

FIGHTING ADDICTION: A WAR ON METAPHORS IN THE PUBLIC SPHERE

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Abstract

This study sought to examine the effects of war metaphors on participant ratings to engage in behaviors that prevent drug addiction. Based on previous research, we hypothesized that framing addiction using war metaphors would lead participants to be less interested in engaging with self-limiting (but not self-bolstering) behaviors to prevent addiction, compared to when addiction was framed using a more neutral metaphor (“imbalance”). Participants read a brief passage about drug addiction that either framed the illness as an *enemy* or an *imbalance* and reported their intentions to engage in both self-limiting and self-bolstering behaviors that prevent addiction. The results did not support our hypothesis, in that there was no significant difference between the self-limiting intentions of those primed with the enemy metaphor versus those primed with the imbalance metaphor. There was, however, a main effect of behavior type: intentions to engage in self-limiting behaviors were significantly higher than intentions to engage in self bolstering behaviors. We theorized that our hypothesis was not supported because our paragraph was very biological in nature, which might not appeal to certain demographics of individuals in America. In future studies, we would like to explore the behavioral effects of framing addiction as a “virus” or a “beast.”

Keywords: drug addiction, enemy metaphor, imbalance metaphor, self-limiting behaviors, self-bolstering behaviors

Fighting Addiction: A War on Metaphors in the Public Sphere

1,960 people in the United States died from heroin overdose in 1999, rising to 15,482 in 2017 (CDC Wonder, 2017). Deaths involving drug overdose have increased tremendously over the past decade, with heroin overdose rates increasing six fold. Addiction is a prominent mental illness, and around ten percent of the United States population abuses drugs (NIDA 2015). Like many other mental illnesses, recovery resources are limited. Most individuals involved in the rehabilitation of drug addicts are those that have experienced addiction already from a personal or close relational standpoint. Addiction affects several socio-cultural realms, but this study examines the effect of the language we use to refer to addiction. It is important to understand the factors that shape how people think about addiction (for example, language and culture) and the behaviors they engage in (or abstain from engaging in) that might reduce the risks of developing addiction.

Folk Psychiatry

Folk psychiatry is the study of how everyday people, without extensive training in cognitive neuroscience or psychology, think about mental health and psychological disorders. Researchers study folk psychiatry to examine meaningful individual differences in lay beliefs about mental illness, which may impact real world health outcomes and social stigmas. Language may be a tool for expressing or shaping those differences. For example, previous studies on folk psychiatry have framed illnesses like depression and addiction as a “demon preying on” or a “brain disease infecting” an individual, and yielded significant differences in lay beliefs (Flusberg, DellaValle, and Thibodeau, 2018). Participants that read a brief media report framing addiction as a “disease” were more likely to attribute blame for addiction to a medical or biological reason. In other words, they were more likely to hold lay beliefs that the cause of

addiction could be attributed to a medical or biological source. Conservatives also tended to attribute blame for addiction on the individual's morality, rather than a response to biological or social conditions.

War Metaphor Framing

The present study sheds light onto the influence of metaphor on thought. Metaphors allow us to use our knowledge of a more simple and familiar domain to communicate and explain a more complex one. Because of this, when people talk about complex and abstract concepts like mental disorders, cancer, and other societal problems, they often use metaphors. The metaphors can shape how people think and reason about those issues. In another study examining the effects of metaphor framing on cognition, participants either received a report framing crime as “a beast ravaging” or “a virus infecting” a fictional city (Thibodeau & Boroditsky, 2011). The results revealed that metaphorically framing crime as a beast led participants to favor enforcement-based solutions to crimes in comparison to participants primed with crime as a virus.

War metaphors are constantly used in the public sphere to speak about these important topics. (Flusberg, Matlock, & Thibodeau, 2018). For example, American society often frames addiction as a *demon*, *disease*, or a *war* that individuals have to *battle* in order to survive. For example, consider this recent 2018 tweet by musical artist @Kehlani: “*addiction isn't one of those things you can put yourself in the shoes of. you had to have fought the fight yourself or had it rip your family apart your entire life... even then, the latter is still not the same thing. this isn't the time for the picking apart or making light of.*” This speaks to the complexity of addiction, and the ease with which the general public compares addiction to a war that has to be fought. Kehlani is the child of an addict and has struggled with mental illness in the past. The tweet also

exemplifies how often metaphors are used to conceptualize addiction, and how often addiction is personified. Addiction is conceptualized as an enemy without even using the word “enemy,” because it is described as a “fight.” What are the consequences, or the benefits and drawbacks, to framing addiction as an enemy that must be fought when it comes to the willingness of an individual to take action to deal with their addiction? Using war metaphors to refer to complex issues can have a great impact on the way that these issues are viewed by the general public. A study examining the effect of metaphor framing on attitudes towards climate change revealed that war metaphors increased the sense of urgency about the topic, and led people to say they would be more likely to engage in various conversation behaviors (Flusberg, Matlock, & Thibodeau, 2017).

While this suggests that war metaphors can have a positive effect on behavior, other studies have found the opposite. Recent studies by Hauser & Schwartz (2015), for example, have revealed that using war metaphors to refer to cancer can influence how participants intend to engage with certain activities that may prevent cancer from forming. In their first experiment, participants read a passage in which cancer was metaphorically described as either an *imbalance*, or an *enemy* (along with a neutral non-metaphorical control condition) and then responded to a free response question where they listed up to 9 answers to the open-ended question "what things would you do to fight against (reduce your risk of) developing cancer?" Then, two coders blind to what the study was about and what condition participants were in coded each response as either a self-limiting behavior (“one where people limit or avoid a behavior which is associated with increasing one’s risk of cancer; e.g. limiting eating high fat, high calorie foods”), or a self-bolstering behavior (“one that people engage in to lower their risk of cancer; e.g. eating fruits and vegetables”). The key finding was that participants who received the enemy metaphor listed

fewer self-limiting behaviors and more self-bolstering ones on average than those who received the neutral metaphor. In the second experiment, the dependent variable was adjusted from a free-response task to a behavioral intentions rating task. Participants read one of the three paragraphs and then rated a series of behaviors on a 1 (do not intend) to 7 (strongly intend) scale with the degree to which they would engage in each behavior to prevent cancer. Those in the enemy metaphor condition expressed a lower willingness to engage in self-limiting (but not self-bolstering) behaviors than those in the other two conditions (Hauser & Schwarz, 2015).

Self limiting and self bolstering behaviors can reduce the risks of developing many serious health issues, including addiction. For example, avoiding hanging out with friends or acquaintances who use regularly drugs (self-limiting) and participating in positive social events that do not include drugs (self-bolstering) are both healthy behaviors that may reduce the risks of developing a drug addiction. Would war metaphors have a similar effect for these addiction-related behaviors as they did with cancer-related behaviors? The present study framed addiction using war metaphors in one group and an imbalance metaphor in the other, and then measured all participants interest in engaging with self-limiting and self-bolstering behaviors to prevent addiction. The study also examined how gender, lay beliefs, and other variables moderate this effect. This study is significant because addiction is a disease that negatively affects all people that surround the addict.

Addiction is a disease that affects entire families, as shown by the fact that about 50% of the children of addicts become addicts themselves (Bevilacqua & Goldman, 2009). An individual's lay beliefs about addiction might be influenced by the exposure to addiction they received in their lifetime. About twice as many adult men in the United States abuse alcohol compared to adult women, a 10.8 million to 5.8 million ratio (CBHSQ, 2016). If adult men are

twice as likely to develop alcoholism than women, does that mean that men are socialized to have different beliefs about alcohol addiction? If so, are they more or less likely than women to engage in preventative self-limiting behaviors? In 2015, Hauser & Schwartz found a gender effect when measuring prevention intentions with respect to cancer: women were more likely than men to engage in preventative behaviors. This study examined whether this would replicate for addiction. In terms of active treatment, about 10% of United States adults are in recovery from addiction (Rondó, 2012). Would this rate increase if the language used to refer to addiction was changed? In this study, participants read a brief passage about drug addiction that either framed the illness as an *enemy* or an *imbalance*. Following, they reported their intentions to engage in both self-limiting and self-bolstering behaviors that prevent addiction. We hypothesized that framing addiction as a war would prompt participants to self-report less intention to engage in self-limiting behaviors that prevent addiction.

Methods

Participants

400 participants (59.5% male-identifying, 40.3% female-identifying, and 0.3% non-binary) were recruited via Amazon's Mechanical Turk crowdsourcing platform for our experiment, with 200 participants in each of the two conditions. The sample was restricted to people who are at least 18 years old and living in the US. 77.8% of the sample self-identified as White, 8% Black/ African American, 7% Hispanic/Latino, 5.5% Asian/Pacific Islander, 0.5% Native American/ American Indian, and 1.3% selected Other.

Materials and Procedure

This experiment was created using Qualtrics survey software and was modeled after an experiment that examined the effect of war metaphors on intentions to engage in activities that

prevent cancer (Hauser & Schwarz, 2015). In a between-subjects design, participants were randomly assigned to one of two conditions (*enemy* versus *imbalance* metaphors). All participants read a brief passage about drug addiction. The first sentence read “Drug addiction is a serious public health problem.” The second sentence, however, either framed the issue as an enemy (i.e. “Drugs *invade* the reward system in the brain...”) or an imbalance (i.e. “Drugs *destabilize* the reward system in the brain...”). A variant of the metaphor was presented in the passage four different times total (see Appendix B).

Prevention Intentions. After reading the passage about drug addiction, participants were asked to rate their willingness to engage in a list of both self-limiting and self-bolstering behaviors on a scale of 1 (do not intend) to 7 (strongly intend), adapted from Hauser and Schwartz (2015). The self-limiting behaviors included: (1) limiting hanging out with friends or acquaintances who regularly use drugs; (2) limiting going to places where drugs are consumed; (3) limiting romantic relationships with people who use drugs; (4) limiting going to events where there may be drugs; (5) limiting relationships with family members who are not supportive. Self-bolstering behaviors included: (1) participating in positive social events that do not include drugs; (2) engaging in community support programs; (3) forming stronger ties with supportive family members; (4) learning more about the consequences of drug addiction; (5) building strong social relationships. These items were presented in a randomized order.

Demographics. Next, participants completed a demographics survey that asked about their gender, ethnicity, age, political affiliation and ideology, education, and previous experience with drug addiction.

Lay Beliefs About Addiction. Finally, participants completed a questionnaire examining their lay beliefs about addiction. Participants were prompted with the statement, “addiction is

caused by..." and rated their agreement with three causes of addiction on a scale of 1(Strongly Disagree) to 7(Strongly Agree). Participants rated the extent to which they believed addiction was caused by biological reasons (e.g. genetic factors, a chemical imbalance in the brain, brain abnormality, social reasons (e.g. cold or uncaring parents, living in a bad neighborhood, social pressure from others), and personal reasons (e.g. self-medication, poor life decisions, lack of self-discipline).

Results

For each participant, we calculated their average rating of intention to engage in both self-bolstering and self-limiting behaviors related to preventing addiction. A 2 (*enemy vs. imbalance* metaphors) X 2 (self-limiting vs. self-bolstering behaviors) mixed design analysis of variance test was conducted to examine intentions to prevent addiction among participants primed to view addiction as an enemy versus those primed to view addiction as an imbalance. We had predicted that participants exposed to the war metaphor would exhibit reduced intentions of engaging in self-limiting, but not self-bolstering behaviors that prevent addiction, relative to participants exposed to the imbalance metaphor. Contrary to our hypothesis, the analysis revealed that there was no interaction between metaphor frames on self-limiting behaviors, $F(1, 398) = .02, p = .898$. Yet, there was a significant main effect of behavior type: intentions to engage in self-limiting behaviors ($M = 5.15, SD = 1.39$) were significantly higher than intentions to engage in self bolstering behaviors ($M = 4.75, SD = 1.22$), $F(1, 398) = 36.06, p < .001, \eta^2 = .08$. There was no main effect of condition, as participants in both the war ($M = 4.95, SD = 1.21$) and imbalance conditions gave similar intention ratings overall, $F(1, 398) = .01, p = .915$.

Next, we ran a series of exploratory analyses to examine whether past exposure to drug addiction, political ideology, and lay beliefs about the causes of addiction moderated these

effects. A multiple linear regression was calculated to predict self-limiting intentions based on personal belief of the cause of addiction (social, personal, and biological) and a significant equation was found, $F(3, 399) = 6.58, p < .001, R^2 = .069$. The results indicated that a belief in both a social and personal cause of addiction was a significant predictor of a higher intention to engage in self-limiting behaviors. In other words, there was support for a significant relationship between a higher belief in a social or personal cause of addiction and higher intentions to engage in self-limiting behaviors. There was no support for a significant relationship between a higher belief in a biological cause of addiction and higher intentions to engage in self-limiting behaviors. The results also indicated that a belief in both a social cause of addiction was a significant predictor of a higher intention to engage in self-bolstering behaviors. Finally, a one-way ANOVA compared average overall prevention intentions by gender: male, female, and non-binary. The results revealed that female identifying participants had significantly higher intentions to engage in both self-limiting and self-bolstering behaviors compared to male identifying participants, $F(3, 399) = 9.61, p < .001, \eta^2 = .05$.

Discussion

People frequently use war metaphors to talk about complex illnesses like cancer and addiction. Previous research has shown that, in the context of cancer, participants exposed to war metaphors (versus imbalance metaphors) expressed lower intentions to engage in self-limiting, but not self-bolstering behaviors designed to reduce the risks of developing cancer. In the present study participants read a passage about drug addiction that either framed the illness as an *enemy* or an *imbalance*, and reported their intentions to engage in both self-limiting and self-bolstering behaviors that prevent addiction. We hypothesized that framing addiction as a war would prompt participants to self-report less intention to engage in self-limiting behaviors that prevent

addiction. We formed this hypothesis because we believed that participants that internalized the “war on addiction,” would feel an internalized defeat in response.

Contrary to our hypothesis, there was no difference between those who read war versus imbalance metaphors on intentions to engage in self-limiting behaviors to prevent drug addiction. Yet, there was a significant main effect of behavior type: intentions to engage in self-limiting behaviors were significantly higher than intentions to engage in self bolstering behaviors. Belief in social and personal (but not biological) causes of addiction were associated with greater preventive intentions. This means that participants who believed that addiction is caused by environmental or personal factors tended to report that they were more likely to want to prevent addiction in their lives. We hypothesize that this is because participants felt a greater level of individual control over their ability to prevent addiction if they believed the disease was internalized. In addition, female identifying participants had significantly higher intentions to engage in both self-limiting and self-bolstering behaviors than male identifying participants. This finding is relevant because twice as many men in the United states abuse alcohol, compared to women (CBHSQ, 2016). We suggest that this finding might be due to the differences in how men and women are socialized in the United States, and might be tied to the pressures of masculinity.

A key limitation to our study was that both addiction passages were very biological in nature (addiction as a “disease”), which might not appeal to certain people and may have led them to attribute less attention to the passage overall, including the language prime. In future studies, we would like to explore the behavioral effects of framing addiction as a “virus” or a “beast.” The implications of this study are significant because addiction recovery programs, like the 12-step program for alcohol addiction rehabilitation, use war metaphors to refer to addiction

constantly. Researchers that have examined the 12-step program have studied the concept of self-control (Steigerwald & Stone, 1999). The program refers to the “relinquishing” of control of their behavior when drinking. Yet, internalizing addiction can be harmful on their psyche because addicts do not actually have any control over their addiction. They can learn better coping skills and tools to help them recover and avoid the substance, but addiction is a mental illness that alters their brain chemistry.

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Appendix A.

Informed Consent Form

Social Attitudes Study

Researcher(s): Edona Lazorja

Faculty Sponsor: Stephen Flusberg

Contacts:

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Faculty Sponsor: stephen.flusberg@purchase.edu

Purpose: We would like permission to enroll you as a participant in a research study. The study investigates the relationship between social attitudes and behaviors.

Procedure: In this study, you will read a brief passage about drug addiction and then answer some questions about your beliefs and attitudes towards this issue, along with some basic demographic information. The study should take no more than 4 minutes to complete.

Costs, risks, and discomforts: There are little to no known risks to this study. You may experience negative emotions; however, there are no more risks or discomforts encountered in this study as there would be encountered in everyday life.

Benefits and incentives: The general benefit of participating in scientific research is the satisfaction that comes from contributing to science and the pursuit of knowledge.

Confidentiality: All information gathered in this study will be kept strictly confidential. It will be stored in a password-protected file on a secure server and only the researchers will have access to your data. We will not ask for your name or any other personally identifying information.

Refusal or withdrawal of participation: You do not have to participate in this study. If you decide to participate, you can change your mind and drop out of the study at any time without affecting your present or future interactions with the experimenters.

Electronic Consent: I confirm that the purpose of the research, the study procedures, the possible risks and discomforts, as well as potential benefits that I may experience have been explained to me. All my questions have been answered. I have read this consent form. My electronic consent below indicates my willingness to participate in this study. I understand that I may contact the Chair of the Institutional Review Board at SUNY Purchase College if I experience any problems during this experiment or have concerns about the ethics of this research (irb.chair@purchase.edu).

I am 18 years or older, live in the United States, and agree to participate in this study.

- Agree
- Disagree

Appendix B.

Imbalance Paragraph vs Enemy Paragraph**Imbalance Metaphor**

Drug addiction is a serious public health problem. Drugs destabilize the reward system in the brain, leading to an imbalance of different neurochemicals. At any given point in time, a healthy person has specific amounts of various neurochemicals like dopamine in their system, which is needed for normal functioning. However, an unbalanced amount of dopamine levels in the brain can destabilize several important brain regions, which can lead to serious behavioral and health risks. In 2014, Over 7 million Americans developed a drug addiction. In 2017, over 70,000 Americans died from a drug overdose.

Enemy Metaphor

Drug addiction is a serious public health problem. Drugs invade the reward system in the brain, leading to a battle between different neurochemicals. At any given point in time, a healthy person has specific amounts of various neurochemicals like dopamine in their system, which is needed for normal functioning. However, an aggressive amount of dopamine levels in the brain can wage war on several important brain regions, which can lead to serious behavioral and health risks. In 2014, Over 7 million Americans developed a drug addiction. In 2017, over 70,000 Americans died from a drug overdose.

Appendix C.

Prevention Intentions

Please rate your willingness to engage in each of these behaviors in order to reduce the chances that you will become addicted to drugs on a scale from 1(do not intend) to 7(strongly intend).

Self-Limiting

- (1) Limiting hanging out with friends or acquaintances who regularly use drugs
- (2) Limiting going to places where drugs are consumed
- (3) Limiting forming romantic relationships with people who use drugs
- (4) Limiting going to events where there may be drugs
- (5) Limiting interactions with family members who are not supportive

Self-Bolstering

- (1) Participating in positive social events that do not include drugs
- (2) Engaging in community support programs
- (3) Forming stronger ties with supportive family members
- (4) Learning more about the consequences of drug addiction
- (5) Building strong social relationships

Appendix D.

Demographics Questionnaire**Gender Identity**

- Male
- Female
- Non-binary
- Different identity

Age (continuous scale)**Education Level**

- Some High School
- High school diploma or GED
- Some College
- Associates degree or technical training
- 4-year college degree
- Master's degree
- Doctoral or Professional Degree (for example, PhD, JD, MD)

Previous experience with drug addiction

- Have never known somebody with drug addiction
- Have known of/ been an acquaintance of somebody with a drug addiction
- Have a friend(s)/ family member(s) with a drug addiction
- Have been addicted to drugs
- Prefer not to answer

Political Affiliation

- Democratic
- Republican
- Independent
- Other

Political Ideology

- Would you describe yourself as relatively more liberal or conservative when it comes to your outlook on the world? Click and drag the bar below to input your answer (0 = "extremely liberal", 100 = "extremely conservative").

Ethnicity

- White/Caucasian
- Hispanic/Latino
- Black/African American
- Asian/Pacific Islander
- Different racial/ethnic identity

Appendix E.

Lay Beliefs and Experience with Addiction

Why do people become addicted to drugs?

Please rate your agreement with the following statements, on a scale from 1(Strongly disagree) to 7(Strongly agree), with your agreement that they are the cause of drug addiction.

Biological Reasons

For example:

Genetic factors

A chemical imbalance in the brain

Brain abnormality

Social Reasons

For example:

Cold or uncaring parents

Living in a bad neighborhood

Social pressure from others

Personal Reasons

For example:

Self-medication

Poor life decisions

Lack of self-discipline or willpower

Appendix F.

Debriefing and After Care Instructions

Thank you for your participation in the study! If you have any questions or are interested in the study's purpose, please email the student researcher at edona.lazorja@purchase.edu. If this study triggered any negative experiences or emotions, please contact the National Drug Helpline at 1-888-633-3239.