Direct and Indirect Freedom in Addiction: Folk free will and blame judgments are sensitive to the choice history of drug users

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Word count: 4851

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Abstract

People view addiction as a source of diminished free will and free will as a requisite to moral responsibility. Accordingly, people should judge addicts as less blameworthy when they act immorally. Yet, people are also sensitive to the personal histories of moral actors, such that the way by which people became addicted may influence these judgments. That is, people's intuitions may track two types of choices: *directly free* acts are volitionally unconstrained during the moment of action, whereas *indirectly free* acts result from temporally prior directly free acts. Across two studies (N=806), we compare people's moral intuitions about cases in which the actor becomes addicted by force or by choice. We find that perceptions of reduced free will partially mediate an association between choice (vs. no choice) in addiction and moral blame for a bad act (Study 1). We replicate this pattern with another case, and show that blame judgments are stronger when the bad act is related (vs. unrelated) to obtaining the addictive substance (Study 2). Our work highlights that lay people evince relatively nuanced intuitions about the role of free will in addiction and morality, tracking direct and indirect freedom when doling out moral blame.

Keywords: free will, moral judgments, blame, addiction

Word count: 197

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1. Lay thinking about addiction and free will

Lay people associate addiction with diminished free will (Racine et al., 2017; Rise & Halkjelsvik, 2019; Vonasch, Clark, et al. 2017[1]; Vonasch et al., 2018)—an ability to exercise choice or control over behaviors or actions (Feldman et al., 2014; Monroe & Malle, 2010; Shepard & Reuter, 2012). People think addiction diminishes that kind of control. Because perceptions of moral responsibility correspond with perceptions of free will (e.g., Clark et al, 2014; Stillman et al., 2011), addicted agents are viewed as less morally responsible for wrongdoing (e.g., Vonasch et al., 2017; Vonasch et al., 2018).

Prior work has focused on diminished free will judgments by appeal to the actor's present choices. In contrast, the *way* in which an agent's present psychological condition has been created by their *histories* influences folk attributions of moral blame and free will (Gill & Cerce, 2017; Nadler, 2012; Nadler & McDonnell, 2011; Taylor & Maranges, 2020). For example, Taylor and Maranges (2020) focused on histories involving psychologically manipulated agents and found people attributed diminished control, freedom, and responsibility to those agents.

We link histories to drug use and predict that folk judgments will be sensitive to details about how agents become addicted. People may believe choice plays a role in addiction: even if someone lacks a choice when the addiction has taken hold, they may have still *freely chosen* to diminish their ability to make choices causally downstream—i.e., by choosing to consume the addictive substance in the first place.

[1]We refer to this as 'Vonasch et al. (2017)' and 'Vonasch and colleagues (2017)' throughout the paper; not to be confused with Vonasch, Maranges, & Baumeister, 2017, which we cite in full any time we reference it.

Philosophers distinguish between *direct* and *indirect* freedom (e.g., Bishop 1989, p.71; Clarke 2003, p.76; McKenna, 2012, p.155; Mele, 2020, p.6). Some actions performed by agents gain their status as free in virtue of a direct exercise of certain free will abilities at that time. McKenna (2012) labels these actions *directly* free because they involve the exercise of freedom during the moment of action. Alternatively, some acts do not involve direct exercises of free will capacities themselves, but instead gain their status as free in virtue of some causal (or historical) relation to temporally prior directly free actions. These acts are labeled as *indirectly* free because they derive their agential status from prior exercises of directly free actions.

Philosophers have sometimes connected attributions of moral responsibility to free will judgments (e.g. Kane (1985), Vihvelin (2013); Frankfurt (1969); but see Fischer (2012) and Scanlon (1998) for examples of some exceptions). It is therefore no surprise that there has also been a significant amount of philosophical work that parallels the distinction between direct and indirect freedom in the context of moral blame and praise. According to so-called "tracing" accounts of moral responsibility, the appropriateness of attributing blame or praise to a moral agent is not exhausted by their responsibility-conferring abilities or control at the time of action (Fischer and Ravizza, 1998; Timpe, 2011; King, 2014; Mele, 2019). Philosophers may argue that it is plausible to attribute blame to drunk drivers for driving recklessly even when they lack sufficient control due to their present drunken condition. Specifically, they can find room to blame these agents by locating their responsibility in producing their present conditions in which they would lose control (e.g. freely deciding to chug whisky and get behind the wheel).

In addiction, agents might lack sufficient control over their present actions due to their addiction in a way that diminishes their *direct* freedom. Nevertheless, these agents may have freely put themselves in their present addictive and volitionally constrained condition in a way

that amplifies their *indirect* freedom. For example, a person who freely chose to take the drugs that caused their addiction may be indirectly free; alternatively, a person lacks indirect freedom if they had no original choice in taking the drugs that eventually caused their addiction. Similarly, ordinary thinking about moral blame and praise may be sensitive to historical values (e.g. tracing) involving prior decisions to try addictive substances. Thus, the source of free will and moral responsibility need not be exclusively tied to a person's *present* abilities and control. People can locate free will in the previous exercise(s) of directly free action(s).

2. Present Research

Despite the overwhelming philosophical interest in tracing moral responsibility and accounts of indirect freedom, there have not been significant systematic investigations into whether these concepts are active in ordinary thinking about agency. To investigate whether ordinary people distinguish between direct and indirect freedom (and responsibility) in addictive behaviors, we conducted two experiments. Study 1 was a replication and extension of Vonasch et al. (2017). Participants read a vignette about a bad acting agent who was addicted—having made a free choice to try a drug or not—or who was not addicted and then judged the actor's free will and blameworthiness. We expected to replicate Vonasch et al.'s (2017) finding that folk judge people with addictions to have less free will than people without addictions. Additionally, we extended prior work by manipulating the way the person became addicted—either by choice or by force. Specifically, we test the hypothesis that people judge an indirectly free actor (who made a prior directly free choice to try the addictive substance) to have more free will than a person who lacks indirect freedom (who *did not* make a prior directly free choice to try the addictive substance). We also expected perceptions of free will to partially account for higher blame judgments of addicted, versus not addicted, individuals.

Study 2 was a conceptual replication and extension of the first study. We made several methodological improvements to our vignettes and measures, including creating a new measure of indirect free will, distinct from the direct free will measures typically used in previous research. Again, we manipulated the way in which the agent historically had become addicted (i.e., by choice or by force) and participants judged whether the agent had direct and indirect free will. We predicted that the actor who had freely chosen to try the drug that led to their addiction would be judged as having more free will than someone who was forced into trying the drug they became addicted to. Likewise, we expected a similar pattern for blame judgments. Finally, we explored whether free will and blame judgments depended on whether the bad act was directly related to obtaining the addictive substance.

3. Study 1

We tested whether laypeople's perceptions of an actor's free will and blameworthiness depend on the actor's addiction history—addicted by choice, addicted by force, or not addicted. We preregistered this study (https://aspredicted.org/blind.php?x=jb8i57).

3.1 Method

Participants. Power analyses indicated for an effect size of d=0.4, N=300 is needed to reach 80%power. Expecting many exclusions and in order to increase power, we recruited four hundred American participants using TurkPrime (Litman, et al., 2017). We excluded participants who failed to answer all questions or pass our attention check (n=20), leaving a final sample of 382 participants (177 women, 204 men, 1 nonbinary; M_{age}=39; 75%White, 12%Asian, 9%Black, 6%Latino, 1%Native American, and <1%other).

Procedure and materials. Participants were randomly assigned to read one of three vignettes involving a woman named Mary who drove recklessly across town to buy drugs or food. We

adapted the vignettes used in Vonasch et al. (2017). In the *choice* condition, Mary exercised her free will in trying addictive drugs at a party. In the *no choice* condition, Mary was force fed the same addictive drugs at a party. In the *no drug* condition (control), Mary was not involved with drugs, but sped across town in order to get ingredients for a dinner party. See supplemental materials (henceforth SM) for verbatim vignettes. Next, participants responded to free will and blame items on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale, and an open response attention check item, *Why did Mary speed across town*? Participants were excluded if their responses did not answer the question correctly.

Free will. Participants indicated the extent to which they agreed with 5 statements: (1) *Mary was in control of her actions when she sped across town*, (2) *Mary is responsible for her actions when she sped across town*, (3) M*ary had free will when she sped across town*, (4) *Mary was compelled to speed across town*, (5) *Mary had no choice but to speed across town*.

Blameworthiness. Participants indicated the extent to which they agreed with the statement, *Mary deserves blame for speeding across town.*

3.2 Results

Validating the Free Will Measure. The five items did not cohere reliably (Cronbach's α=.64; to be sufficiently reliable, α should be above .70). Sufficient reliability was achieved by dropping the two reverse coded items, which were the least reliable. The resulting three-item measure included control, responsible, and free will, α=.75. (The pattern of results was similar with 5-item measure, see SM).

Free Will Attributions. A significant omnibus ANOVA revealed differences among the three conditions in attributed free will, $F(2,379)=19.50, p<.001, \eta^2=.093$, see Figure 1, Table 1. Planned comparisons showed, as predicted, people attributed more free will to Mary in the no drugs

condition versus the choice condition, $t(379)=4.34, p<.001$. Similarly, as predicted, people attributed more free will to Mary in the no drugs condition versus the no choice condition, $t(379)=6.05, p<.001$. However, although the means were in the predicted direction, people did not attribute significantly more free will to Mary in the choice condition versus the no choice condition, $t(379)=1.72, p=.085, p_{tukey}=.197$. Nonetheless, an exploratory linear contrast supported the predicted linear decrease in free will from the choice condition to the no choice condition to the no drugs condition, $b=-.60, t(379)=6.05, p<.001$.

Figure 1

Attributed free will across the three experimental conditions (error bars represent 95%confidence intervals in each figure)

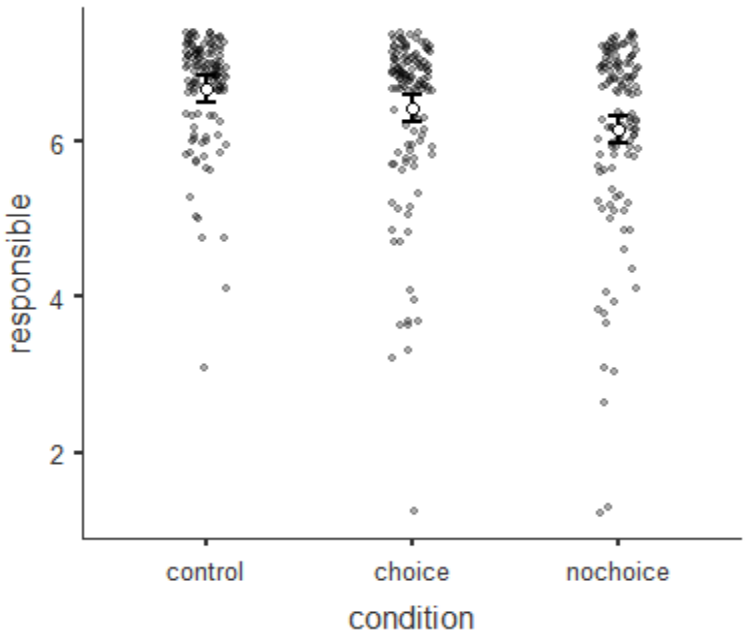


Table 1

Attributed free will across conditions, Study 1

			95%Confidence Interval	
Condition	**Mean**	**SE**	**Lower**	**Upper**
Control	6.48	0.0996	6.28	6.68
Choice	5.87	0.0993	5.67	6.06
No choice	5.63	0.0996	5.43	5.82

Blame Attributions. We conducted similar analyses for attributed blame. However, the omnibus ANOVA did not detect any differences between conditions, $F(2,379)=0.23$,$p=.793$, see Table 2. The mean response in all conditions was above 6.2 on a scale from 1 to 7, so the lack of differences between conditions could be due to a "ceiling effect," where our measure failed because most participants responded using the top of the scale. The linear contrast was not significant, $b=-.06$,$SE=.09$,$t(379)=0.62$,$p=.534$.

Table 2

Attributed blame across conditions, Study 1

			95%Confidence Interval	
Condition	**Mean**	**SE**	**Lower**	**Upper**
Control	6.33	0.0983	6.14	6.52
Choice	6.32	0.0979	6.13	6.51
No Choice	6.24	0.0983	6.05	6.44

Mediation Analysis. Although there were no differences by condition in blame judgments, we had decided a priori to test whether the effect of condition (i.e., choice/drug, no choice/drug, control/no drug) on blame judgments was accounted for by perceptions of the actor's free will. Note that the more free will attributed to the actor, the more blame attributed to him, $r=.57$,$p<.001$. Accordingly we conducted a 10,000 bootstrapping resample multicategorical mediation analysis using Model 4 with the PROCESS Macro for SPSS (Preacher & Hayes, 2004; Hayes & Preacher, 2014), in which condition was the predictor, free will attributions the mediator, and blame judgments as the outcome. (We used this Macro rather than JAMOVI for this analysis because to our knowledge JAMOVI cannot handle multicategorical mediation).

Compared to the control condition (coded as 1), the addiction conditions (i.e., no choice and choice) predicted lower blame judgments (coded as 0), partially through perceptions of reduced free will, b=.26,SE=.08,95%CI[.12, .42]. However, when comparing the no choice to the control and choice conditions, the effect of condition on blame was not mediated by free will attributions, b=-.08,SE=.08,95%CI[-.24, .07]. That is, people viewed the addicted actors as having less free will than the non-addicted actor, and, in turn, as less blameworthy for speeding across town.

3.3 Discussion. Study 1 replicates previous findings that the lack of control caused by addiction attenuates free will judgments (Vonasch et al., 2017). People thought addiction reduced Mary's free will and judged that Mary had slightly but non-significantly less free will when she had no choice in initially taking the substance she became addicted to. Furthermore, laypeople judged addicted Mary to be less blameworthy than non-addicted Mary, and this was accounted for by perceptions of attenuated free will in addiction.

Notwithstanding this initial support, we had expected the causal history to measurably influence judgments of Mary's free will, but the difference was not significant. This may have been a result of ambiguities in whether Mary was truly addicted (as a few participant responses to the open ended attention check question suggested), the free will items' insensitivity to *indirect* freedom, and potential ceiling effects on the free will and blame items.

4. Study 2

Study 2 was a conceptual replication of Study 1 that addressed limitations of that study and also explored a novel aspect of the addicted person's act. First, we used a new set of vignettes to ensure generalizability of results. Second, we chose a substance more widely believed to be strongly addictive, i.e. heroin, to avoid ambiguities with respect to whether addiction played a

role in the causal chain leading to the agent's bad act. Third, to reduce blame motivation and avoid ceiling effects on free will and blame measures, we made the act in the vignette less bad (i.e., potentially harmful) versus the first study. Finally, we measured free will in two separate ways to operationally distinguish direct free will from indirect free will. We also explored whether addiction attenuated blame differently for acts done in service of an addiction (i.e., to obtain the drug), compared to other acts. Given we established in Study 1 that people view addicted persons as having less free will than non-addicted agents and the aim of this study was to investigate whether laypeople tracked indirect versus direct freedom, we did not include a no drug control condition. Thus, this study had a 2(choice vs. no choice) x 2(addiction-related vs. not addiction-related) factorial design. We preregistered this study (https://aspredicted.org/blind.php?x=nx8ej8).

4.1 Method

Participants. In order to sufficiently power the 2x2 design and given exclusions, we recruited 450 participants using Turkprime. We excluded participants who failed to answer all questions or our attention check item (n=20), leaving a final sample of 430 participants (201 females, 224 males, 4 nonbinary, 1 undisclosed; M_{age}=39.8; 74%White, 9%Asian, 9%Black, 5%Latino, <1%Native American, <1%other).

Procedure and materials. Participants were randomly assigned to read one of four vignettes involving a man named John. John either makes a choice to try heroin (choice) or is forced to try heroin (no choice) and subsequently yells at a bank teller because he could not get money from an ATM to buy groceries (not addiction-related) or drugs (addiction-related). See SM for verbatim vignettes. Participants then responded to free will and blame items using scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Finally, participants answered an open response

attention check item, *Briefly, why did John yell at the bank teller?* Participants were excluded if their response did not correctly answer this question.

Free Will

Direct free will. Participants responded to the same items used in Study 1, adjusted for the different vignette. These items include, (D1) *John was in control of his actions when he yelled at the bank teller,* (D2) *John is responsible for his actions when yelling at the bank teller,* and (D3) *John had free will when yelling at the bank teller*. We averaged across these items (M=5.19, SD=1.60, α=.87).

Indirect free will. Participants responded to 5 items about indirect freedom: (I1) *John is indirectly responsible for yelling at the bank teller because John had a choice in becoming addicted in the first place,* (I2) *John had indirect free will when he yelled at the bank teller because John had a choice in becoming addicted in the first place,* (I3) *John was indirectly in control of his actions when he yelled at the teller because John had a choice in becoming addicted in the first place,* (I4) *John is responsible for becoming addicted in the first place and therefore for his actions at the bank,* and (I5) *John freely put himself in the position of losing control.* We averaged across these items (M=4.04, SD=1.96, α=.93).

Blameworthiness. Finally, participants responded to 2 items about blame: (B1) *John deserves blame for yelling at the bank teller*, and (B2) *John deserves blame because he created his current situation of addiction.* We averaged across these items (M=4.87, SD=1.75, α=.70).

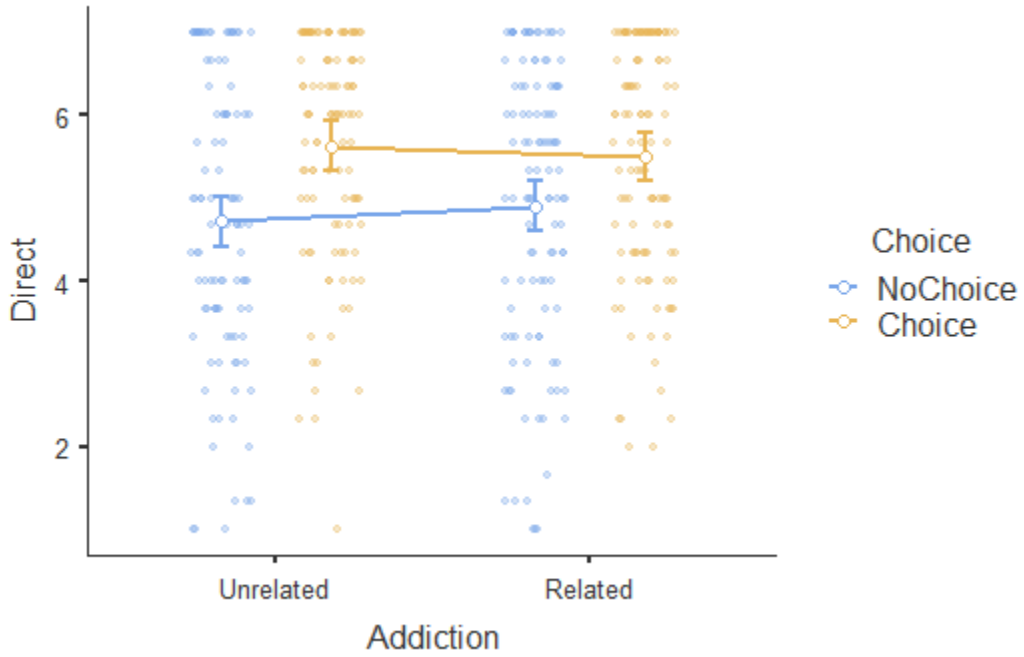
4.2 Results

Direct Free Will Attributions. We conducted a 2 (choice vs. no choice) x 2 (addiction-related vs. non-related action) ANOVA predicting direct free will, see Figure 2. There was a significant effect of choice, $F(1,426)=24.43$, $p<.001$, $\eta^2_p=.054$, but no significant effect of either addiction-

relatedness, $F(1,426)=0.03, p=.863, \eta^2_p<.001$, or the interaction between choice and addiction-relatedness, $F(1, 26)=1.09, p=.296, \eta^2_p=.003$. Planned contrasts revealed, as predicted, more perceived direct free will in the choice conditions versus the no choice conditions, for both addiction-related and unrelated actions, $t(426)=4.94$, $p<.001$.

Figure 2

Direct free will attributions for each condition, Study 2

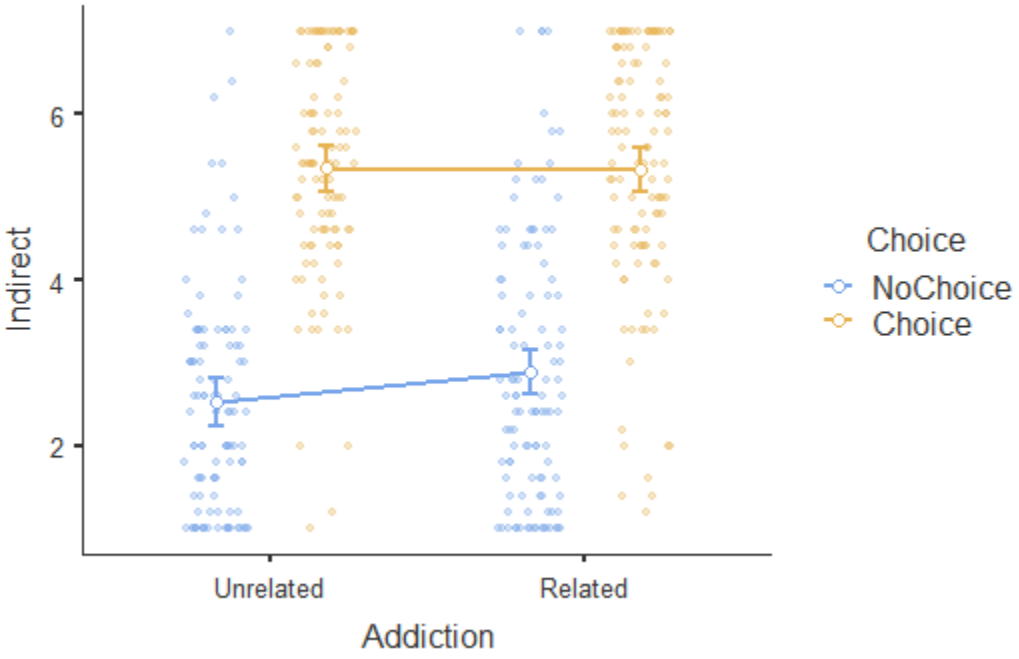


Indirect Free Will Attributions. We conducted a 2 (choice vs. no choice) x 2 (addiction-related vs. non-related action) ANOVA predicting indirect free will, see Figure 3. There was a

significant effect of choice, $F(1, 426)=351.83$, $p<.001$,$\eta^2_p=.0452$, but no significant effect of either addiction-relatedness, $F(1,426)=1.50$,$p=.221$,$\eta^2_p=.004$, or the interaction between choice and addiction relatedness, $F(1,426)=1.88$,$p=.171$,$\eta^2_p=.004$. Planned contrasts revealed, as predicted, more perceived indirect free will in the choice conditions versus the no choice conditions, for both addiction-related and unrelated actions, $t(426)=18.8$,$p<.001$.

Figure 3

Indirect free will attributions for each condition, Study 2

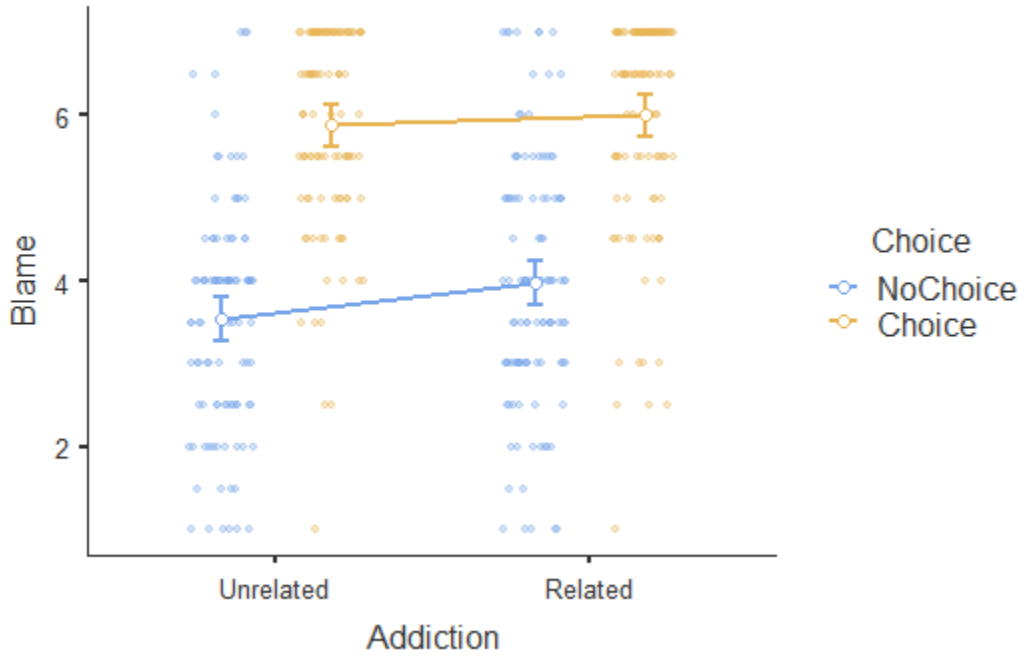


Blame Attributions. We conducted a 2 (choice vs. no choice) x 2 (addiction-related vs. non-related action) ANOVA predicting blame, see Figure 4. There was a significant effect of choice, $F(1,426)=274.18$,$p<.001$,$\eta^2_p=.392$, and a significant effect of addiction-related action,

$F(1,426)=4.60, p=.033, \eta^2_p=.011$, but no significant interaction between choice and addiction, $F(1,426)=1.39, p=.239, \eta^2_p=.003$. Planned contrasts revealed, as predicted, more blame in the choice conditions versus the no choice conditions for both addiction-related and unrelated actions, $t(426)=16.6, p<.001$. An exploratory post-hoc test revealed participants blamed John more for an addiction-related action than an addiction-unrelated action, $t(426)=2.14, p=.033$.

Figure 4

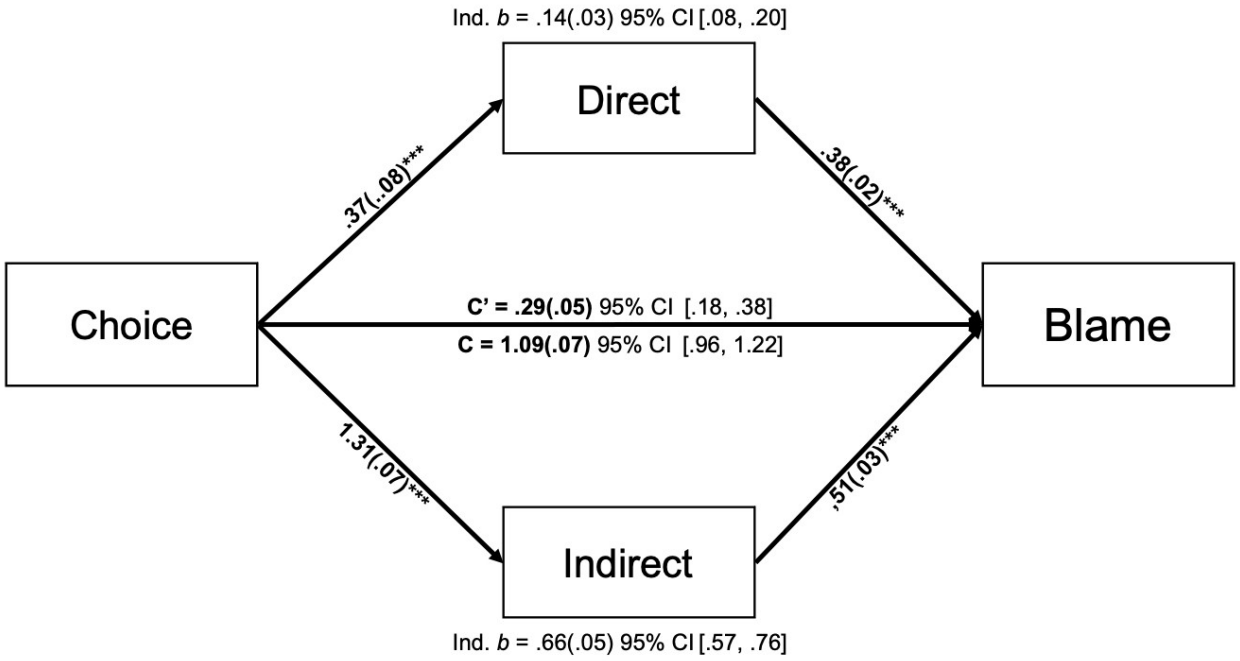
Blame attributions for each condition, Study 2



Mediation. We conducted mediation using JAMOVI's GLM Mediation Model. Both direct free will and indirect free will separately and uniquely mediated the effect of condition on blame, such that more perceived direct free will increased blame and more perceived indirect free will increased blame (see Figure 5, Table 3; for separate analyses, see SM).

Figure 5

Mediation model



Note. †p<.10, *p<.05, **p<.01, ***p<.001

Table 3

Mediation table showing direct and indirect free will both mediate the effect of choice condition on blame

				95% Confidence Interval (a)				
Type	**Effect**	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**z**	**p**
Indirect	Choice1 ⇒	0.14	0.03	0.08	0.20	0.09	4.70	< .001

	Direct ⇒ Blame							
	Choice1 ⇒ Indirect ⇒ Blame	0.66	0.05	0.60	0.76	0.41	13.6	< .001
Component	Choice1 ⇒ Direct	0.37	0.08	0.22	0.52	0.23	4.93	< .001
	Direct ⇒ Blame	0.38	0.02	0.33	0.42	0.37	15.7	< .001
	Choice1 ⇒ Indirect	1.31	0.07	1.17	1.45	0.67	18.7	< .001
	Indirect ⇒ Blame	0.51	0.06	0.46	0.56	0.61	19.7	< .001
Direct	Choice1 ⇒ Blame	0.29	0.05	0.18	0.38	0.17	5.60	< .001
Total	Choice1 ⇒ Blame	1.09	0.07	0.96	1.22	0.62	16.5	< .001

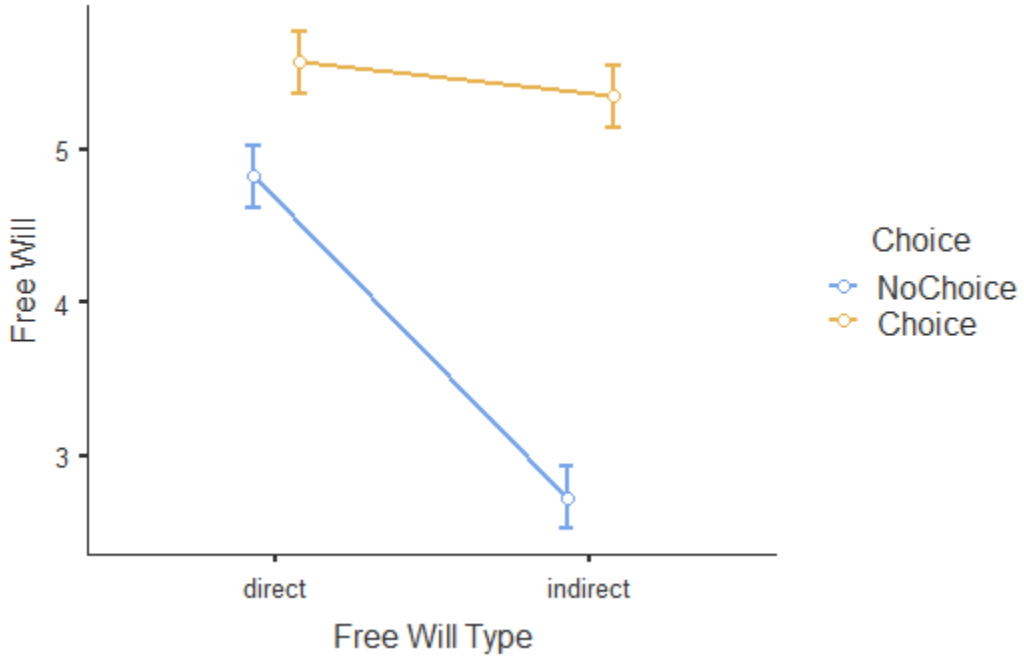
Note. (a) Confidence intervals computed with method: Standard (Delta method)

Distinguishing indirect and direct free will. Direct free will and indirect free will were positively correlated, $r(430)=.49, p<.001$. This suggests that although they are related concepts, indirect and direct free will are distinct. Moreover, the mediation analysis revealed that each type of free will had a unique indirect effect on blame, with indirect free will more strongly influencing blame ($b=.66, SE=.05$) than direct free will ($b=.14, SE=.03$), providing further

evidence of the distinctiveness of direct and indirect free will. See Figure 6 (details in SM) for exploratory mixed model ANOVA results.

Figure 6

Direct versus indirect free will judgments in the choice and no choice conditions, Study 2



4.3 Discussion

Study 2 found that people attributed more direct free will, especially indirect free will, and blame to an actor who initially made a free choice to take drugs, leading to their addiction. Thus, the results supported the core prediction: ordinary judgments of a person's free will depend not only on their direct freedom to act at present, but also on their indirect freedom. Even though each vignette featured a person who was addicted to heroin, a highly addictive drug that presumably

drives behavior within addiction, participants distinguished whether the agent was responsible for choosing that path or whether they were forced into it. Although participants did not attribute more or less free will to the addicted agent who acted badly while trying to obtain drugs (versus groceries), they did ascribe more blame to that agent.

5. General Discussion

Essential to a well-functioning society is the universal tendency to hold others morally responsible for their bad acts (Tomasello & Vaish, 2013), and this inclination depends on and also feeds into attributions of free will of bad actors (Clark et al., 2014). Addiction is one case where such a strong inclination to perceive free will and dole out blame is dampened. Indeed, prior work demonstrates that people view addiction as precluding an addicted person's free will and moral responsibility (e.g., Vonasch et al., 2017). However, the histories of moral agents' matter (Taylor & Maranges, 2020) and people with addiction may have reached that state via different routes. Our work is the first to test whether people's attributions of free will and blame track bad actor's history of choice, or lack thereof, to try the drug to which they become addicted. To this end, we rely on a distinction philosophers have proffered (Bishop, 1989; Clarke, 2003; McKenna, 2012; Mele, 2020): *directly free* acts are volitionally unconstrained during the moment of action, whereas *indirectly free* acts are the result of temporally prior directly free acts.

Like some philosophers (e.g., McKenna, 2012; Mele, 2020), ordinary people distinguish between actions that were indirectly free versus indirectly unfree, even when they judge the focal bad act was directly unfree—indeed, even when they judge the focal act stemmed from an addiction. People attribute free will and moral responsibility to others because it signals to others information about whether the targeted person possesses desirable intentions or good will and

helps predict future behavior. Empirical work has provided support for this: people more strongly morally blame others for behaviors when their presumed intent is antisocial or selfish versus not (e.g., Alicke, 2000; Malle et al., 2014; Siegal et al., 2017). This sensitivity to intent and future threats may explain why subjects attributed heightened moral blame for performing addiction-related actions (e.g., getting money to buy drugs) when compared to addiction-unrelated actions.

Folk think addiction saps direct free will in the moment—which is why in Study 1 addiction partially excused addicts from blame for their harmful addictive behaviors. However, folk also think addiction is compatible with blame for acts one took under the influence, but that were indirectly free. This may help explain why folk judge people to be blameworthy for drinking and driving—though the alcohol sapped their judgment and free will in the moment, they were indirectly free in that they could have decided not to put themselves in a situation where they would drink and drive (Critchlow, 1983).

There are some notable differences that emerged across Study 1 and Study 2. Historical factors (i.e., being forced into addiction) had a much bigger effect in the latter than the former. The ceiling effects observed in Study 1—likely due to the severity of moral violation—is one possible explanation for why there were notable differences. Previous research suggests that more severe moral violations accompany amplified judgments of free will and responsibility (Nichols & Knobe, 2007; Feldman et al., 2016). Since reckless driving often has very severe consequences (i.e., death of innocents, damage to property), people may have been less sensitive to addiction-related considerations (including compulsory addiction) in forming judgments about free will and moral responsibility when compared to Study 2. This may also explain why we found that *direct* freedom judgments were weaker in Study 2 than Study 1.

Another important goal in Study 2 was to expand on the findings in the previous experiment by investigating the robustness of the addiction effect on free will judgments. The results of Study 2 indicate that the relatedness of the action to addiction made no difference in attributions of free will. The free will judgments between addiction-related (i.e., retrieving money for drugs) and addiction-unrelated (i.e., retrieving money for groceries) actions were the same across conditions—although differences in blame judgments were observed. There are at least two possibilities for these findings. First, it may have been the case that the subjects really do not make fine-tuned discriminations between actions that facilitate the satisfaction of addictive impulses from those that do not when it comes to thinking about free will. Perhaps merely drawing attention to a person's addiction elicits beliefs about a general lack of choice in acting, not just a lack of choice in retrieving drugs. Second, it may have been that, since we described the addicted person in Study 2 as *frustrated from their drug addiction*, subjects viewed their subsequent rude behavior as stemming from the addiction itself, even if this person was trying to retrieve groceries. Future research should attempt to tease apart these nuances, but our initial findings suggest that addiction related attenuated judgments extend beyond actions aimed at receiving drugs.

6. Limitations and Future Directions

Although sufficient power, preregistration, and replication increase our confidence in results reported here, there are a few limitations worth noting. First, our samples were drawn from American and largely WEIRD (Western, Educated, Industrialized, Rich, and Democratic) populations, which limits the generalizability of our results (Henrich et al., 2010).

Second, in Study 2, we manipulated whether the bad act was performed in pursuing the addictive drug or some other goal (i.e., buying groceries). People attributed no more or less free

will based on addiction-relatedness, but did attribute more blame to the addiction-related bad act. One important question is whether this pattern would generalize to other cases of a person's addictive substance-related vs. not-related act. In some cases—perhaps after the person has been addicted for a long time and must get their fix to function or when the person suffers painful withdrawal without the drug—people may perceive the drive for the addictive substance as an excuse and blame attributions would be attenuated. People may want to avoid responses that imply they have a hard heart and instead give addicted persons the benefit of the doubt that they are doing their best to quit. Future research should test this possibility.

Third, we used a heavy-handed manipulation of historical control over events (i.e., someone forcing the actor to consume an addictive drug vs. an actor making a voluntary choice). One can imagine many cases of non-choice that fall somewhere between these two extremes and likely reflect histories of choice in addiction in the real world. Future research could investigate whether more subtle losses of control have similar effects on perceived indirect free will. For example, suppose a person who is financially desperate is offered money to try a highly-addictive substance. Are people who are in need and economically rewarded for trying a drug that leads to addiction perceived to having less free will than those who did not become addicted via economic exchange? Some people may view the exchange as one of coercion, impeding free will, whereas others may view it as featuring an autonomous and free choice.

Fourth, in focusing on bad acts or violations of proscriptive norms, we are not able to make claims about freedom, addiction, and morally good acts (violation of or obedience to prescriptive norms). Imagine that a person, due to a lack of volitional control stemming from addiction, volunteers their time and effort toward mentoring fellow addicted persons. Previous research finds that people think differently about proscriptions and prescriptions (e.g., Janoff-

Bulman et al., 2009) and attribute less free will to persons performing good acts when compared to bad acts (e.g., Clark et al., 2018). If an addicted person performs an act that is generally regarded as morally positive, do people generally attribute less indirect free will to them? Are these judgments sensitive to how addicted persons became addicted in the first place? Perhaps ordinary people care less about how people came to be addicted if their lack of control generally promotes net positive moral goodness in the world.

7. Conclusion

Folk conceptions of free will and moral responsibility are not exhausted by narrow considerations of choice and control during the moment of action. If people are provided with historical details relevant to explaining *why* an agent lacks control in the moment, people shift focus away from direct control—especially when the agent in question has freely put themselves in their present addicted condition. People blame others for bad actions, even when their addiction reduces their control in the present, because their past selves should have prevented their present selves from losing control.

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