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# Online Trolling, Harassment, Misinformation: The Psychological Predictors of Dark Participation

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# ONLINE TROLLING, HARASSMENT, MISINFORMATION: THE PSYCHOLOGICAL PREDICTORS OF DARK PARTICIPATION

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ABSTRACT

ONLINE TROLLING, HARASSMENT, MISINFORMATION: THE PSYCHOLOGICAL PREDICTORS OF DARK PARTICIPATION

by Randy H. Kim

This study aims to examine the reasons why certain individuals engage in “dark participation”, antisocial social participation online involving behavior such as trolling, hate speech, harassment, and spreading disinformation. Online toxicity has increasingly destabilized our ability to engage in socially important discourse online, and trolling has such a strong effect on our environment to the point where the 2016 presidential election was, in part, influenced by online trolls. We theorize that dark participation (DP) will be predicted by high levels of moral disengagement (MD), need for chaos (NFC), and meaninglessness in life (MLN) and self concept clarity (SCC). A series of questionnaires were used to construct these variables, and structural equation modeling was then used to examine the relationship between DP and MLN, SCC, MD, and NFC (N = 163). Participants were recruited from a pool of San Jose State University undergraduates. Data was analyzed for goodness of fit with the latent variable structural model using the *lavaan* package in R. The model demonstrated adequate fitness with the sample data, and indicated that DP is related to MD and NFC. No direct relationship was found between DP and SCC/MLN, although secondary post-hoc models demonstrated a moderating relationship between MLN and DP through MD, as well as a direct relationship between SCC and MLN. This research will help us better understand what drives antisocial behavior online, and from there, what may potentially be done to mitigate this behavior.

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## Introduction

A growing concern in the modern era stems from the misuse of social media. Once thought to be a brilliant new way for people to share news and ideas and connect with each other, social media has grown to be a cesspit of toxicity and incivility. Online harassment and trolling are common occurrences, with up to 41% of people online having experienced harassment before in the past (Duggan, 2017), and misinformation has become more and more of a threat to modern democratic processes, with up to 40% of people now avoiding mainstream news, up from 29% in 2017 according to the Reuters Institute (Newman, 2022). However, not much is known about the psychological factors behind why people would exhibit such antisocial behavior online, a behavior summarized by Thorsten Quandt (2018) as “dark participation”. In this study, we theorize that dark participation may be predicted by a lack of meaning in life, low self concept clarity, moral disengagement online, and a need for chaos, which all come together to influence how much an individual engages in dark participation. We theorized that dark participation may account for a lack of meaning in life and give a basis for an individual to form their identity around. Related to this, a lack of self concept clarity would further drive a dark participant’s need to seek out ways to form an identity. Finally, higher levels of moral disengagement online and a need for chaos may account for why dark participants who are searching for meaning in life are drawn towards becoming a dark participant in the first place.

### Dark Participation

Dark participation, first described as a concept in Quandt (2018), refers to antisocial activities individuals engage in online, and include behaviors such as spreading

disinformation in the form of fake news and conspiracies, cyberbullying, harassment, online trolling, offensive speech and hate speech. Quandt first described dark participation in terms of political participation in the online media landscape. Initially, when online news was first coming into existence, Quandt hoped that this new process would help democratize news and allow greater participation from average citizens. However, this has not come to be, and instead, dark participation, ranging from bored misanthropic trolls to ideologically driven individuals systematically spreading misinformation— fake news— has become more common. In this study, we theorized that subjects who troll more often would have high levels of meaninglessness in life as well as low levels of self concept clarity, since trolling generally involves engaging in behaviors that one does not necessarily believe in. Trolls generally seem motivated by the pleasure of humiliating others online (Buckels et al., 2019), and even though they may espouse highly polarizing statements, trolls generally self-report that they themselves are not actually ideologically motivated. "Trolls don't mean, or don't *have* to mean, the abusive things they say. They get to choose the extent to which their statements match their personal beliefs" (Phillips, 2016, p. 26). Thus, trolls potentially seemed likely to have lower levels of meaning in life and lower levels of self concept clarity, which would help facilitate a troll's ability to switch between any given ideological mask as it serves the need to upset another online. We also predicted that trolls would have a higher level of moral disengagement and that trolls would have a higher need for chaos. In doing so, we hoped to shine additional light on why people without political motivation would engage in dark participation, and potentially also gain some insight into how this type of person comes to be radicalized online.

### *Cyberbullying and Online Harassment*

To measure dark participation, we looked at the different forms it can take. One form of dark participation is cyberbullying. Cyberbullying mirrors bullying in real life, and is defined as "an aggressive intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (Smith et al., 2008, as cited in Grigg, 2010, p. 144). Forms of cyberbullying include online abuse, online intimidation, online isolation, disclosure of a victim's private information, and impersonation of a victim (Menesini & Spiel, 2012).

Cyberbullying is also a very pervasive problem. A national survey in 2017 revealed that 41% of Americans have been personally subjected to harassment online, and 66% of people have observed harassment directed at others (Duggan, 2017). While most of these cases are brushed off as limited to online, 18% of Americans have been subjected to particularly severe forms of harassment, including physical threats, harassment over a sustained period, sexual harassment or stalking (Duggan, 2017).

Being in an online environment helps facilitate cyberbullying. The online disinhibition effect, which shows that people are much more likely to act out more frequently and more intensely than in real life, shows that people change their behavior when in an online context (Suler, 2004). Cyberbullies tend to perceive themselves as anonymous, and most cyberbullying messages are sent in the form of nicknames. Being online also makes it impossible for perpetrators to observe how their behavior affects a victim (Kowalski et al., 2014), where some cyberbullies may have stopped after perceiving how much they have hurt a victim. Harassment behavior is linked to moral disengagement, and moral disengagement

levels are higher when online (Zhao & Yu, 2021). To avoid negative self-evaluation, cyberbullies consider their actions to be less harmful to victims than they have been, or rationalize their behavior saying the victim needed to be punished (Meter & Bauman, 2018).

***Trolling***

Another form of dark participation is trolling. Trolling, first used to describe online behavior in 1992 (Phillips, 2016), is characterized by two factors— a need to behave in a disruptive, destructive manner in an online social setting (typically to bait an emotional reaction), and a seeming lack of any instrumental purpose in trying to be as disruptive as possible (Buckels et al., 2014). Although trolling is commonly confused with cyberbullying, trolling refers to behaviors directed at no particular individual, whereas cyberbullying is targeted at someone or some group (Kowalski et al., 2019). At times a troll may target a user in a forum as a part of trolling, but their intent is not to go after that particular user more so than to cause general havoc. Trolling of all different types is insidiously pervasive in our current society. According to an anonymous survey from YouGov (Kleinmann, 2014), 28% of Americans profess they have engaged in some type of behavior that can be classified under trolling, and that number increases with younger groups, with people born between the early 1980s and the late 1990s being twice as likely to engage in such behavior than groups age 55 and up. In fact, one-third of millennials report trolling behavior. Trolls are also more likely to be male, and trolling is most common in respect to politics as opposed to other topics such as health and gaming (Gammon, 2014).

As we would expect, the Dark Tetrad and trolling are linked. The Dark Tetrad refers to a group of personality traits that are deemed socially undesirable and maladaptive– narcissism,

machiavellianism, psychopathy, and sadism (Chabrol et al., 2015). Of these, psychopathy is the most closely related to antisocial online behaviors (Lopes & Yu, 2017; Moor & Anderson, 2019), and several studies link trolling with increased sadistic tendency as well (March, 2019; Torres-Marín et al., 2022; Türk Kurtça & Demirci, 2022; Wu et al., 2023). One study, for example,  found that trolls perceive more pleasure than average when perceiving others in pain, and that they appear to downplay the magnitude of said pain in order to justify the increased pleasure they felt (Buckels et al., 2019). There is also a moderating effect between trolling and self esteem— individuals with high self esteem alongside trait sadism are further likely to engage in trolling (March & Steele, 2020). Furthermore, trolling appears to be correlated with feelings of boredom, with chronic proneness to boredom associated with sadistic tendencies, and inducing boredom within subjects appears to cause an increase in sadistic tendencies (Pfattheicher et al., 2021). Trolling behavior can be context dependent as well— if a user reports a negative mood and sees troll posts by others, they are much more likely to engage in trolling (Cheng et al., 2017). Higher trolling tendencies are associated with lower agreeableness and conscientiousness, while also being associated with higher levels of extraversion (Buckels et al., 2014). Finally, trolls also tend to possess higher levels of trait aggression (Türk Kurtça & Demirci, 2022).

**Use of Offensive Speech and Hate Speech.** Hate speech is another aspect of dark participation. Hate speech is defined as statements expressing hatred or degrading attitudes towards any given group (Hawdon et al., 2017), and is frequently used in trolling. The most important factor for trolls is the desire for an emotional impact; the goal for trolls is to create

an indignant, strong response within the target. Hate speech rhetoric is particularly useful for this end, as it immediately subverts moral boundaries which most people take very seriously. This also drives why trolls are usually extremely committed to the protection of free speech, and explains their antipathy towards perceived 'political correctness' within mainstream media and tendency to support right-wing narratives as opposed to liberal ideas.

But at the same time, many trolls report that their actions are "apolitical" (Lewis & Marwick, 2017), belying a strange contrast between their charged words and their seeming lack of meaning behind their actions. Although trolling is heavily associated with using racist and misogynistic language, trolls report they only use such language insofar as they have the strongest emotional reaction. As digital culture folklorist Whitney Phillips (2016) writes in her book *This is Why We Can't Have Nice Things*,

> …trolls need their language to contain a kernel of hate. From the trolls' perspective, this is a purely practical point. If the epithets in question weren't politically contentious, they would be useless as trollbait… Racist language might flow through them, but according to many of the trolls I've interviewed, they aren't being racist. They're trolling, which to them is a different thing entirely. (pp. 96-97)

In this way, trolls are not, at least explicitly, motivated by ideological or political goals in their own worldview. Indeed, these individuals often have no goal at all. A successful troll toys with the ambiguity of whether their actions are the results of true extremist sentiment, or merely a way to troll political correctness (Milner, 2013), and due to the anonymity of the subjects, determining the intent of the writer is often impossible. Note, when trolls engage in this type of hate speech, they are engaging in systemic oppression; however, in the worldview of trolls, there *is* a distinction between being, for example, a racist, versus

engaging in racist activities, and this study wishes to characterize whether this distinction in worldview makes a psychological difference.

As much as trolls may espouse that they do not mean what they say, hate speech is known to be harmful for victims and observers. The short and long term consequences of hate speech mimic that of traumatic experiences, and evoke anxiety, stress, lower self-esteem, and depressive thoughts (Leets, 2002). Furthermore, frequent confrontation with hate speech can incite prejudice within bystanders (Hsueh et al., 2015) through desensitization (Soral et al., 2018), reducing prosocial behaviors towards the attacked social group (Ziegele et al., 2018) and aggravating relationships between minority and majority groups (Kteily & Bruneau, 2017). Witnessing online hate speech is positively associated with perpetuating hate speech as well (Wachs et al., 2022). However, despite the research into the consequences of hate speech on victims and bystanders, little is known about the effects of hate speech on perpetrators. There is some evidence that hate speech is gratifying for the perpetrator, as those with sadistic tendencies (Buckels et al., 2019) and sensation seeking behaviors (Wachs et al., 2021) tend to participate more in trolling. Additional research, however, is necessary to fully understand the extent to which hate speech can affect the perpetrator, and even whether hate speech can affect the beliefs of a perpetrator even if they self proclaim that they do not believe in such hateful remarks.

***Misinformation– Fake News and Conspiracies***

Finally, spreading misinformation is a part of dark participation. A fairly recent term in political discourse, fake news refers to intentionally distorting information disguised as journalism (Lazer et al., 2018), or any other fake media such as fabricated images,

misleading headlines, and alternative news outlets (Quandt et al., 2019). Fake news very often overlaps with hate speech, with hate speech much more likely to be present in comment sections about false information (Hameleers et al., 2022). One form of fake news is conspiracy theories, which posit that current or historical events have been manipulated through clandestine activities to serve some ulterior motive. Some examples of conspiracy theories that have been previously studied include the assassination of President John F. Kennedy, the death of Diana, Princess of Wales, 9/11, conspiracies about "chemtrails" (a conspiracy that governments are adding toxic chemicals to the atmosphere), and theories on President Barack Obama's citizenship (Douglas et al., 2019).

When spreading fake news and conspiracy theories, people seem most motivated by the need for certainty and creating a positive image for one's self and one's ingroup (Douglas et al., 2017). People who tend to believe in conspiracies generally report feeling a lack of agency and control and meaning (Kruglanski et al., 2018), and believing in a conspiracy appears to be an act of reclaiming a lowered sense of significance. People tend to fall more easily for fake news that confirms preexisting beliefs (Vegetti & Mancosu, 2020), and people who are more likely to seek out conspiracy theories are also more likely to perceive patterns in randomness, consistently seek meaning in their environments, and are driven to find cognitive closure (Douglas et al., 2019).

Certain personality traits can help explain individual differences in conspiracy belief. Openness and low agreeableness were associated with conspiratorial beliefs, while other studies have found that threatening worldviews, political alienation, and anomie (a lack of purpose or ideal and a perceived breakdown of social standards) also predict such beliefs

(Kruglanski et al., 2022). People who are radicalized also tend to be higher on extraversion, impulsivity, and novelty seeking (Franken & Muris, 2006). Lower levels of education and media literacy predict conspiracy belief as well (Douglas et al., 2019).

Although conspiracy theories are nothing new, with the advent of the Internet and social media platforms they have become easier than ever in history to spread to like minded individuals (Douglas et al., 2019), and according to work done by various scholars, social media has been shown to be fueling the radicalization process (Butters & Hare, 2022; Cinelli et al., 2022; Munn, 2019; Reeve, 2021; Van Swol et al., 2022). Belief in conspiracies can also harm one's well-being, with beliefs in COVID-19 conspiracies being associated with higher levels of depression and anxiety across countries (De Coninck et al., 2021) and a lower willingness to get a vaccine for COVID (Bertin et al., 2020). Belief in conspiracy theories also fuel real world violence. According to a report by Farrell (2022) through the University of Maryland, although global rates of terrorist attacks stayed about the same for 2020, an increasing number of terrorist attacks were fueled by individual conspiracy theory extremists, from 6 cases in 2019 to 116 in 2020.

Many times, the beginnings of conspiracy belief can start as an ironic joke. Current online culture depends on hyper self-referentiality (in-jokes only those who have consistently engaged with online culture can understand) as well as ironic detachment from the online material one sees (Sloan, 2022), and many times online users may start to espouse conspiratorial beliefs as a joke and to troll other people. However, engaging in extremist material online while not believing in such material can activate cognitive dissonance, and people may start to slowly believe in what they are saying as a way to reduce the felt

dissonance. Cognitive dissonance theory states that individuals experience psychological discomfort when faced with inconsistent cognitions, and will take appropriate action to reduce such discomfort (Festinger, 1957). In the case of trolls using conspiracy talking points, they may start to go from ironic use of conspiracies to starting to believe that conspiracies hold some truth.

## Predicted Influences on Dark Participation

### *Meaning/Meaninglessness (Lack of Significance)*

One reason why people are driven to become a dark participant may have to do with trying to gain a sense of meaning in their life. All people have a need to fill meaning in their lives. Meaning in life has been characterized differently by different scholars, with Frankl (2006) equating meaning with being driven by purpose towards future goals, and Baumeister and Landau (2018) adding in concepts such as value, efficacy, and self-worth. Meaning helps regulate goal pursuit (Van Tongeren et al., 2018), while lack of meaning in life is related to increased stress and poor coping behavior (Hooker et al., 2018), as well as a lack of other predictors of psychological well-being such as feelings of self-acceptance, personal growth, relatedness, and environmental mastery (Steger et al., 2008). These feelings can contribute to a desire to find meaning and become significant, but not necessarily in a constructive manner– people with a low sense of meaning and purpose often fill the void with less than healthy behaviors.

As one example, people who tend to believe in conspiracies generally report feeling a lack of agency and control (Kruglanski et al., 2019), and believing in a conspiracy appears to be an act of reclaiming a lowered sense of significance. Conspiracy belief is also tied to low

self esteem, the perception of being within an disadvantaged group, and the feeling of being isolated from society at large. Radicalization also plays into a low sense of meaning. Kruglanski et al. (2018) notes that terrorists and violent extremists are very often motivated by the desire to matter and "be somebody", that is, find some meaning to their existence and feel that they are significant and that their actions have value, and while dark participants are degrees removed from extremism, similar desires tied to wanting significance in their lives may be driving dark participants in their behavior.

In sum, we hypothesized that people who lack personal meaning and significance will be most vulnerable to dark participation. Those with low meaning in life will theoretically engage in dark participation in order to gain a sense of identity and worth by trolling, harassing, and bullying (Kruglanski et al., 2018), or they could even just not feel a need for meaning in life which in turn helps facilitate their malicious behavior. Furthermore, by acting as the most outlandish and radical possible version of their peers, they can gain online status amongst their community, creating a positive feedback loop which may further motivate them to continue dark participation.

***Moral Disengagement***

Another likely factor in dark participation is moral disengagement. Moral disengagement, first proposed by Albert Bandura and colleagues (1996), describes the mechanism by which individuals act in an inhumane fashion without feeling as if they had violated their internal moral standards. Bandura and colleagues proposed that moral disengagement works through seven mechanisms– moral justification, palliative comparison, euphemistic labeling, minimization of consequences, displacement of responsibility, diffusion of responsibility,

dehumanization, and attribution of blame. Of these, trolls are believed to engage in minimization of consequences, in which the harm they have inflicted is downplayed, and as noted above, trolls downplay the pain felt by victims to justify the pleasure they feel (Buckels et al., 2019).

Euphemistic labeling also helps disinhibit behavior further (Diener et al., 1975). Euphemistic labels can take on the forms of memes online, in which unacceptable beliefs can be presented as attempts at humor. One example might be seen in Pepe the Frog, a popular online meme involving an anthropomorphic frog, being co-opted by the Alt-Right until it was listed as a hate symbol on the Anti Defamation League's website (Roy, 2016).

Part of moral disengagement involves diffusion of responsibility, where personal responsibility is obscured by normative group behavior (Bandura et al., 1996). Being online allows for diffusion of responsibility to occur, as users can confer responsibility onto other users (Morgan & Fowers, 2022). Studies show normative beliefs in cyberaggression (i.e. if one believes that cyberaggression is a normal behavior to exhibit) significantly predict both general and prejudiced cyberaggression (Hilvert-Bruce & Neill, 2020). Trolling as we know it is also largely facilitated due to the anonymity the Internet provides. There is a disinhibiting effect when online (Nitschinsk et al., 2022), and witnessing online hate speech and moral disengagement are positively associated with perpetuating hate speech (Wachs et al., 2022). According to March (2019), the Social Identity Model of Deindividuation Effects (SIDE) model appears to be an adequate conceptual model for explaining trolling. In an environment where deindividuation is high, such as online, the SIDE model posits that individuals will be more likely to adopt group norms while minimizing individual norms

(March, 2019). As such, when in an environment where trolling is the norm, individuals are predicted to demonstrate more trolling behavior. This, along with the fact that one-third of millennials profess to having engaged in trolling before (Gammon, 2014), appear to indicate that trolling is a self-reinforcing process by which trolling becomes normalized, leading to people in an online environment to adopt trolling behavior, which in turn further leads to trolling becoming normalized.

***Self Concept Clarity (SCC)***

We also believe that a low level of self concept clarity (SCC) may predict dark participation. SCC is defined as the extent to which an individual's self concept, or perceived personal attributes, are clearly and confidently defined, internally consistent, and temporally stable. SCC is strongly negatively correlated with neuroticism and positively correlated with self-esteem (Campbell et al., 1996). In one study, social anxiety significantly predicted dependence on mobile phone use through the mediating effects of SCC, suggesting that social anxiety lowered SCC and caused adolescents to become dependent on their phones (Kong et al., 2022). People who were more likely to use social media sites passively were also likely to have a lower SCC, which in turn predicted a lower subjective well-being (Lin et al., 2021). Trolling, being an online activity, is also shown to be significantly predicted by increased internet activity (Thacker & Griffiths, 2012). Lower SCC is also linked with feelings of personal uncertainty, which is a known risk factor in driving radicalization (Doosje et al., 2016).

A related metric for SCC comes in the form of one's sense of self. Although related, measures of sense of self put greater emphasis on relational dynamics and having one's

beliefs influenced by one's peers over SCC and was first used in borderline personality disorder (BPD) research. Consistent with the current study, the self concepts of those with higher scores on the dark triad tend to be weaker and less defined (Doerfler et al., 2021), and lacking a clear and stable sense of self is known to undermine empathy (Krol & Bartz, 2022). Researchers report that having a less defined sense of self is related to adolescents experimenting with their self-presentation online more regularly, and presenting an inconsistent self online (Fullwood et al., 2016). Thus, we would expect to see that online users with a lower sense of self might be more inclined to engage in dark participation. We theorize, therefore, that the act of sharing conspiracies or espousing hateful rhetoric one does not believe in could be facilitated by having low SCC, allowing for flexibility in incoherent worldviews and gaining a sense of identity over time.

***Need for Chaos (NFC)***

Finally, dark participation may be driven by a need for chaos (NFC). First proposed by Petersen et al. (2020), NFC is defined as "a desire for a new beginning through the destruction of order and established structures" (p. 9). In their paper, Petersen et al. theorized that a NFC represented one factor why people share hostile political rumors, and further research reported that NFC is also involved in the sharing of conspiracy theories (Farhart et al., 2023). NFC is related to, but distinct from, the Dark Triad of Machiavellianism, psychopathy, and narcissism. Young males are more likely to demonstrate a high NFC than average, as were those with the lowest levels of education. NFC was also more likely to be higher for those who considered themselves to be on the political right than on the left. Furthermore, NFC is also related to an intense desire for social status (Arceneaux et al.,

2021), as individuals, especially those who perceive themselves as marginalized, may view disruption of the social hierarchy as a viable strategy for climbing the social ladder. Notably, NFC may explain why individuals share conspiracy theories, while also not believing in them, using conspiracies as a way to disrupt the current social system (Farhart et al., 2023). We theorize, therefore, that a higher NFC will be positively associated with higher levels of dark participation, particularly in sharing conspiracies.

**Hypothesized Structural Model**

An integrated structural equations model will test all of the following hypotheses (see Figure 1):

H1. Higher levels of meaninglessness will be positively associated with higher levels of dark participation as people with low levels of personal meaning try to seek meaning through dark participation.

H2. SCC will be negatively associated with higher levels of dark participation, as SCC would protect against the cognitive dissonance present while trolling and spreading misinformation.

H3. Since the actions of dark participation are immoral by nature, high levels of moral disengagement will be positively associated with higher levels of dark participation.

H4. High levels of a NFC will be positively associated with dark participation.

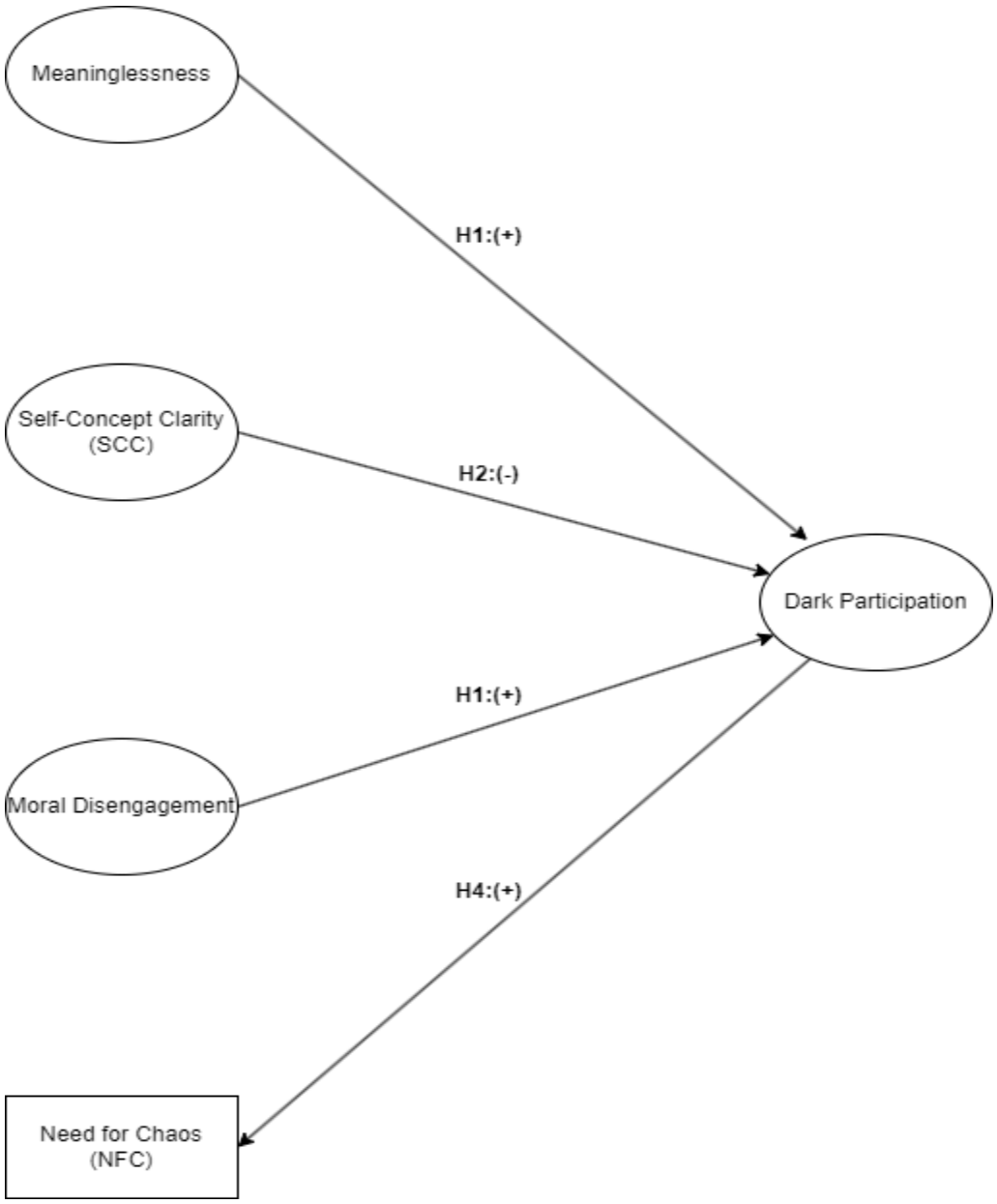


**Figure 1.** Hypothetical structural equation model for current study. NFC, due to being a relatively new proposed concept, will be a directly measured variable instead of a latent variable.

## Method

### Participants

The participants were 174 SJSU undergraduates using the SONA system. The final sample size was *N* = 163 (see Table 1), after 9 subjects were dropped from the study due to incomplete data. The average age of our subjects was 19.3 (SD = 2.21). Young adults as a group are most likely to spend time online, and because we expect time spent online to correlate with dark participation, this group should be fairly useful as a sample.

**Table 1**

*Demographic Characteristics of Sample*

| | SONA Sample (*N* = 163) | |
|---|---|---|
| Gender | *n* | *%* |
| Male | 30 | 18.4 |
| Female | 124 | 76.1 |
| Transgender | 0 | 0.0 |
| Non-binary/non-conforming | 4 | 2.5 |
| Other | 1 | 0.6 |
| Prefer not to say | 3 | 1.8 |
| Missing | 1 | 0.6 |
| Ethnicity/Race | | |
| White/Caucasian | 14 | 8.6 |
| Hispanic/Latino | 56 | 34.4 |
| Black/African American | 6 | 3.7 |
| Middle Eastern | 3 | 1.8 |
| Asian | 65 | 39.9 |
| Pacific Islander | 1 | 0.6 |
| Native American | 0 | 0.0 |
| Multi-ethnic or Mixed race | 15 | 9.2 |
| Other | 0 | 0.0 |
| Prefer not to say | 2 | 1.2 |

| | SONA Sample (*n* = 163) |
|---|---|

| Political Preference | *n* | % |
|---|---|---|
| Extremely liberal | 34 | 20.1 |
| Liberal | 65 | 39.9 |
| Conservative | 10 | 6.1 |
| Extremely conservative | 4 | 2.5 |
| Prefer not to say | 49 | 30.1 |

## Measures

### *Predictors Variables: Meaninglessness*

The latent variable Meaning was measured with three separate scales: Meaning in Life Questionnaire (Steger et al., 2008), the No Meaning Scale (Kunzendorf et al., 1995), and the Existential Meaninglessness Scale (Li et al., 2022) (see Appendix A). The Meaning in Life Questionnaire (MLQ) is a 10 item inventory that uses a 7 point Likert scale that measures how purposeful and valuable one's life feels, with $\alpha = .86$ and a test-retest $r > .6$. The No Meaning Scale (NMS) is an 18 item scale that uses a 4 point Likert scale to assess whether participants feel that life is meaningless or not, with items such as "Any perceived meaning in life is illusory" and "I just don't care about myself any more". The NMS has an $\alpha = .892$. The Existential Meaninglessness Scale (EMS) is a 18 item scale on a 6 point Likert scale, with $\alpha = .94$. Because high scores on the MLQ denote meaning and high scores on NMS and EMS denote meaninglessness, the MLQ items will be reverse scored to make them load in the same direction.

### *Predictor Variable: Self Concept Clarity*

The latent variable SCC was measured by three scales: the Self Concept Clarity Scale (Campbell et al., 1996), the Sense of Self Scale (Flury & Ickes, 2007) and the Awareness of

Narrative Identity Questionnaire (Hallford & Melior, 2017) (see Appendix B). The Self Concept Clarity Scale (SCCS) is a 12 item scale on a 5 point Likert scale, with $\alpha$ = .86 and a test-retest $r$ = .79. The Sense of Self Scale (SOSS) is a 12 items scale on a 4 point Likert scale, with $\alpha$ = .86 and a test-retest $r$ = .83 after two weeks. Since higher values on the SOSS indicate a lower sense of self, the SOSS will be reverse scored to make them load in the same direction as the SCCS. The Awareness of Narrative Identity Questionnaire (ANIQ) is a 20 item scale in a 10 point Likert Scale, with 4 subscales— awareness, temporal coherence, causal coherence, and thematic coherence, and α = .86 ~ .96 within the subscales.

***Predictor Variable: Moral Disengagement***

The latent variable Moral Disengagement was measured via Detert et al. (2008)'s Moral Disengagement scale (MDS), and with Paciello et al. (2020)'s Online Moral Disengagement Scale (OMDS) (see Appendix C). The Moral Disengagement Scale is a 24 item scale with a 5 point Likert scale, containing items such as "Talking about people behind their backs is just part of the game" and "A member of a group or team should not be blamed for the trouble the team caused", with a $\alpha$ = 0.87 . The Online Moral Disengagement Scale is an 8 item scale on a 5 point Likert scale with a composite reliability of 0.81. These scales both use subscales delineated in the original Bandura et al. (1996) paper, which includes moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, dehumanization, and victim attribution. Due to an error, the fifth question in the OMD, "It is right to slander online a person who behaves like a beast (dehumanization)", was left out of the study.

***Predictor Variable: Need for Chaos***

NFC was measured via the Need for Chaos Scale (NFCS) (Petersen et al., 2020) (see Appendix D), which is a 17 item scale on a 7 point Likert scale that has an $\alpha = 0.90$ with items such as "I think society should be burned to the ground" and "I need chaos around me– it is too boring if nothing is going on." Due to the novelty of this predictor variable, no other scales exist as to our knowledge.

***Outcome and Predictor Variable: Dark Participation***

The latent variable Dark Participation was measured by two separate scales (see Appendix E): First, trolling will be measured by Buckels et al. (2014)'s Global Assessment for Internet Trolling (GAIT), a 4 item scale on a 5 point Likert scale with $\alpha = 0.82$. Cyberbullying was measured by the Cyberbullying Perpetration Measure (CPM) by Wong et al. (2014), a 9 item scale on a 4 point Likert scale including items such as "Involved in social groups whose purpose was to tease or insult another person on the Internet" and "Registered an online account using false information to make jokes about another person". The Cyberbullying Perpetration Measure has an $\alpha = 0.9$.

Finally, willingness to share conspiracy theories was examined following research design by Farhart et al. (2023), who presented 6 currently relevant conspiracy theories and asked participants to rate whether they would share the conspiracy on social media on a 4 point scale. The list of conspiracies include 3 democratic and 3 republican conspiracy theories for ideological balance (see Appendix E).

**Structural Modeling**

The proposed model in Figure 1 was tested using structural equation modeling (SEM). Structural modeling is an integrated multivariate statistic allowing for models of simple or complex relationships between independent and dependent variables. In structural modeling, all structural paths represent hypothesized relationships between latent variables which are indirectly measured through the scales being used (i.e. MLQ, SCCS, etc.). SEM consists of two models: measurement and structural. The measurement model represents the relationship between our measurements and the latent (not directly measured) variables. This assesses whether the measured variables associate with and load on a given latent variable. The structural model, on the other hand, represents the relationship between the different latent variables (i.e., constructs; meaninglessness, SCC, moral disengagement, etc.). SEM then, through an iterative process, estimates the most likely path coefficients, and checks to see how well the sample data matrix fits said estimation matrix. The fit between these two matrices are assessed with goodness of fit indices. In our structural model, model fit was assessed using the *Chi-Square test* ($\chi^2$), *CFI* (Comparative Fit Index), *GFI* (Goodness of Fit Index), *NFI* (Normed Fit Index), *NNFI* (Non-Normed Fit Index; also known as the Tucker Lewis Index, *TLI)*, and *RMSEA* (Root Mean Square Error of Approximation). Criteria for a good fit were a $\chi^2$ test < 0.05 or $\chi^2/df$ ratio of 2~3, >.90 on *CFI,* >.95 on *GFI* and *NFI*, and a *RMSEA* of .08 or less (see Table 1). As per Figure 1, there were four latent predictor variables (meaning, SCC, moral disengagement, NFC) and one outcome variable (dark participation). All scales chosen were used due to their high level of internal consistency, with a Cronbach's alpha of $\alpha > 0.8$.

## Results

The means, standard deviations for each variable and their covariances with other variables are presented in Table 2.

**Table 2**

*Descriptive Statistics for All Measured Variables (N = 163)*

| Variable | *M* | *SD* | *median* | *min* | *max* | *range* | *skew* | *kurtosis* | *se* |
|---|---|---|---|---|---|---|---|---|---|
| NoM | 38.91 | 10.55 | 39 | 19 | 69 | 50 | 0.24 | -0.56 | 0.83 |
| EMS-C | 47.58 | 13 | 48 | 18 | 81 | 63 | 0 | -0.52 | 1.02 |
| EMS-A | 48.85 | 14.18 | 49 | 18 | 80 | 62 | 0.12 | -0.59 | 1.11 |
| SCCS | 34.22 | 7.68 | 34 | 18 | 54 | 36 | 0.2 | -0.37 | 0.6 |
| SoSS | 36.87 | 8.23 | 37 | 15 | 59 | 44 | 0.09 | 0.08 | 0.64 |
| MDS-EL | 6.4 | 1.92 | 6 | 3 | 11 | 8 | 0.15 | -0.49 | 0.15 |
| MDS-AC | 5.82 | 2.2 | 6 | 3 | 11 | 8 | 0.3 | -0.95 | 0.17 |
| MDS-DC | 5.52 | 1.98 | 5 | 3 | 11 | 8 | 0.63 | -0.19 | 0.15 |
| MDS-AB | 6.99 | 1.96 | 7 | 3 | 11 | 8 | -0.02 | -0.41 | 0.15 |
| MDS-DEH | 5.66 | 2.21 | 5 | 3 | 12 | 9 | 0.62 | -0.41 | 0.17 |
| OMD | 11.48 | 3.78 | 12 | 7 | 35 | 28 | 1.74 | 7.82 | 0.3 |
| NFC | 18.52 | 5 | 18 | 9 | 37 | 28 | 0.38 | 0.17 | 0.39 |
| GAIT | 6.1 | 2.69 | 5 | 4 | 20 | 16 | 1.79 | 4.46 | 0.21 |
| CPM | 10.78 | 3.26 | 10 | 9 | 36 | 27 | 4.28 | 24.54 | 0.26 |

### Predicted Model

A structural model, using maximum likelihood (ML) estimation procedure in the *lavaan* package of R was tested for the hypothesis that meaning, SCC, moral disengagement, and NFC would predict dark participation.

Assumptions were tested with univariate and multivariate tests of normality were conducted with mixed results. The Mardia test indicated non-normality of the data (Mardia skewness $p < 0.001$; kurtosis $p < 0.001$), but the Shapiro-Wilks test of univariate normality showed mixed results, with some of the variables meeting the normality assumptions (e.g.

MLQ, EMS, SCSS), while others did not (e.g. NoM, ANIQ, NFC, and all dark participation scales). SEM is fairly robust, however, to these violations, so no data transformations were performed. The determinant of the matrix was positive. Before the structural model can be tested, the measurement model has to be tested for goodness of fit. Table 3 lists how good and acceptable levels were determined.

**Table 3**

*Goodness of Fit Indices and Thresholds*

| Test Name | Good Fit | Acceptable Fit | Source |
|---|---|---|---|
| Relative Chi-Square ($\chi^2$/df) | <3.00 | <5.00 | Marsh and Hocevar (1985)<br>Joreskog & Sorbom (1993) |
| Comparative Fit Index (*CFI*) | 0.95 ≥ 0.90 | ≥ 0.90 | Bentler (1990)<br>Hu & Bentler (1999) |
| Adjusted Goodness-of-Fit Index (*AGFI*) | ≥ 0.90 | > 0.80 | Hair et al. (2010)<br>Hooper et al. (2008)<br>Schumacker & Lomax (2004) |
| Non-Normed Fit/Tucker-Lewis Index (*NNFI/TLI*) | 0.95 ≥ 0.90 | ≥ 0.90 | Bentler & Bonett (1980)<br>Tucker & Lewis (1973) |
| Root Mean Square Error of Approximation (RMSEA) | 0.06 ≤ 0.08 | 0.08 ≤ 0.1 | Browne & Cudeck (1993)<br>MacCallum et al. (1996) |
| Chi-Square ($\chi^2$) | Low $\chi^2$ relative to degrees of freedom with p-value < 0.05 | | Bamdad et al. (2023)<br>Setiawan et al. (2021) |

The measurement model with 12 measured variables on 4 latent variables provided a borderline fit ($\chi^2/df$ = 2.69; *AGFI* = 0.83; *CFI* = 0.92; *NNFI* = 0.89; *RMSEA* = 0.102). Some of the measurements indicated that the model fit well with the data (CFI > .90), while others indicated a mediocre fit (*AGFI* and *NNFI* <0.90; *RMSEA* > 0.06).

Moving to the structural model, the initial model, predicting direct paths between dark participation and meaning, SCC, moral disengagement, and NFC, did not have a high fit with

the data ($\chi^2/(48) = 3.90$; *AGFI* = 0.75; *CFI* = 0.83; NNFI = 0.77; *RMSEA* = 0.133) (see Table 4)

**Table 4**

*Fit Indices for All Examined Models*

| Structural Model | $\chi^2$ | $\chi^2$/ *df* | *AGFI* | *CFI* | *NNFI* | *RMSEA* |
|---|---|---|---|---|---|---|
| Hypothesized Structural Model | <0.001 | 2.86 | 0.790 | 0.876 | 0.841 | 0.107 |
| Post-hoc Structural Model | <0.001 | 2.79 | 0.794 | 0.877 | 0.847 | 0.105 |
| Second Post-hoc Structural Model | <0.001 | 2.75 | 0.797 | 0.878 | 0.850 | 0.104 |

Due to the not quite acceptable fit of the original predicted model, we attempted to improve the original model fit indices by eliminating items with non-significant path coefficients. The MLQ, ANIQ, and conspiracy measurement variables were removed for having a path coefficients below .40 (MLQ $\beta = 0.3$; ANIQ $\beta = 0.22$; Conspiracy $\beta = -0.19$). Also, the EMS scale was divided into its subscales measuring existential meaninglessness concern and existential meaninglessness anxiety for an additional measurement variable as three or more measurement variables per latent variable is optimal. Similarly, the MDS was divided into its component subscales, moral justification, euphemistic labeling, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, dehumanization, and victim attribution, and the measurement model was examined for how well each subscale loaded onto the latent variable of moral disengagement. Of these, moral justification (MJ), diffusion of responsibility (DIFR), and displacement of responsibility (DISR) were removed for having a path coefficients of below <.40 (MJ $\beta = 0.38$; DIFR $\beta = 0.31$; DISP $\beta = 0.25$). The newly created structural model is shown in Figure 2.

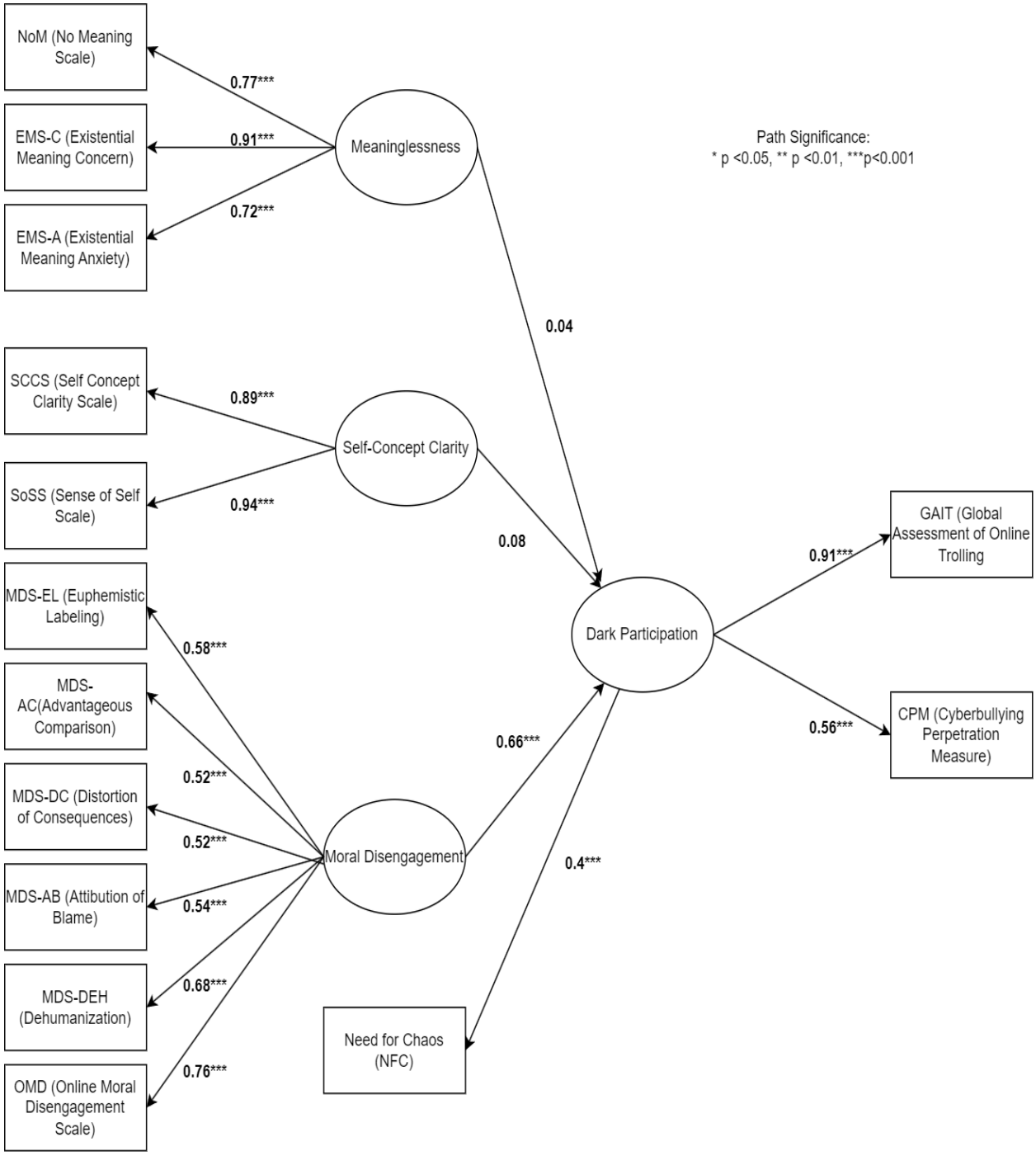


**Figure 2.** Improved hypothesized SEM model results. Low path coefficients were dropped. MLQ and SOSS are reverse coded so items load in the same direction.

All path coefficients were above .4 after these changes (see Table 5). The measurement model with 14 measured variables on 4 latent variables provided a better fit ($\chi^2 < 0.001$; $\chi^2/df = 1.97$; *AGFI* = 0.84; *CFI* = 0.94; *NNFI* = 0.92; *RMSEA* = 0.077), with the $\chi^2$ test, *CFI*, and *NNFI* indicating good fit. However, the *RMSEA* still indicated a mediocre fit of the data for the measurement model.

**Table *5***

*Standardized Parameter Estimates of Hypothesized Model*

| Construct | Indicator | Standardized Estimated Path Coefficients | Error |
|---|---|---|---|
| Dark Participation | GAIT | 0.912 | 0.061 |
| | CPM | 0.563 | 0.065 |
| Meaninglessness | NoM | 0.772 | 0.037 |
| | EMS-C | 0.914 | 0.024 |
| | EMS-A | 0.721 | 0.043 |
| Self Concept Clarity | SCCS | 0.892 | 0.024 |
| | SOSS | 0.941 | 0.021 |
| Moral Disengagement | MDS-EL | 0.576 | 0.061 |
| | MDS-AC | 0.522 | 0.066 |
| | MDS-DC | 0.523 | 0.066 |
| | MDS-AB | 0.537 | 0.065 |
| | MDS-DEH | 0.676 | 0.053 |
| | OMD | 0.765 | 0.045 |

*Note.* All path coefficients were significant at $p < .001$

The altered structural model had a mediocre fit with the model ($\chi^2/(71) = 2.86$; AGFI = 0.79; CFI = 0.88; NNFI = 0.84; RMSEA = 0.107), but the fit indices did indicate that this new model was an overall better fit of the data (see Table 3).

The paths between dark participation and meaninglessness, as well as dark participation and SCC were not significant, and had a very low effect size (meaninglessness $\beta = 0.035$, $p = 0.823$; SCC $\beta = 0.079$, $p = 0.598$). The path between dark participation and moral disengagement were significant ($\beta = 0.657$; $p < 0.001$). The path between dark participation and NFC was also significant ($\beta = 0.403$; $p < 0.001$).

**Post-Hoc Models**

After proposing the tested model and thinking more about the possible structural relationships between the latent variables, we developed two exploratory post-hoc models. First, we examined a model in which SCC and meaninglessness are associated with moral disengagement to indirectly affect dark participation. Second, we proposed another model in which SCC is associated with meaninglessness, which associates with moral disengagement, which in turn predicts dark participation.

This first post-hoc model had a similar, if slightly improved fit as our initially proposed model for the data ($\chi^2/(73) = 2.79$; *AGFI* = 0.79; *CFI* = 0.88; *NNFI* = 0.85; *RMSEA* = 0.105), with slightly greater *AGFI, CFI* and *NNFI* and a slightly lower *RMSEA*. Notably, this model captures the fact that meaninglessness has a positive association with moral disengagement ($\beta = 0.419$; $p = 0.024$), something that was missing from our hypothesized model (see Figure 3). SCC, however, was indicating that it was not directly related to moral disengagement ($\beta = 0.05$; $p = 0.803$).

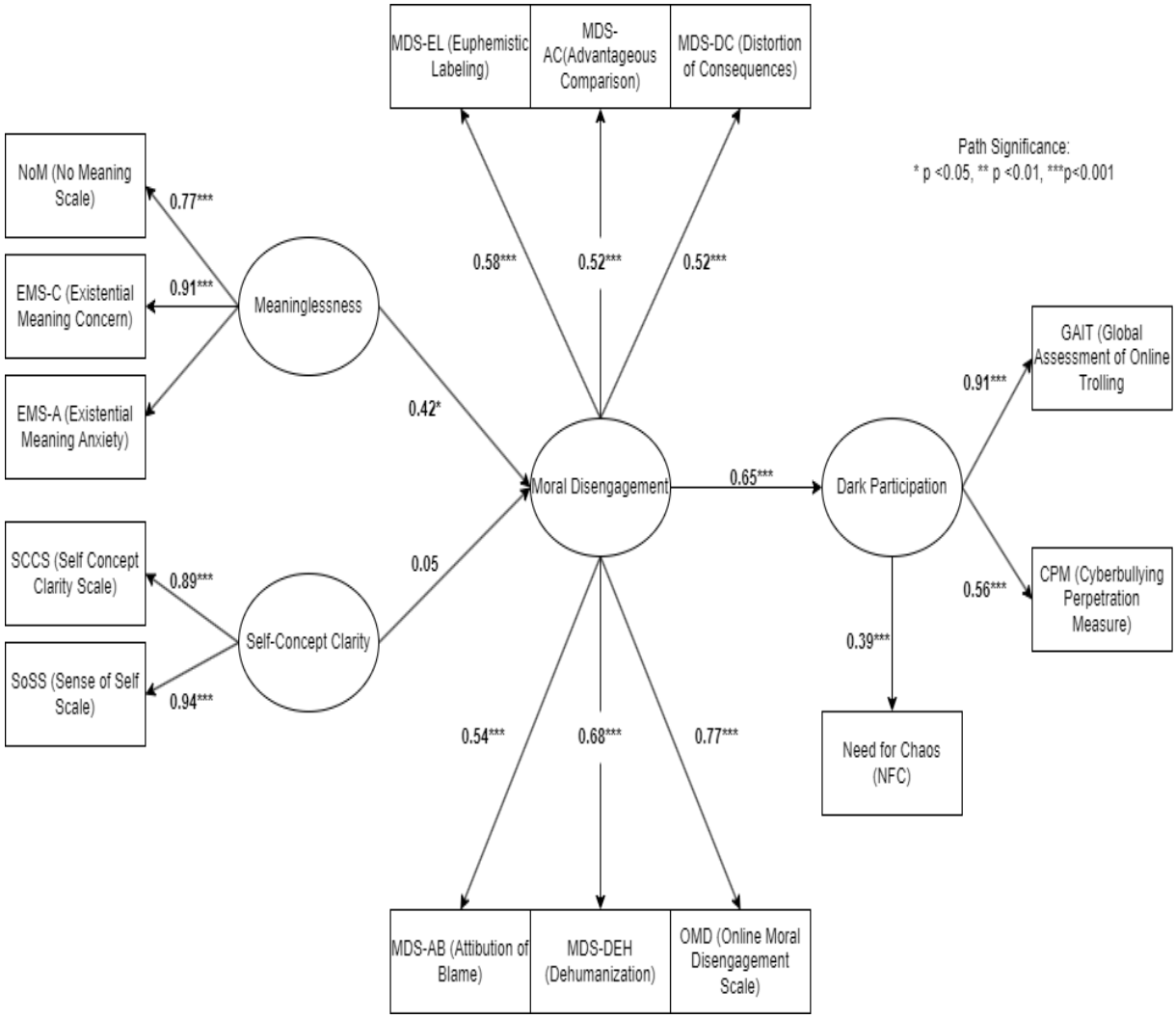


**Figure 3**. First post-hoc structural model.

The second post-hoc structural model also had a very similar fit to our other models, but there was a slight improvement when compared to both our initial model and first post-hoc model ($\chi^2/(74) = 2.75$; $AGFI = 0.80$; $CFI = 0.88$; $NNFI = 0.85$; $RMSEA = 0.104$). In this model, we can see that low SCC directly influences meaninglessness ($\beta = -0.83$; $p<0.001$); meaninglessness in turn directly affects moral disengagement ($\beta = 0.38$; $p < 0.001$), which

finally affects dark participation ($\beta$ = 0.65; $p$ < 0.001) (see Figure 5). This model suggests that since SCC has a large negative coefficient with meaninglessness ($\beta$ = -0.829; $p$ <0.001), SCC can be an indirect influencer of moral disengagement with meaninglessness as a potential moderator (see Figure 4). The fact that SCC and meaning are related is known within the literature (Blazek & Besta, 2012; Cebi & Demir, 2022; Mai et al., 2023), so this post-hoc model replicates results in the literature.

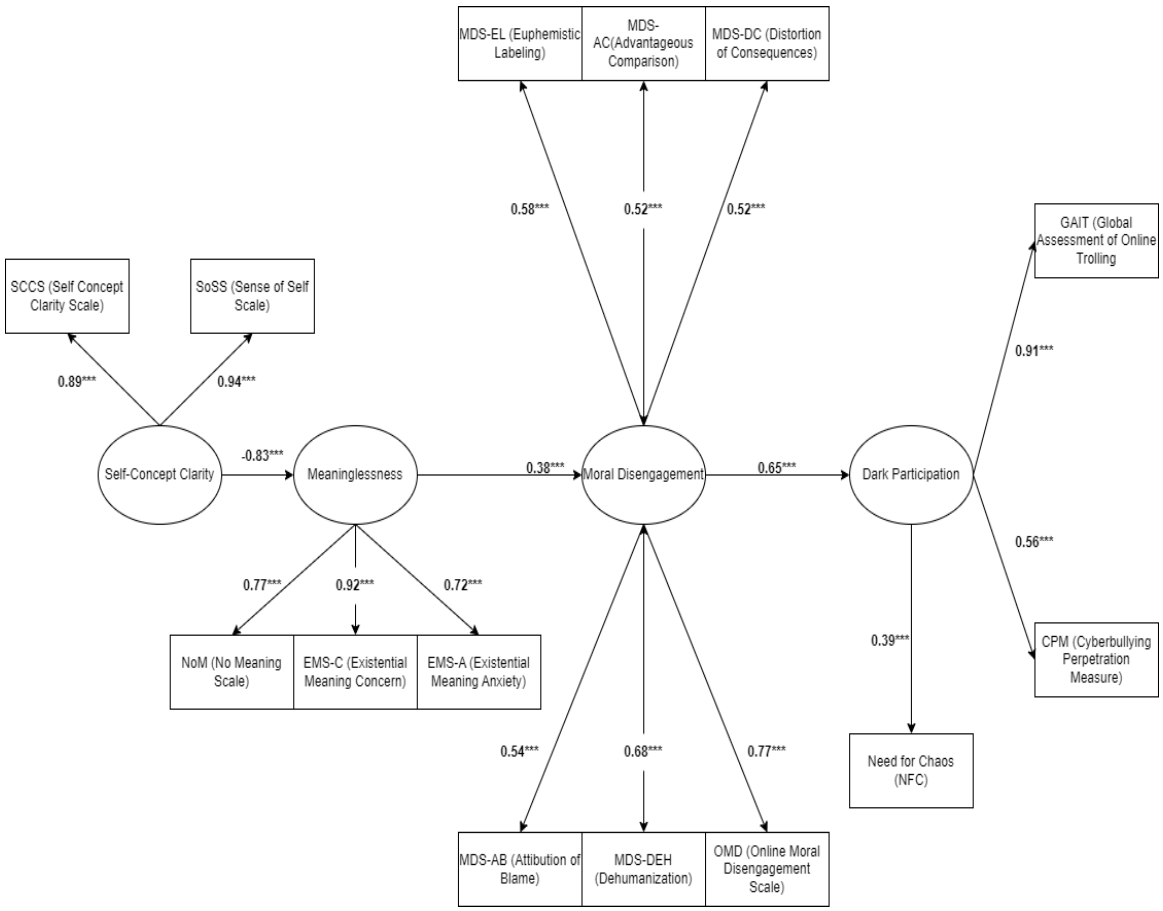


**Figure 4**. Second post-hoc structural model.

## Discussion

By examining the relationship between meaning, SCC, moral disengagement, and need for concept with dark participation, our study was able to replicate findings that moral disengagement are associated with higher levels of trolling behavior (Saulnier & Krettenauer, 2023; Wu et al., 2022) as well as cyberbullying (Meter & Bauman, 2018; Zhao & Yu, 2021). We were also able to demonstrate for the first time that a NFC, first introduced by Petersen et al. in 2020, is also associated with dark participation online. In their paper, Petersen et al. focused on NFC as it relates to conspiracy sharing, but here we also link NFC with cyberbullying as well as trolling.

Unfortunately, some of our items were not directly related to dark participation. Our latent variables of meaninglessness and SCC were found to not directly relate to dark participation, although post-hoc analyses of the data did find that SCC negatively associated with meaninglessness and that meaninglessness positively associated with moral disengagement, demonstrating that moral disengagement potentially moderates the relationship between meaninglessness and dark participation; in other words, an individual can experience meaninglessness in life, but that does not necessarily mean that they will be morally disengaged when interacting with others online. However, if they *are* morally disengaged, then they are more likely to engage in dark participation.

The fact that SCC does not directly associate with dark participation may be due to the fact that our measures were confounding two different types of trolls. Some studies in the literature note that there may be at least two distinct types of people who engage in dark participation— the strategic manipulator who "serves an ideological, political, or religious

goal" (Quandt & Festl, 2017, p. 3), and the malicious participant who simply enjoys causing chaos. In their analysis of hate speech in Slovenia, Erjavec and Kovačič (2012) identified several different groups of key producers of hate speech, which they named the Soldiers, Believers, and Players. Soldiers and Believers align with the description of the strategic manipulator, being ideologically motivated to fight for some cause. Soldiers are people who were active in a political party or a nationalist organization, while Believers, although not associated with an organization, had self organized to defend their political interests and attack their perceived enemies, mirroring the Alt-Right movement as we see it today. On the other hand, Players had no clear values or beliefs, and simply enjoyed humiliating others online, viewing hate speech as a game played in an online community. The Player acts as such due to what Quandt (2018) calls "authentic evil" — driven by either misanthropic hatred of others or by the pleasure they feel in making others suffer. Our study wanted to focus on only the Player, who we assumed would have low levels of SCC due to the fact that they frequently engaged in roleplaying as a person online who held whatever belief would cause the most anger in a given situation. However, if our study was also capturing the other type of troll, the Soldier/Believer, we would assume these strategic manipulators would actually score high on SCC, given that they are highly focused on an ideology they wish to serve. Future studies may want to try and develop scales that would be able to distinguish between these different groups of people, which may change our results.

There may also be the fact that trolls may have high SCC due to the fact that they strongly identify with online culture as a whole. A large part of trolling culture is within the ironic and hyper self-referential nature of online internet spaces, where frequently only those

who are “in on the joke” are able to comprehend what users are talking about (Sloan, 2022). This may be something that boosts SCC instead of lowering it, and may be something to consider in future study. Also, because there are some concerns that the effects seen within SCC are due to self-esteem, and self esteem has been shown to correlate with SCC up to $r$ = .70 (DeMarree & Bobrowski, 2017), future studies should ensure that any measure of SCC is not just measuring self esteem instead. There have been studies in the past that have found that individuals with high levels of self esteem, alongside a high level of trait sadism, demonstrate higher levels of online trolling than average (March & Steele, 2020), indicating that if our measures of SCC are being conflated with self esteem, that may confound our results.

We also had other measures we used that failed to load into our latent variables, such as the MLQ for meaninglessness, the ANIQ for SCC, and conspiracy measures for dark participation. The fact that the MLQ did not relate to the NoM and EMS may be due to the fact that the MLQ measures a different dimension of meaning from the NoM and EMS. George & Park (2016) suggests that meaning has three dimensions— comprehension (the sense that one’s life is understandable and coherent), purpose (the sense that one is working towards a valuable goal), and mattering (the sense that one’s existence is significant to the world). They suggest that current work done on studying meaning has been too univariate in modeling meaning, and this may explain why the MLQ did not relate strongly to the NoM and EMS; the MLQ may be measuring one of the three dimensions more highly than the others while the NoM and EMS measure a different dimension. Future research may have to examine the multidimensionality of meaning more carefully and consider whether there is a

specific sub dimension of meaning that is attributable to higher levels of moral disengagement, using measures such as the multidimensional existential meaning scale (MEMS; Park et al., 2021). The ANIQ also did not cohere with SCC, and the fact that our model only has adequate fit may also be due to the fact that our SCC measures only have two measured variables after removing the ANIQ. Although we thought that subscales in the ANIQ, such as the thematic coherence subscale, would cohere with SCC, this was not the case, so a different measure of SCC may be useful in the future.

**Limitations**

The fact that our conspiracy sharing measures did not cohere with dark participation surprised us in particular, especially considering how conspiracy sharing is a key part of dark participation as outlined by Quandt (2018). One reason may be due to the fact that the SJSU population tends to be very liberal, which is a limitation of our study. As seen in our demographics (see Table 1), close to 60% of our sample identified as liberal or extremely liberal, as opposed to only 8.6% identifying as conservative. Considering that previous studies focused particularly on the fact that those who vote conservative tend to spread conspiracies (Arceneaux et al., 2021), this may bias our data. Our measurement may also be too outdated; the conspiracy sharing measure as designed by Farhart et al. (2023) asked popular conspiracy theories on both sides of the political spectrum, but the metric also assumed some degree of familiarity with the conspiracy subject matter, which may have affected the data, especially when examining apolitical individuals within our subject pool. Considering how young our subject population is (M = 19.3), they may simply not know about these older conspiracies (as an example, our scale uses events in Benghazi, Libya

during 2012 as one conspiracy. The average age of our sample then would have been 7 years old and highly likely to not remember these events). Another reason why conspiracy failed to load onto dark participation may also be due to the fact that the real life conspiracies used in the Farhart et al. (2023) scale were not appealing to individuals who are more likely to be trolls. Considering that one of the main motivations of trolls is in finding hilarity in their misbehavior, it may be the case that the type of conspiracies that trolls like to spread now are different from the conspiracies in the past— greater, more outlandish. Past conspiracies may be too normalized and therefore boring to trolls now, and updating the conspiracies used to be more current may be useful (an example of a current conspiracy might be PizzaGate, which posits that a pizza restaurant in Washington, DC was actually the grounds for a Democrat based child sex trafficking organization).

Finally, one other reason may be simply that conspiracy sharing behavior is not related to trolling and cyberbullying. As to our knowledge, dark participation has mostly been studied from a communications studies perspective, and no statistical validation has been made to see whether trolling behavior and cyberbullying are related to conspiracy sharing. Further research and replications are necessary to examine the relationship between conspiracy sharing and dark participation.

One other noteworthy limitation of our study was that our sample was heavily biased towards those identifying as female, at 76% (see Table 1). The fact that our sample had way more females than males may cause issues in our data, especially since behaviors related to dark participation are known to be perpetrated more commonly by males due to the generally higher levels of aggression found in males than females (Arceneaux et al., 2021; Craker &

March, 2016; Gammon, 2014; Howard et al., 2019). The reason for this sample bias may be due to the fact that psychology as a major is more popular with females than males at SJSU (College Factual, 2024). This heavily limits the generalizations that can be made from our results. A sample that has a more representative ratio of males and females may indicate different results than we found in this study. Also, we examined a general population of students, but recruiting only those who self-identity as trolls may prove fruitful and give data that better fits our hypotheses.

**Implications**

Our findings shine additional light on what motivates dark participation online, and in turn, what may be done to help make online spaces better suited for fruitful discussion. Considering the ongoing division between political spectrums (Pew Research Center, 2022), the need for reducing toxic discourse online has never been greater. We have found that those trying to sow discord are motivated by an amoral attitude and NFC, and social media websites will do well to understand how to make sure people with such inclinations do not have wider outreach. A huge part of online toxicity is due to the fact that such behavior is currently expected of online culture (March, 2019), and changing the culture to become more constructive will take time. Making online environments less morally disinhibiting may prove to help ameliorate toxicity and help mend divisions across the political spectrum.

**Future Direction**

Although our study demonstrates some psychological reasons why trolls engage in dark participation, it does not explain how an individual comes to become a dark participant in the first place. This radicalization phenomenon can be seen in the rise of the Alt-Right

movement back in 2015, where a plethora of individuals online went from apolitical agents to actively involved in dark participation against what they viewed as an unjust society, even contributing to the results of the 2016 election in America (Lewis & Marwick, 2017). This behavior is fundamentally different from trolls in the past, who were much more aligned with the malicious participant who viewed trolling as a game (Phillips, 2016). Tracing how radicalization occurs in individuals online may help us understand how to stop individuals from becoming disruptive to democratic processes. It may be the case that Players, mentioned above, initially engage in trolling for pleasure, but start to become Soldiers/Believers through repeated exposure and participation in hate group ideology, turning their parody of extremism into reality. We hypothesize that those with lower levels of SCC and are heavily online may be most vulnerable to radicalization whereas high SCC individuals would not become radicalized, and a longitudinal study examining chronically online individuals and their political alignment may be a useful study in the future. Related to this line of study, future research could examine how desensitization to online toxicity may, over time, explain how individuals fall into dark participation.

Another line of research that may be useful in the future is in examining how ironic humor online may relate to dark participation. A very, very large part of online culture has to do with hyper self-referentiality within itself and ironic detachment from the content of any given post (Sloan, 2022). This sense of ironic detachment is highly pervasive in online spaces, and social media users have created a term for those users who have become too chronically online to the point where their ‘ironic’ posts are no longer jokes but truly what they believe– irony poisoning. To be ‘irony poisoned’ refers to individuals who have taken

the ‘ironic’, inconsequential online activity and blurred their ideals with reality. “To acknowledge both their addiction to the internet and the mind-warping effects of that dependency, a subset of Extremely Online millennials frame their issue as an illness. The disease goes by a variety of names, though “irony poisoning” is recognized as the classic diagnosis” (Klee, 2018). Users understand that they have been online to the point of harming their own mental health, and joke about their problem. In the context of trolls and dark participants, irony poisoning refers to individuals who have been engaging in extremist ideology ‘ironically’, until there is no functional difference between an ‘ironic’ extremist and a ‘sincere’ extremist. It could be that they believe that they act as an extremist, or that they truly believe in the extremist ideals they espouse; at this point, the distinction matters not. Irony poisoning as described appears to closely resemble psychological defense mechanisms such as denial and rationalization, in which the poisoned user detaches from their statements. As such, we theorize that irony poisoning is closely related to cognitive dissonance mechanisms, and the methods by which the described detachment turns into real behaviors follow a dissonance reduction process. Due to the novelty of this concept, we did not use it in our analysis, but future research should carefully evaluate the state of online culture and how that may affect the mental state of users.

**Conclusion**

This study intended to look at some of the reasons people engage in online dark participation. In doing so, this study hopes to illuminate future paths in which to help facilitate online discourse and reduce the toxicity of the online environment so that greater collaboration can be achieved. If these results replicate, it suggests that the keys to

understanding dark participation rest in moral disengagement and NFC. Moreover, if the post-hoc exploratory finding that meaninglessness is a strong predictor of moral disengagement, then we will have a fuller understanding of the psychology of dark participation. As the recent documentary *The AntiSocial Network* (Angelini & Jones, 2024) reveals, dark participation has been behind some of the most disruptive political movements over the last 10 years of so (QAnon, the 2016 election, and the January 6th Capitol riots). Therefore, understanding and ultimately mitigating dark participation is not just of theoretical concern but more importantly of real world political implications.

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## Appendices

### Appendix A

Meaninglessness Measurement Scales (MLQ, NoM, EMS)

**Meaning in Life Questionnaire**

**MLQ**

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Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

| Absolutely Untrue | Mostly Untrue | Somewhat Untrue | Can't Say True or False | Somewhat True | Mostly True | Absolutely True |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1. _____ I understand my life's meaning.
2. _____ I am looking for something that makes my life feel meaningful.
3. _____ I am always looking to find my life's purpose.
4. _____ My life has a clear sense of purpose.
5. _____ I have a good sense of what makes my life meaningful.
6. _____ I have discovered a satisfying life purpose.
7. _____ I am always searching for something that makes my life feel significant.
8. _____ I am seeking a purpose or mission for my life.
9. _____ My life has no clear purpose.
10. _____ I am searching for meaning in my life.

Presence = 1, 4, 5, 6, & 9—reverse-coded

Search = 2, 3, 7, 8, & 10

**No Meaning Scale: NoM**

Please rate each statement below, by circling one of the ratings 1-4. Circle '1' if you strongly disagree, '2' if you mildly disagree, '3' if you mildly agree, or '4' if you strongly agree.

1 2 3 4 It does not matter whether I live or die.

1 2 3 4 The fact that I shall die and be forgotten makes my life seem insignificant.

1 2 3 4 The possibility that death may terminate my awareness of having ever existed at all makes my existence seem meaningless.

1 2 3 4 My place in the universe is like that of an insignificant speck of dust.

1 2 3 4 Life has no meaning or purpose.

1 2 3 4 Any perceived meaning in life is illusory.

1 2 3 4 All strivings in life are futile and absurd.

1 2 3 4 The likelihood that I shall be remembered by no one in two hundred years makes my current life seem unimportant.

1 2 3 4 All suffering is pointless.

1 2 3 4 Life is a cruel joke.

1 2 3 4 Heroic deeds stem from the delusion that they are meaningful and significant.

1 2 3 4 Life is filled with one absurd loss after another.

1 2 3 4 Taking care of one's health is pointless, as it will not avert one's rendezvous with death.

1 2 3 4 To perpetuate life by having children of one's own IS merely to perpetuate absurdity and loss of life.

1 2 3 4 When you really think about it, life is not worth the effort of getting up in the morning.

1 2 3 4 Whenever I have experienced loss (of a deceased relative, or an estranged lover, or a squandered opportunity), I felt that life lost some of its meaning for me.

1 2 3 4 I just don't care about myself any more.

1 2 3 4 There is no sense in feeling hopeful about the future because, in the end, death robs life of all meaning anyway.

---

**Existential Meaninglessness Scale**

**EMS**

*Instructions*: The following are a series of concerns, some of which may apply more to your life than others. You will rate each concern twice. First, rate the extent to which the concern is **true of your life**. Second, rate the extent to which you **feel anxious** about the concern. It is possible that a concern may be very true in your life, but you may not feel anxious about it. On
the other hand, a concern may only be somewhat true of you, but you may
feel extremely anxious about it.
In your ratings of how anxious you feel about a concern, focus on how you **truly feel** rather than on how you would feel in a hypothetical scenario. We ask you to **click on every response option** to indicate your valid response.

How true of you

| Absolutely Untrue | Mostly Untrue | Somewhat Untrue | Somewhat True | Mostly True | Absolutely True |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 5 | 6 | 7 |

How anxious you feel about this concern

| Absolutely Untrue | Mostly Untrue | Somewhat Untrue | Somewhat True | Mostly True | Absolutely True |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 5 | 6 | 7 |

1. I can’t make sense of the things that happen in my life.
2. I can’t understand my life.
3. I’m confused about why things happen in my life.
4. Looking at my life as a whole, things don’t seem clear to me.
5. My life is filled with random events with no explanation for why things happen.
6. The events in my life feel disconnected.
7. I lack higher goals that guide me in my life.
8. I don’t have a purpose in life that keeps me going.
9. I lack direction in my life.
10. I can’t identify anything important for me to strive toward.
11. I don’t know what I’m trying to achieve in my life.
12. I’m living life without an objective.
13. Even a thousand years from now, it wouldn’t matter whether I existed or not.
14. I don’t believe my existence matters in the universe.
15. My life is of no worth to this world.
16. I feel like my life is insignificant in the grand scheme of things.
17. My existence does not make a difference to the world.
18. Considering how big the universe is, my life doesn’t matter.

**Appendix B**

Self Concept Clarity Scales (SCCS, SOSS, ANIQ)

**Self-Concept Clarity Scale**

**SCC Scale**

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1. My beliefs about myself often conflict with one another.[a]
2. On one day I might have one opinion of myself and on another day I might have a different opinion.[a]
3. I spend a lot of time wondering about what kind of person I really am.[a]
4. Sometimes I feel that I am not really the person that I appear to be.[a]
5. When I think about the kind of person I have been in the past, I'm not sure what I was really like.[a]
6. I seldom experience conflict between the different aspects of my personality.
7. Sometimes I think I know other people better than I know myself.[a]
8. My beliefs about myself seem to change very frequently.[a]
9. If I were asked to describe my personality, my description might end up being different from one day to another day.[a]
10. Even if I wanted to, I don't think I would tell someone what I'm really like.[a]
11. In general, I have a clear sense of who I am and what I am.
12. It is often hard for me to make up my mind about things because I don't really know what I want.[a]

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Scale ranges from 1 (strongly disagree ) to 5 (strongly agree ). [a]Reverse-keyed item.

**Sense of Self Scale**

---

1. I wish I were more consistent in my feelings.
2. It's hard for me to figure out my own personality, interests, and opinions.
3. I often think about how fragile my existence is.
4. I have a pretty good sense of what my long-term goals are in life. [R]
5. I sometimes wonder if people can actually see me.
6. Other people;s thoughts and feelings seem to carry greater weight than my own.
7. I have a clear and definite sense of who I am and what I'm all about. [R]
8. It bothers me that my personality doesn't seem to be well-defined.
9. I'm not sure that I can understand or put much trust in my thoughts and feelings.
10. Who am I? Is a question that I ask myself a lot.
11. I need other people to help me understand what I think or how I feel.
12. I tend to be very sure of myself and stick to my own preferences even when the group I am with expresses different preferences. [R]

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Note. The items are answered using a 4-point Likert scale, with response options of 1 ‘‘very uncharacteristic of me’’ through 4 ‘‘very characteristic of me.’’ [R]Reverse-keyed item.

**Awareness of Narrative Identity Questionnaire**

**ANIQ**

Everyone has memories about the experiences they have had over their lifetime. Sometimes these memories can be used to create stories about our lives. The following statements refer to how you might use your memories to understand the kind of person that you have been, the person you are, and the person you expect to become.

You can respond to the statements on a scale from 0 (completely disagree) to 10 (completely agree),with a higher score indicating stronger agreement. Please try to answer the questions broadly, and in relation to how you generally use your personal memories, rather than trying to relate them to specific circumstances or experiences.

1. My memories are like stories that help me understand my identity.
2. I use my stories about my life to work out the kind of person I am.
3. The experiences from my past make the story of who I am.
4. My sense of self is embedded in memories of my life.
5. When I think over my life, I can observe how there is a story that tells me who I am.
6. I can put the events of my life in order of when they occurred.
7. Knowing the order in which my life events occurred is easy for me.
8. When I'm thinking back over experiences I have had, I know when they occurred in my life.
9. I have a good awareness of the sequence in which events and experiences in my life happened.
10. When I think about experiences in my past, I find it easy to remember what came before and after them.
11. I understand how the story of my life has unfolded.
12. I understand how my life experiences are associated with one another.
13. Things that have happened over the course of my life are meaningfully tied together.
14. I am aware of how events in my life are interrelated.

15. I can understand how experiences in my life have occurred, with one thing leading to another.

16. When I think or talk about experiences in my past I can see themes about the kind of person that I am.

17. I can perceive common themes about who I am across memories of my life.

18. I notice themes in the personal memories of my life that relate to the kind of person that I am.

19. When I recall events and experiences across my lifetime, I can see consistent patterns in the way that

20. There are clear themes relating to who I am that can be found in my personal memories.

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Scoring
Awareness subscale: Items 1 to 5
Temporal Coherence subscale: Items 6 to 10
Causal Coherence subscale: Items 11 to 15
Thematic Coherence subscale: Items 16 to 20
Items within each subscale are summed, with a possible range of 0 to 50.

**Appendix C**

Moral Disengagement Scales (MDS, OMD)

**Moral Disengagement Scale**

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1. It is alright to fight to protect your friends. [MJ]
2. It's ok to steal to take care of your family's needs. [MJ]
3. It's ok to attack someone who threatens your family's honor. [MJ]
4. Sharing test questions is just a way of helping your friends. [EL]
5. Talking about people behind their backs is just part of the game. [EL]
6. Looking at a friend's homework without permission is just "borrowing it." [EL]
7. Damaging some property is no big deal when you consider that others are beating up people. [AC]
8. Stealing some money is not too serious compared to those who steal a lot of money. [AC]
9. Compared to other illegal things people do, taking some things from a store without paying for them is not very serious. [AC]
10. If people are living under bad conditions, they cannot be blamed for behaving aggressively. [DISR]
11. If someone is pressured into doing something, they shouldn't be blamed for it. [DISR]
12. People cannot be blamed for misbehaving if their friends pressured them to do it. [DISR]
13. A member of a group or team should not be blamed for the trouble the team caused. [DIFR]
14. If a group decides together to do something harmful, it is unfair to blame any one member of the group for it. [DIFR]
15. You can't blame a person who plays only a small part in the harm caused by a group. [DIFR]
16. People don't mind being teased because it shows interest in them. [DC]
17. Teasing someone does not really hurt them. [DC]
18. Insults don't really hurt anyone. [DC]

19. If someone leaves something lying around, it's their own fault if it gets stolen. [AB]
20. People who are mistreated have usually done things to deserve it. [AB]
21. People are not at fault for misbehaving at work if their managers mistreat them. [AB]
22. Some people deserve to be treated like animals. [DEH]
23. It is ok to treat badly someone who behaved like a "worm." [DEH]
24. Someone who is obnoxious does not deserve to be treated like a human being. [DEH]

---

Note . MJ = moral justification; EL = euphemistic labeling; AC = advantageous comparison; DISR = displacement of responsibility; DIFR = diffusion of responsibility; DC = distortion of consequences; AB = attribution of blame; DEH = dehumanization.

**Online Moral Disengagement Scale**

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1. Assuming the identity of a classmate/friend online is just a game among friends. (euphemistic labeling)
2. Sharing a video about someone else is just a way of paying attention to them. (disregarding/distorting consequences)
3. If a child is groomed online by people with bad intentions, (s)he is responsible for not having been able to recognise them. (attribution of blame)
4. It is right to share someone's intimate images to highlight a problem. (moral justification)
5. It is right to slander online a person who behaves like a beast (dehumanization)
6. It is not that serious to insult some on a social network because doing it in person would be worse. (advantageous comparison)
7. If teachers do not monitor technology at school, children cannot be blamed if they use their smartphone to belittle a classmate. (displacement of responsibility)
8. Teasing someone online is not so serious if everyone does it. (diffusion of responsibility)

---

All items are rated from 1 = strongly disagree to 5 = strongly agree.

**Appendix D**

## Need for Chaos Measure

---

1. I get a kick when natural disasters strike in foreign countries
2. I fantasize about a natural disaster wiping out most of humanity such that a small group of people can start all over
3. I think society should be burned to the ground
4. When I think about our political and social institutions, I cannot help thinking "just let them all burn"
5. We cannot fix the problems in our social institutions, we need to tear them down and start over
6. I need chaos around me - it is too boring if nothing is going on
7. Sometimes I just feel like destroying beautiful things
8. We need to uphold order by doing what is right, not what is wrong (R)*
9. It's better to live in a society where there is order and clear rules than one where anything goes (R)*

## Appendix E

### Dark Participation Measures (GAIT, CPM, Farhart et al., 2023)

**Global Assessment of Internet Trolling**

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1. I have sent people to shock websites for the lulz
2. I like to troll people in forums or the comments section of websites
3. I enjoy griefing other players in multiplayer games
4. The more beautiful and pure a thing is, the more satisfying it is to corrupt

---

All items are rated from 1 = strongly disagree to 5 = strongly agree.

**Cyberbullying Perpetration Measure**

---

1. Involved in social groups whose purpose was to tease or insult another person on the Internet.
2. Used online texts to insult, tease, socially isolate, or make jokes about another person.
3. Used online communication tools (e.g., email, online messaging) to send annoying or vulgar messages to another person.
4. Maliciously spread fictitious rumors about another person on the Internet.
5. Registered an online account using false information to make jokes about another person.
6. Used multimedia forms such as photographs and videos to insult, tease, socially isolate, or make jokes about another person.
7. Involved in an online social forum to hunt for another person's information and post it on the Internet for malicious purposes.
8. Edited and posted another person's photographs on the Internet for humiliation purposes.

9. Hacked into another person's online account to alter his or her personal information without permission.

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All items are rated from 1 = never to 4 = five or more times.

**Conspiracy Theory (CT) Belief and Sharing**

We recoded responses to the following questions to range from 0 to 1, such that higher numbers represent greater CT endorsement.

**Democratic CTs.** Some people believe Donald Trump is plotting with secret societies of white supremacists, such as the Ku Klux Klan, to take control of the United States. Others do not believe this. What do you think? Donald Trump…Definitely is plotting with secret societies of white supremacists, Probably is plotting with secret societies of white supremacists, Probably is not plotting with secret societies of white supremacists, Definitely is not plotting with secret societies of white supremacists.

Some people believe that a group of Russian operatives are secretly manipulating or directing US national policy. Some people do not believe this. What do you think? This type of Russian involvement in the federal government… Definitely exists, Probably exists, Probably does not exist, Definitely does not exist.

Some people believe that the largest banks in the U.S. manipulate the economy for their financial gain. Others do not believe this. What do you think? The largest banks in the US Definitely do manipulate the economy for their financial gain, Probably do manipulate the economy for their financial gain, Probably do not manipulate the economy for their financial gain, Definitely do not manipulate the economy for their financial gain.

**Republican CTs**. Some people believe that the Mueller investigation is not, in fact, an investigation into the Trump campaign's collusion with the Russian government. Instead, they believe it is an investigation into nefarious activities, including child molestation and a variety of other crimes, perpetrated by the Clintons, Barack Obama, and other unelected people who are currently working behind the scenes to run the government. Others do not believe this. What do you think? The Mueller investigation…Definitely is an investigation into nefarious activities perpetrated by the Clintons, Barack Obama, and other unelected people who are currently working behind the scenes to run the government, Probably is an investigation into nefarious activities perpetrated by the Clintons, Barack Obama, and other unelected people who are currently working behind the scenes to run the government, Probably is not an investigation into nefarious activities perpetrated by the Clintons, Barack Obama, and other unelected people who are currently working behind the scenes to run the government, Definitely is not an investigation into nefarious activities perpetrated by the Clintons, Barack Obama, and other unelected people who are currently working behind the scenes to run the government.

Some people believe that Jewish businessman and liberal cause supporter George Soros is financing the caravan of approximately 3,000 Central Americans crossing Mexico to come into the US. Others do not believe this. What do you think? George Soros...Definitely is financing the caravan, Probably is financing the caravan, Probably is not financing the caravan, Definitely is not financing the caravan.

Some people believe that former Secretary of State Hillary Clinton and other highranking government officials are involved in a cover-up about the State Department's

role in the events surrounding the terrorist attacks in Benghazi, Libya in September 2012 that led to the murder of the US ambassador and three other Americans. Others do not believe this. What do you think? Former Secretary of State Hillary Clinton and high-ranking government officials... Definitely are involved in a Benghazi cover-up, Probably are involved in a Benghazi cover-up, 6  Probably are not involved in a Benghazi cover-up, Definitely are not involved in a Benghazi cover-up.

**Willingness to Share Conspiracy Theories.** Imagine that you came across a blog post from a source that you trust that argued that [INSERT CONSPIRACY THEORY HERE]. Assuming you could choose the people who saw it, how likely is it that you would share the blog post on social media? Extremely likely, Very likely, Somewhat likely, Not too likely, Not at all likely. Each respondent was randomly assigned to be asked about one of three Democratic CTs and one of three Republican CTs. We reverse coded and recoded responses to range from 0 to 1, such that higher values represent greater willingness to share.

**Appendix F**

## Demographics

What is your current age in years? _____

Which gender identity do you most identify with?

1. Male
2. Female
3. Transgender
4. Non-binary/non-conforming
5. Other
6. Prefer not to say

Which ethnic/racial group do you most identify with?

1. White/Caucasian
2. Hispanic/Latino
3. Black/African American
4. Middle Eastern
5. Asian
6. Pacific Islander
7. Native American
8. Multi-ethnic or Mixed race
9. Other
10. Prefer not to say

Which of the following best describes your current political outlook/orientation?

1. Extremely liberal
2. Liberal
3. Conservative
4. Extremely conservative
5. Prefer not to say

**Appendix G**

## Recruitment Material & Online Participant Consent Form for SONA

**[SONA Recruitment Material] - Instructions/Description**
Complete questionnaires online for 1 hour credit. To receive full credit, you must complete all questionnaires and answer all questions. Otherwise, you will receive partial credit proportional to completed tasks.

Please answer all questions honestly and truthfully. Thank you!

REQUEST FOR YOUR PARTICIPATION IN RESEARCH

TITLE OF THE STUDY
Psychological Factors Behind Online Misbehavior

NAME OF THE RESEARCHER
Professor Gregory J. Feist, PhD and Randy Kim, BA, candidate for MA in Psychology.

PURPOSE
We are interested in why some people engage in creative activities more than others.

PROCEDURES
We would like you to complete six questionnaires online that will take about 45 to 60 minutes to complete. To receive full credit (1 hour) you must complete all questionnaires and answer most every question. Otherwise, you will receive only partial credit.

POTENTIAL RISKS
There is minimal risk involved in participating in this study. Some of the questions concern philosophical questions concerning death and immortality and your attitudes toward your own mortality as well as your sense of meaning in your life.

POTENTIAL BENEFITS
There is no real benefit to you personally for your participation in this study.

COMPENSATION
You can earn up to 1 hour credit toward your course requirement in Psychology 1 if you complete most questions and complete all questionnaires. If you complete less, you will earn credit proportional to your completion of questionnaires.

CONFIDENTIALITY
All questionnaires have no direct identifying questions on them. Your identifying information (SJSU email) required to be awarded course credit will not be directly associated with any of

your answers. These identifiers are used only to award you credit for your participation and will be separated from your answers and kept in a separate file.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary. You can refuse to participate in the entire study or any part of the study without any negative effect on your relations with San Jose State University. You also have the right to skip any question you do not wish to answer. This consent form is not a contract. It is a written explanation of what will happen during the study if you decide to participate. You will not waive any rights if you choose not to participate, and you will receive partial credit for partial participation if you complete only some of the tasks.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study, please contact Professor Gregory J. Feist at 408-924-5617 or greg.feist@sjsu.edu Complaints about the research may be presented to Dr. Clifton Oyamot, Chair of the Psychology Department at 408-924-5600. For questions about participants' rights or if you feel you have been harmed in any way by your participation in this study, please contact Dr. Richard Mocarski, Associate Vice President for Research, San Jose State University, at 408-924-2479 or irb@sjsu.edu If you have read and agree to the conditions in this consent page, please click "Submit" to continue to the online questionnaires.