Framing Effects and the Folk Psychiatry of Addiction

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Abstract

Clinical disorders are complicated, multidimensional phenomena that are important to both clinicians and the lay public, as well as to cognitive scientists interested in understanding how people think and reason about complex domains. To date, however, little work has examined the factors that influence the folk psychiatry of addiction. Participants in the present study read a brief paragraph about addiction pitched at either an abstract or personal level, followed by a series of questions about the causes and treatment of drug addiction. We further manipulated whether addiction was described using a medical or psychological label. Results revealed that liberals and conservatives varied dramatically with respect to their folk psychiatric reasoning, with liberals preferring a more biological/medical view, which is associated with lower feelings of personal responsibility. Framing addiction at an abstract level pushed people towards this biological view, though we found little evidence for effects of linguistic framing.

Keywords: folk psychiatry; framing, addiction, language, construal, political ideology

Introduction

On February 2, 2014, Oscar award winning actor Phillip Seymour Hoffman suffered an accidental drug overdose in his Manhattan home. Journalists, psychologists, bloggers, and fans immediately went online to express sympathy and sorrow and to try to understand and explain this unexpected tragedy. Writing for Time magazine, David Sheff (2014) lamented:

> "[It] wasn't Hoffman's fault that he relapsed. It was the fault of a disease that often includes relapse as a symptom and the fault of the ineffective treatment he received... We don't know what treatments Hoffman received, but it's unlikely that it was state-of-the-art care rooted in the fact that addiction is a brain disease."

By describing addiction using medical terms like *brain disease*, Sheff appears to be trying to mitigate the blame directed towards Hoffman and to redirect it instead towards our flawed healthcare system. However, not everyone conceptualized Hoffman's addiction in these terms. Writing a few days later for FoxNews.com, Keith Ablow (2014) expressed a very different point of view:

> "No quirk of neurochemistry can make you rate getting high as more important than getting your kids through life. Only a disorder of character can do that… Philip Seymour Hoffman never faced and wrestled to the ground whatever demons had him on the run from his own life story."

Ablow rejects the brain disease construal (his *quirk of neurochemistry*), instead describing addiction as a *disorder of character* that results from a personal failure to defeat one's (metaphorical) *demons*. This paints addiction not as a biological or medical issue, but as a psychological or behavioral problem; a physical struggle that an individual must be strong-willed enough to overcome.

Taken together, these examples seem to reveal very different beliefs about the nature of drug addiction that have significant implications for how people understand (a) the causes of addiction (e.g., is it biological or psychological in origin?), (b) how we should feel about an individual with an addiction (e.g., how much are they to blame for their problem?), and (c) how the addiction should be treated (e.g., do they need a medical intervention or are they just not trying hard enough?).

Interestingly, the proper way to conceptualize addiction disorders (i.e. are they brain diseases or emergent behavioral phenomena?) is still hotly contested in the clinical literature (see, e.g., Heyman, 2013). Here, however, we consider how this debate plays out amongst members of lay public. In other words, we examine what may be called the *folk psychiatry* (Haslam, 2005) of addiction, as well as the factors that influence how people think about addiction problems.

Investigating how people conceptualize addiction and other clinical disorders is important for cognitive scientists interested in understanding how people represent and reason about complex domains. It is also of vital importance to health professionals and policy makers concerned with promoting effective treatment seeking behavior and reducing the stigma associated with mental disorders.

Recent research has helped illuminate some of the factors that influence how people reason about psychiatric conditions. Consistent with the analysis above, Ahn, Proctor, & Flanagan (2009) found that mental health professionals conceptualize different disorders along a continuum from the highly biological (e.g., Autism) to the

highly non-biological (e.g., adjustment disorders), which is associated with how they understand the causes and preferred treatment options for these conditions (e.g., medical treatments tend to be recommended for disorders on the biological end of the spectrum). This biological/medical continuum is also a key dimension in folk psychiatric reasoning (Haslam, 2005), though in general both clinicians and novices hold less essentialist beliefs about mental disorders as compared to other medical conditions (Ahn, Flanagan, Marsh, & Sanislow, 2006).

Importantly, researchers have found that simple interventions can influence the extent to which people conceive of complex health conditions as biological, which in turn affects other cognitive and behavioral outcomes. Hoyt, Burnette, and Auster-Gussman (2014), for instance, found that when overweight participants read an article that described obesity as a *disease*, they felt less concerned about their weight and were more likely to make unhealthy food choices. This suggests that "medicalizing" a complex health condition like obesity can lead to lowered feelings of responsibility and control over the issue, leading people to expend less effort in dealing with it. Similar manipulations, however, can also lead people to support progressive public policy interventions that help protect obese individuals (Thibodeau, Perko, & Flusberg, *under review*).

Likewise, biological explanations for depression and generalized anxiety disorder can lead to lowered ascriptions of personal responsibility for these conditions, along with increased prognostic pessimism about their duration and treatment, and a reduction in empathy for individuals with the disorder (Lebowitz & Ahn, 2014; Lebowitz, Ahn, & Nolen-Hoeksema, 2013; Lebowitz, Pyun, & Ahn, 2014). For this reason, and perhaps surprisingly, it seems that medicalizing a mental disorder can actually cause an increase in the stigma associated with that disorder.

In the present study, we sought to understand how people think and reason about addiction, and what factors might influence how people conceptualize drug addiction in particular. Participants in our study read a brief paragraph about addiction and then responded to a series of questions about the causes addiction, what individuals with an addiction should do for treatment, and what society as a whole should do to address the issue.

We manipulated two key variables in attempt to influence folk psychiatric reasoning: language and construal level. For half of our participants, the first sentence of the paragraph described addiction using a medical label (*disease* or *neurological disorder*). For the other half, we used a psychological label (*demon* or *behavioral problem*). Recent research has found that even a one-word linguistic framing manipulation can affect how people reason about a complex domain like crime (Thibodeau & Boroditsky, 2011). Therefore we hypothesized that being exposed to a medical label would result in a more biologically oriented mental model of addiction.

We also manipulated whether the paragraph was pitched a relatively abstract level (describing addiction in terms of general symptoms and statistics) or a more personal level (describing the specific addiction issue and symptoms facing an individual). Research on construal level theory has found that thinking about behavior in a more abstract way leads to greater essentialization (Liberman, Trope, & Stephan, 2007), and therefore we predicted that participants who read the abstract story would also generate a more biologically oriented mental model of addiction.

Finally, we were also interested in particular individual differences that might affect how people conceptualize addiction. For example, research on obesity has found that liberals and those with personal experience with obesity tend to prefer explanations that attribute less blame to overweight individuals, like biological descriptions (Thibodeau, Perko, & Flusberg, *under review*). This is consistent with the observation that conservative ideology is characterized by an emphasis on personal responsibility, and members of a stigmatized group are typically motivated to view it as something they do not have full control over (Oliver & Lee, 2005; see also the quotations above). Thus we predicted that liberals and those with a personal experience with addiction would support more biologically oriented models of addiction.

Experiment

Methods

Participants We recruited and paid 813 participants through Amazon's Mechanical Turk. We used Turk's exclusion capabilities to ensure that participants lived in the United States and had a good performance record on pervious tasks (90% or greater). Data from 64 participants were excluded because they either took the survey more than once (as evidenced by a repeated IP address; N=17) or failed our manipulation check (N=47), leaving data from 749 participants for analysis.

Participants ranged in age from 18-79 years old (M = 31.5, SD = 10.7). The political affiliation of participants was skewed liberal, with 41.5%, 43.8% and 14.7% identifying as Democrat, Independent, and Republican, respectively. On a 101-point continuous scale of political ideology (0 = extremely liberal, 100 = extremely conservative), the mean was 38.7 (SD = 25.4).

Materials & Procedure The study consisted of a 2 (story type: abstract vs. personal) X 4 (label: demon, behavioral problem, disease, neurological disorder) between-subjects design, yielding 8 individual conditions. It was created using Qualtrics online survey software.

Participants first read a brief paragraph that discussed the issue of addiction in one of two ways. For half of the participants, the paragraph was pitched at a more abstract level, using statistics drawn from the CDC website (www.cdc.gov) to demonstrate that the issue is important and widespread. For the other half of participants, the paragraph was pitched at a personal level and described an individual named John dealing with addiction, detailing

many of the the same symptoms included in the abstract paragraph as they played out in his life.

For both story types, the first sentence of the paragraph framed addiction using one of four labels: *demon*, *behavioral problem*, *disease*, and *neurological disorder*. We considered *demon* and *behavioral problem* to be "psychological" labels that treat addiction as person-level phenomenon and ascribe relatively more blame to the addict. We considered *disease* and *neurological disorder* to be "medical" labels that treat addiction as a sub-personal, biologically based phenomenon and ascribe relatively less blame to the addict[1] (see Appendix for full paragraph texts).

After participants read the paragraph, they responded to a series of target and demographics questions. First, they were asked, "How should someone deal with drug addiction?" They had to rank order their top three choices from a list of seven options (presented in a randomized order) by dragging their choices into a response box. The options included: "seek medical treatment" (coded as a *medical* response in our analysis), "seek therapy", "join a support group like Narcotics Anonymous" (both coded as *psychological* responses), "learn self-discipline", "spend (more) time with friends and family", and "see a local spiritual figure" (coded as *informal* responses).

Second, they were asked: "What should we as a society do to deal with the rising rates of drug addiction?" and again rank ordered their top three choices from a list of options. The options included "improve education", "work against drug stigma by raising awareness" (both coded as *education* responses), "Reduce economic inequality", "legalize drugs", harsher punishments and/or more police enforcement for drug offenses (all coded as *policy* responses), "improve genetic testing / modification / engineering techniques", "better mental health services" (both coded as *healthcare* responses).

Third, they were asked: "Why do people become addicted to drugs?" and again rank ordered their top three choices from a list of options. The options included: "physical or chemical abnormality in the brain", "it is in their genes" (both coded as *biological* responses), "bad parenting", "living in a bad neighborhood", "social pressures" (coded as *social* responses), "self-medication", "lack of self discipline or character", "poor life decisions" (coded as *individual* responses).

Next, participants used a slider bar ranging from 0 (not at all responsible) to 100 (completely responsible) to indicate "How responsible for the current state of their lives are those who are experiencing drug addiction?" After this they rank ordered eight different issues based on how much stigma they associated with each one. The issues included obesity, anorexia, autism, cigarette smoking, drug addiction, adultery, dropping out of school, and depression.

Finally, they completed a brief set of demographics questions, as well as a manipulation check question (multiple-choice with three response options) to ensure they were paying attention when they read the original paragraph. For those who read the abstract paragraph, the manipulation check required them to indicate in which year the addiction statistics in the paragraph had been published (correct response: 2011). For those who read the personal paragraph, they had to indicate why John started using drugs (correct response: because his friends were into them). The demographics questions included age, political affiliation, a continuous measure of political ideology registered on a 101-point sliding scale ranging from 0 (very liberal) to 100 (very conservative), and a free response to the question: "have you or any of your friends or family experienced drug addiction? If so, what was done about it?" (These responses were coded as "yes", "no", and "N/A" for the purpose of our analyses).

Results & Discussion

This study yielded a large and complex dataset consisting of many overlapping categorical variables. For ease of exposition, we focus here on the main effects that relate to our original research hypotheses by examining responses to our target questions for each experimental and individual difference variable of interest. Though the interactions between these variables may be interesting and important, our sample sizes were not large enough to reliably detect and interpret what may be relatively small effects. Therefore, we leave it to future work to isolate some of these key interactions.

Because our sample was skewed towards Democrats and Independents, to analyze potential effects of political beliefs on folk psychiatric reasoning we used a median split on our continuous measure of political ideology to create "liberal" and "conservative" groups consisting of roughly equal numbers of participants (N=385 and N=364, respectively). Since these groups were also skewed slightly liberal (median=39), it is likely that we are underestimating the effects of political ideology on folk psychiatric reasoning.

For the three questions in which participants rank-ordered their top three choices, we only present analyses for the top choice for each question (using the coding scheme described above). See Figure 1 for a graphical depiction of these data.

Effects of Story Framing We first analyzed responses to the question "How should someone deal with addiction?" by conducting a 2 (story type: abstract vs. personal) X 3 (response category: informal vs. medical vs. psychological) chi-square test of independence. The results indicated that those who read the abstract paragraph were more likely to choose medical treatments, while those who read the

[1] Data from a norming study supported these intuitions: 125 naïve participants filled out a survey on their first day of an Introduction to Psychology course where they rated each label (using a 0-100% scale) on the extent to which a person experiencing such an issue is generally *responsible* for the current state of their lives. Paired-sample t-tests revealed no difference in responsibility ratings for *demon* (M=57.0, SD=29.5) and *behavioral problem* (M=55.3, SD=28.7; p=0.66), but both of these labels yielded reliably higher responsibility ratings than *disease* (M=33.9, SD=28.3) and *neurological disorder* (M=25.1, SD=28.9; p's < 0.001).

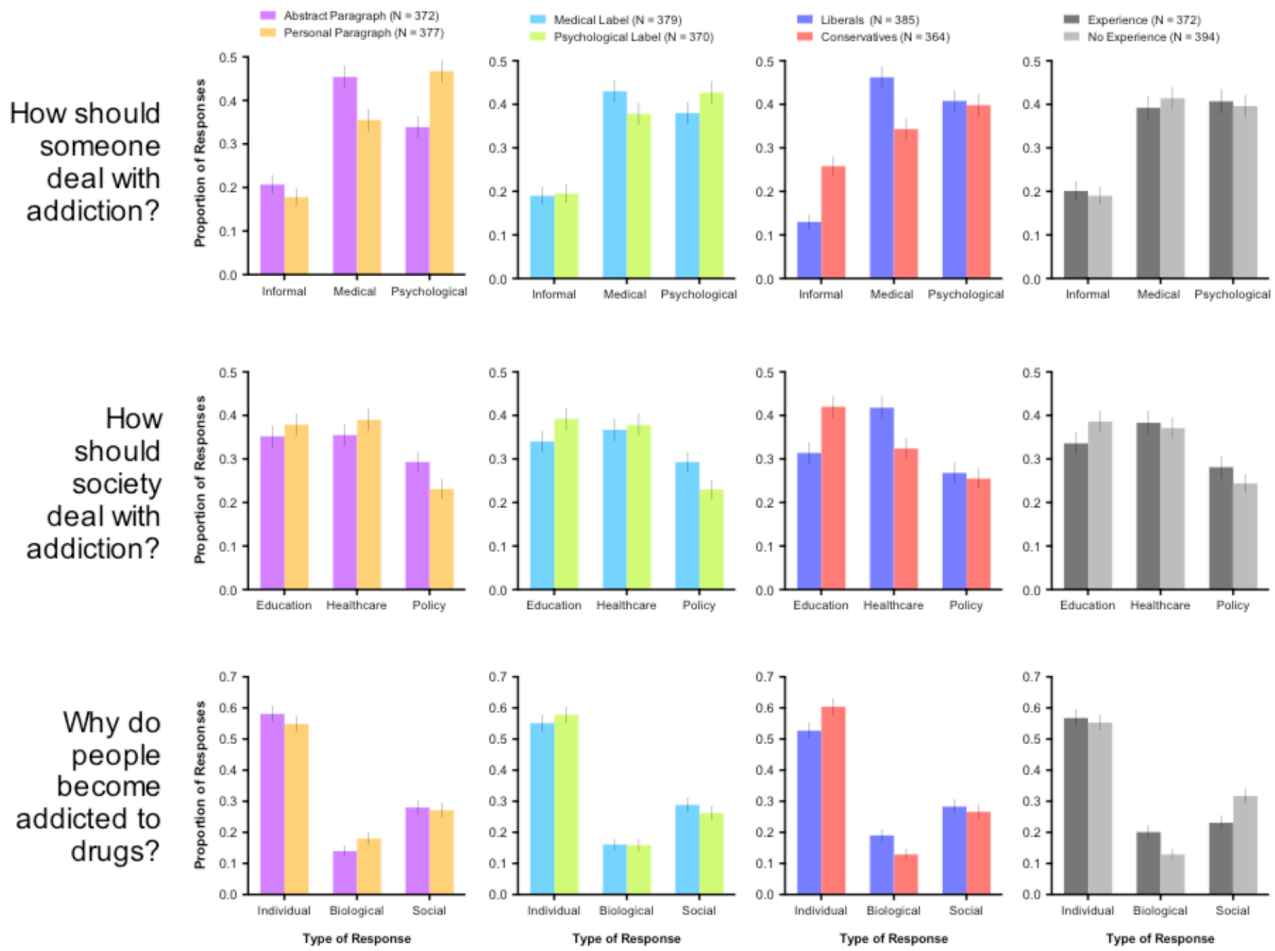

Figure 1. Proportion of (coded) top-choice responses for each of the three rank-order target questions for each variable of interest. Error bars represent standard errors of the proportions.

personal paragraph were relatively more likely to choose psychological treatments, $\chi^2(2)=12.98$, $p=.002$. This is consistent with the notion that concrete, personal construals shift attention to the psychological aspects of a condition, while abstract construals highlight more enduring patterns that may best be captured by biological models.

Second, we analyzed responses to the question "How should society deal with addiction?" by conducting a 2 (story type: abstract vs. personal) X 3 (response category: education vs. healthcare vs. policy) chi-square test of independence, but found no effects of story framing, $\chi^2(2)=3.77$, $p=0.152$.

Third, we analyzed responses to the question "Why do people become addicted to drugs?" by conducting a 2 (story type: abstract vs. personal) X 3 (response category: individual vs. biological vs. social) chi-square test of independence, but again found no effect of story framing, $\chi^2(2)=2.31$, $p=0.315$.

Finally, we examined participants' choice of the most stigmatized condition by coding whether they put addiction first or not. Participants who read the personal story were marginally more likely to think that addiction was the most stigmatized condition, $\chi^2(1)=2.72$, $p=0.099$.

Effects of Label Framing We first analyzed responses to the question "How should someone deal with addiction?" by conducting a 2 (label type: medical vs. psychological) X 3 (response category: informal vs. medical vs. psychological) chi-square test of independence, but found no effects of label framing, $\chi^2(2)=2.29$, $p=0.32$.

Second, we analyzed responses to the question "How should society deal with addiction?" by conducting a 2 (label type: medical vs. psychological) X 3 (response category: education vs. healthcare vs. policy) chi-square test of independence, but found only a very marginal trend, $\chi^2(2)=4.28$, $p=0.12$. This trend suggests that participants exposed to a medical label were slightly more likely to choose a policy-based response, while those exposed to a psychological label were slightly more likely to choose an education-based response.

Third, we analyzed responses to the question "Why do people become addicted to drugs?" by conducting a 2 (label

type: medical vs. psychological) X 3 (response category: individual vs. biological vs. social) chi-square test of independence, but found no effects of story framing, $\chi^2(2)=0.68$, $p=0.71$.

Finally, we examined participants' top choice for most stigmatized condition by coding whether they put addiction first or not, but there was no effect of label framing, $\chi^2(1)=2.01$, $p=0.16$.

Effects of Political Ideology We first analyzed responses to the question "How should someone deal with addiction?" by conducting a 2 (ideology median split: liberal vs. conservative) X 3 (response category: informal vs. medical vs. psychological) chi-square test of independence. We found that conservatives were more likely to suggest informal treatment options while liberals were more likely to suggest medical treatments, $\chi^2(2)=22.62$, $p<0.001$. This is consistent with the notion that the medicalization of certain clinical disorders, which downplays personal responsibility, has more support amongst liberals.

Second, we analyzed responses to the question "How should society deal with addiction?" by conducting a 2 (ideology: liberal vs. conservative) X 3 (response category: education vs. healthcare vs. policy) chi-square test of independence. We found that liberals were more likely to suggest healthcare-based solutions, while conservatives were more likely to suggest education-based strategies, $\chi^2(2)=10.29$, $p=0.006$. This is consistent with the results of the previous question, suggesting that liberals are more likely to prefer a medical or biological view of addiction.

Third, we analyzed responses to the question "Why do people become addicted to drugs?" by conducting a 2 (ideology: liberal vs. conservative) X 3 (response category: individual vs. biological vs. social) chi-square test of independence. We found that liberals were more likely to suggest biological causes, while conservatives were more likely to suggest individual causes, again consistent with the findings for the first two questions, $\chi^2(2)=6.43$, $p=0.04$.

Finally, we examined participants' top choice for most stigmatized condition by coding whether they put addiction first or not. Liberals in our sample were more likely to view addiction as the most stigmatized condition, $\chi^2(1)=6.48$, $p=0.01$. This is consistent with the notion that liberals are more likely to have biological or medicalized view of addiction, which previous research has shown to be associated with greater stigma and lower empathy.

Effects of Personal Experience 31 participants chose not to respond to the question of whether they or anyone they know had dealt with an addiction problem and were therefore excluded from analysis. Of the remaining participants, 394 responded "No" and 324 responded in a way that was coded as "Yes" by the experimenters.

We first analyzed responses to the question "How should someone deal with addiction?" by conducting a 2 (personal experience: yes vs. no) X 3 (response category: informal vs. medical vs. psychological) chi-square test of independence, but found no effects of personal experience, $\chi^2(2)=0.36$, $p=0.84$.

Second, we analyzed responses to the question "How should society deal with addiction?" by conducting a 2 (personal experience: yes vs. no) X 3 (response category: education vs. healthcare vs. policy) chi-square test of independence, but again found no effect of personal experience, $\chi^2(2)=2.21$, $p=0.33$.

Third, we analyzed responses to the question "Why do people become addicted to drugs?" by conducting a 2 (personal experience: yes vs. no) X 3 (response category: individual vs. biological vs. social) chi-square test of independence. We found that people with personal experience with addiction were more likely to point to biological causes, while people with no personal experience were more likely to point to social causes, $\chi^2(2)=10.34$, $p<0.006$. This is consistent with research showing that people with a stigmatized condition (e.g., obesity) are more likely to view that condition as caused by biological factors.

Finally, we examined participants' top choice for most stigmatized condition by coding whether they put addiction first or not. We found that people without any personal experience with addiction were less likely to view addiction as stigmatized, $\chi^2(1)=4.42$, $p=0.036$. This suggests that people who have either experienced addiction themselves or know someone who has are more aware of the stigma associated with the condition.

Responsibility Ratings To assess what factors affected ratings of how responsible for their current situation someone with an addiction is, we fit a 2 (story type: abstract vs. personal) X 2 (label style: medical vs. psychological) ANOVA with the continuous measure of political ideology included as a covariate. There was no main effect of story type, $F(1, 744)=0.84$, $p=0.36$, nor was there an interaction between story type and label style, $F(1, 744)=1.58$, $p=0.21$. However, there was a marginal main effect of label framing, as participants exposed to a psychological label ($M=72.3$, $SD=21.8$) rated individuals with addiction as slightly more responsible for the state of their life compared to those exposed to a medical label ($M=69.3$, $SD=22.3$), $F(1, 744)=2.86$, $p=0.09$. In addition, there was significant effect of political ideology, as more conservative participants gave higher responsibility ratings, consistent with a conservative worldview, $F(1, 744)=44.7$, $p<0.001$.

General Discussion

The results of this study help shed light on the factors that influence the folk psychiatry of addiction, even as they raise important questions for future research.

In line with our predictions, describing addiction in an abstract way (as compared to in a personal narrative) led people to suggest more medical treatments, and fewer psychological treatments for the condition (though it did not affect suggestions for what society should do about the issue or what causes addiction). However, we found little support for the role of one-word linguistic framing in shaping

people's reasoning about addiction. It is possible that our categorical dependent measures were simply not sensitive enough to measure what may be a subtle effect of using a medical or psychological label, but it may also be the case that it takes more of an extended narrative to change people's beliefs about addiction (in line with previous research). It is also possible that linguistic framing may only affect a subset of participants. Indeed, an exploratory analysis suggested that medical labels led liberals (but not conservatives) to select more medical treatment options when they read the abstract (but not personal) story, $\chi^2(2)=5.9$, $p=0.052$. Future work is necessary to explore each of these possibilities.

We also found support for our hypothesis that political ideology and personal experience can impact the folk psychiatry of addiction in significant, predictable ways. Across the board, conservatives in our sample viewed addicts as more responsible for the current state of their lives, and thus preferred non-biological explanations and treatment options. As predicted, personal experience with the condition tended to push people towards a more liberal viewpoint, which was also associated with a greater perception of stigma attached to the condition. These findings are consistent with related work (e.g., Thibodeau, Perko, & Flusberg, *under review*) and raise important questions about the relationship between factors like political orientation and reasoning about complex health conditions, which may have significant real-world implications.

Taken together, the results of the present study provide important information for health professionals, policy makers, and others who wish to use written or spoken materials to educate the public about the causes and treatment of addiction.

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Appendix

Abstract Paragraph: Drug addiction is a [demon / behavioral problem / disease / neurological disorder] that many Americans are dealing with. According to statistics published in 2011, about 8% of Americans age 12 or older need help for substance dependence. This is not just a teenage phase, however. There are more illicit drug users age 26 or older than there are between the ages of 12 and 25. Using drugs often causes a decline in work performance as well as a reduction in health and quality of relationships. Sometimes, drug use can mask symptoms of or even cause other health problems. In fact, prolonged drug use is associated with many serious consequences, including suppressed immune function. Socially unacceptable actions are common among drug addicts. These include lying to friends and family and voluntary isolation, which may help keep loved ones in the dark about the addiction. Surprisingly, only about 11% of those needing help for drug addiction actually receive it. Unfortunately, more people are experiencing drug addiction now than at any time in the past 50 years.

Personal Paragraph: John is dealing with the [demon / behavioral problem / disease / neurological disorder] known as drug addiction. He started using drugs casually a few years ago when he was in college since all his friends were into it. Last year, his girlfriend broke up with him and he was passed over for a promotion at work, and his drug use escalated to a daily routine. John now regularly skips outings with friends and family, preferring to stay home alone where no one will see him getting high. John is currently facing real financial problems and struggling to pay his rent because he is spending so much of his income on drugs. He does not feel like he can ask his family or friends for help since he does not want them to know about his drug use. He did try to quit once on his own, but it was too difficult and he went back to using almost immediately. He doesn't think there is anyone who understands or who even wants to help him, which makes him feel guilty and alone. Meanwhile, his work, relationships, and health are suffering. He would really like to get back to the way things used to be but he does not know what to do.