOI1 declined.

These preliminary findings on change over time do show that neutralization theory can be used to monitor change in organizational messages over time; answering research question two. These changes in social movement messaging are similar to the changing dynamics in messaging used by other social movements. For example, Lim (2012) gives some brief insight into the changing dynamics of the Egyptian uprising in 2011. He notes that the messages adopted by the movement changed over time to improve resonance with a different population effected by specific political, social, and economic characteristics unique to their experiences in Egypt.¹

In a similar way, the CCCM appears to have made some changes to its messaging. However, this particular analysis does not empirically determine why these changes occur. Nonetheless, as discussed above previous work on the CCCM to provide some insight into why these changes may have occurred. For example, Boussalis and Coan (2016) draw tangible links between certain political and economic situations and changing messages of CCCM organization. For instance, they note questions on scientific integrity proposed by CCCM organization emerging shortly following the Climategate era, and this is similar to the technique COC.² Additionally, the author can speculate that other political and economic factors such as the introduction of the Kyoto Protocol in 1997, Climategate, and the 2008 economic crisis may have led to changes in the arguments adopted by CCCM organizations. A future longitudinal analysis using this coding scheme may provide further information on this point. Nonetheless, these initial results indicate that the CCCM use CCCM neutralization techniques dynamically that may be in response to wider social, political, and/or economic factors.

A final point to note on changes over time is the contribution made to understanding Sykes and Matza's original theoretical conception; that is, Sykes and Matza's original techniques have not regularly been employed to understand change over time rather used to understand behavior at one point in time. Answering research question two extends the concept of neutralization theory to illustrate that techniques may be temporal in so far as they are employed and adapted in response to potentially political, social and economic factors. Thus, the application of neutralization theory does not only offer a different and unique perspective on the CCCM, but also its overall contribution to the neutralization theory literature.

It is important to note the content analysis does not reveal the causal order of techniques, a common criticism of research adopting neutralization theory (Fritsche 2005); that is, the author have not established whether neutralization techniques are adopted by CCCM organization prior to or as a reaction to, for example, a specific policy decision such as the UNFCCC Paris Agreement. However, by turning to previous literature on the CCCM the author can offer

some perspective on the forces behind the manifestation of CCCM neutralization techniques.

McCright and Dunlap (2003) commented that the CCCM emerged to neutralize action to address climate change when there is political opportunity to do so. This is because the problem of climate change has created a period of social and political instability whereby addressing climate action will affect the continuous accumulation of capital through production practices that have negative impacts on the environment (Foster 2011). On one hand, society has gained significant evidence as to the severity of climate change and other environmental problems and is developing strategies to reduce this harm. On the other, it has provided the opportunity for an organized group of actors to employ what the author contend are CCCM neutralization techniques to prevent decreases in fossil fuel-based business practices (McCright and Dunlap 2003); that is, because of the rise of environmentalism and support for the reduction in fossil fuels, a fossil fuel-based global capitalist economy is no longer seen as the most appropriate method for development based on the evidenced environmental problems that it has created (Klein 2015). This manifests in a conflict between the consensus to address climate change and challenge the status quo of a fossil fuel-based economy, thus creating the opportunity for this organized group of actors to alter the perceptions of the public using CCCM neutralization techniques to reframe the consensus in an attempt to minimize support for climate action.

The results of the content analysis cannot determine whether CCCM organizations believe the techniques they adopt. In other words, do CCCM organizations believe the basis of these neutralization techniques, or do they accept the evidence and consensus, operationalizing these techniques in the interests of protecting fossil fuel industry actors? Addressing this question is important because the author proposed neutralization theory could be adopted in a harms-based approach in criminology to establish if, in some way, CCCM organizations help frame a denial debate that fails to address environmentally harmful behaviors, particularly the behavior of corporate actors (see also Kramer 2013). To determine an answer to this question, the author look to previous literature on the CCCM.

Broader knowledge on the movement suggests that CCCM organizations have known that human-caused CO₂ emissions are the main cause of climate since as early as 1957 (Center for Environmental Law, 2016). This suggests these organizations accept the scientific consensus but employ CCCM neutralization techniques to protect the interests of fossil fuel and other corporate actors aligned with the perspective of Kramer (2013). The already evidenced donor funding from several fossil fuel and corporate industries to CCCM organizations (Brulle 2014) supports this, suggesting a purposeful strategy to prevent climate action to protect these industry interests. In so doing, may in fact

inadvertently contribute to environmental harm by creating an indifference toward climate action (see also Ard, Garcia, and Kelly 2017 on PAC donations and environmental legislative decision making). While beyond the scope of this paper, a further and similar analysis incorporating the linkages between corporate actors wishing to maintain constant accumulation of capital and CCCM organizations through a deviance lens perspective would further enlighten the research particularly in regard to the concept of the Treadmill of Crime and ecological disorganization.

Moreover, looking closer at the techniques themselves, they suggest these organizations may employ these techniques even though they know that doing so fails to prevent action that could prevent ecological harm. The techniques DOR and DOV1 argue that the science on climate change does not show humans are the cause. The other techniques do acknowledge climate change is real and therefore accept the scientific consensus. Consequently, there is reason to believe that these organizations do accept the wider consensus but adopt these arguments for vested interest groups. Thus, by simply presenting messages in the interests of corporate actors hoping to defend the status quo, may affect policy decision making, it may reduce or prevent climate change action; that is, CCCM inadvertently deliver preventative actions, which would otherwise prevent harmful behaviors. This aligns with Brisman and South (2015:454) who argue that the actions of contrarian scientists; “. . .contribute to increased environmental harm and ‘ecological deviance.’” In other words, if campaigns like the Heartland Institute’s succeed. . . thereby preserving the status quo (i.e., inaction on climate change). . .then environmental degradation and destruction. . .is likely to increase (or, at least, is not abated).”

To justify this conclusion, there is some evidence to suggest that counter movement activity may have influenced public opinion on climate change, potentially leading to less support and urgency to address this challenge. For example, Carmichael and Brulle (2017) articulate the impact of elite cues and the role of the CCCM on US public concern on climate change. They note the association between political worldview following and support a global capitalist economy more strongly expressed through counter movement actors does have a critical impact on climate change concern. Similarly, McCright (2016:77) found that “identification with or trust in groups representing the industrial capitalist system [i.e. CCCM organizations] increases the likelihood of climate change skepticism.” Therefore, this evidenced impact on public perceptions on climate change may as Brisman and South (2015) contend reproduce ideas that preserve the global capitalist economy and at a minimum fail to abate its related environmental degradation.

One way to counter, the use of the technique DOR may be to operationalize arguments relating to the scientific consensus. In particular, more accessible

language of the scientific evidence contrasting with some of the scientific arguments presented by CCCM scientists, which suggest, for example, sun cycles cause natural fluctuations in the climate. A similar action should be taken for those organizations that adopt science-based techniques DOI1, DOI2, and DOV1. According to O'Neill and Nicholson-Cole (2009), it is important for those promoting climate action to not encourage "fear"; that is, "non-threatening imagery" linked to an individuals' everyday emotions appears to be more effective and engaging than those images that spark fear or "hysteria" (2009:369). The techniques COC, AHL, and JBC, are not denial in the traditional definition but focus upon policy-oriented issues to do with climate change. To counter this form of strategic skepticism should highlight how policies addressing climate change are not only in line with mitigating climate changes, but also to the benefits of human populations.

In sum, the author proposed the sociology of crime and deviance could help us understand the arguments used by CCCM organizations that attempt to forestall actions to address these harmful behaviors. Evidence suggests the arguments adopted by CCCM organizations can be labeled as CCCM neutralization techniques. This research then has provided an alternate coding scheme applicable to CCCM messaging the author's hope is it expands the debate on this topic of deviant organizational behavior. This is important if we are to prevent further environmentally harmful behavior's by providing further insight into these oppositional arguments adopted by CCCM organizations that play a vital role in environmental policymaking, influencing public and political attitudes on climate change (McCright, 2008).

ENDNOTES

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¹Based on preliminary structured interviews with members of five different CCCM organizations in 2014 and 2015, the author found that Sykes and Matza's techniques could be adapted and become CCCM neutralization techniques; that is, CCCM organizations use these techniques to (1) challenge the scientific evidence on climate change and (2) reduce or prevent the implementation of strategies to adapt to and mitigate climate changes. The purpose of employing CCCM neutralization techniques is to persuade public and politicians to resist arguments for climate mitigation, which they themselves may later adopt.

²Climategate refers to the illegal release of documents from the Climate Research Unit at the University of East Anglia, one of the main research institutes contributing to the IPCC (Grundmann, 2013). Following the release of these documents, scientists were and continue to be accused of corruption. The CCCM allege they had purposefully ignored the medieval warming period that would reportedly contradict some evidence supporting human-caused climate change (Stoutenborough, Liu, and Vedlitz 2014).

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Appendix A

List of Sources used to Create Aggregated Lists of CCCM Organizations

Name of Source	Source Reference
Heartland Institute, Sponsors of International Conference on Climate Change	https://web.archive.org/web/*/ http://climateconference.heartland.org/
Civil Society Coalition on Climate Change	http://web.archive.org/web/20071225195048/ http://csgcc.info/reports/report_20.pdf
Cooler Heads Coalition	http://www.globalwarming.org/about/

Appendix A
(continued)

Name of Source	Source Reference
Brulle (2014)	Brulle, R.J., 2014. "Institutionalizing delay: foundation funding and the creation of US climate change counter-movement organizations." <i>Climatic Change</i> 122(4):681–694.
Farrell (2016)	"Corporate Funding and Ideological Polarization about Climate Change." <i>Proceedings of the National Academy of Sciences</i> , 113(1):92–97.
Oreskes and Conway (2011)	Oreskes, Naomi and Conway, Eric. M. 2011. <i>Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming</i> . New York, Bloomsbury Publishing USA.
Plewhe (2014)	Plewhe, Dieter. 2014. Think tank networks and the knowledge–interest nexus: The case of climate change. <i>Critical Policy Studies</i> , 8(1):101–115.
McKewon (2012)	McKewon, E. 2012 Talking Points Ammo: The Use of Neoliberal Think Tank Fantasy Themes to Delegitimize Scientific Knowledge of Climate Change in Australian Newspapers. <i>Journalism Studies</i> , 13(2):277–297.
McCright and Dunlap (various dates)	Dunlap, Riley. E and McCright, Arron. M. 2015. Organized climate change denial. In Dunlap, Riley, E and Brulle, Robert (eds) <i>The Oxford Handbook of Climate Change and Society</i> , Oxford: Oxford University Press: 144–160. McCright, Arron.M and Dunlap, Riley. E. 2000. "Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counter-claims." <i>Social Problems</i> , 47(4):499–522. McCright, Arron. M and Dunlap, Riley. E. 2003 "Defeating Kyoto: The Conservative Movement's Impact on US Climate Change Policy." <i>Social Problems</i> , 50(3):348–373.

Appendix A
(continued)

Name of Source	Source Reference
Greenpeace (nd)	www.exxonsecrets.org/
Corporate Europe Observatory	https://corporateeurope.org/news/ funding-climate-change-denial
Mother Jones (2009)	http://www.motherjones.com/environment/2009/12/ climate-deniers-atlas-foundation
Campaign Against Climate Change: Union of Concerned Scientists	http://www.ucsusa.org/global_warming/solutions/ fight-misinformation/global-warming-skeptic.html

Appendix B

Table B1

Mean Number of Neutralization Techniques at Each Data Point.

	Min	Max	Mean	SD
Total number of techniques				
Time 1	.00	6.00	1.9158	1.23692
Time 2	.00	6.00	1.7337	1.24314

Table B2
Total Number of Neutralization Techniques Used at One Point in Time.

	Time 1		Time 2	
	Freq.	Percent	Freq.	Percent
Total number of neutralization techniques				
.00	37	7.8	58	12.2
1.00	128	26.9	138	29.0
2.00	121	25.4	128	26.9
3.00	57	12.0	51	10.7
4.00	36	7.6	25	5.3
5.00	12	2.5	9	1.9
6.00	1	.2	4	.8

Appendix C

Bivariate Correlations For Climate Change Counter Movement Neutralization Techniques in 2015

	DOR	DOI1	DOI2	DOV1	COC	AHL	Other
DOR	1						
DOI1	.193*	1					
DOI2	.215*	.242*	1				
DOV1	.108**	.040	.079	1			
COC	.149*	.091	.124**	.084	1		
AHL	-.012	.121**	.135*	.010	.036	1	
Other	.042	-.027	.113**	-.045	-.076	.067	1

Notes: * $p < .01$ (2-tailed), ** $p < .05$ (2-tailed).

$N = 417$ (48 missing).