



Gratitude, Power, and Temporal Discounting: Investigating Mechanisms for Reducing Impatience

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ABSTRACT

Gratitude and power are two interpersonal phenomena that affect temporal discounting. Based on recent research in the field of emotions and temporal discounting, the present study tested two competing hypotheses about the mechanisms and effects of these phenomena on temporal discounting, the first about social value and the second about future orientation. Our first hypothesis was that gratitude and increased power, indicating high social value, should lead to decreased temporal discounting than reduced power that implies a lower social value. Our second competing hypothesis was that if increased power, through a sense of distance from others, leads to increased future orientation, then decreased power and gratitude should lead to higher temporal discounting. As per our first hypothesis, we found that the gratitude group showed significantly less impatience than the low-power group, whereas the high-power and gratitude groups did not differ from each other in temporal discounting. Our results mostly supported social value, but not future orientation, as a mechanism for how gratitude and power affect temporal discounting. Future research directions are discussed.

INTRODUCTION

People tend to prefer immediate over delayed rewards, and this can occur even if the later reward is larger. This preference, known as temporal discounting, has been studied in tandem with other factors that frequently impact decisions, such as power and emotion, since we make many of our substantial decisions relating to intertemporal choices as we are in emotional states and/or social contexts. The previous studies about the underlying mechanisms for how gratitude and power affect impatience exhibit some paradoxes. We aimed to resolve these paradoxes by proposing two competing hypotheses. First, it has been indicated that positive emotions engender increased perceived warmth and competency, which increase social value (the value assigned to a person by others in a social group) and, subsequently, patience (Valdesolo & DeSteno, 2014). Thus, our first hypothesis was that gratitude (warmth) and power (competency) will both increase patience through increased social value. We predicted grateful and high-power individuals to have lower temporal discounting than low-power individuals, since both gratitude and high power indicate increased social value, while low power indicates low social value. Our second hypothesis challenged the first one. Smith and Trope (2006) found that power increases construal level, future orientation, and abstract thinking through a sense of distance from others. Joshi and Fast (2013) demonstrated that increasing power reduced temporal discounting, mediated by the connection with the future self. Gratitude, in contrast, embeds people deeply into social relationships. Through this reasoning, we proposed a competing hypothesis to our first one: if power increases the construal level and, subsequently, diminishes temporal discounting, gratitude and decreased power should decrease the construal level and, consequently, lead to higher temporal discounting compared to elevated power.

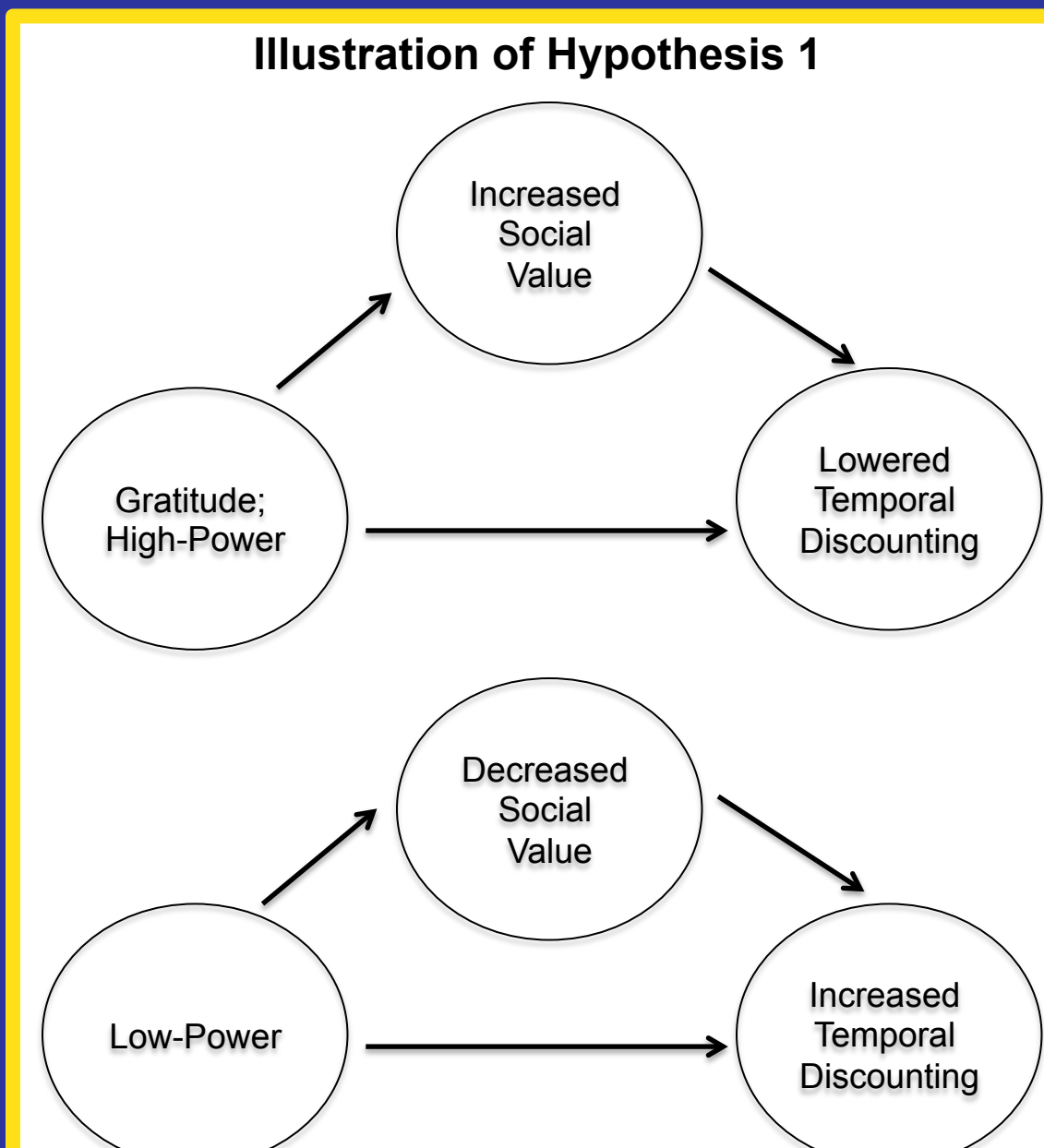


Figure 1. Hypothesis 1: Social value mediates the relationship between power/gratitude and temporal discounting.

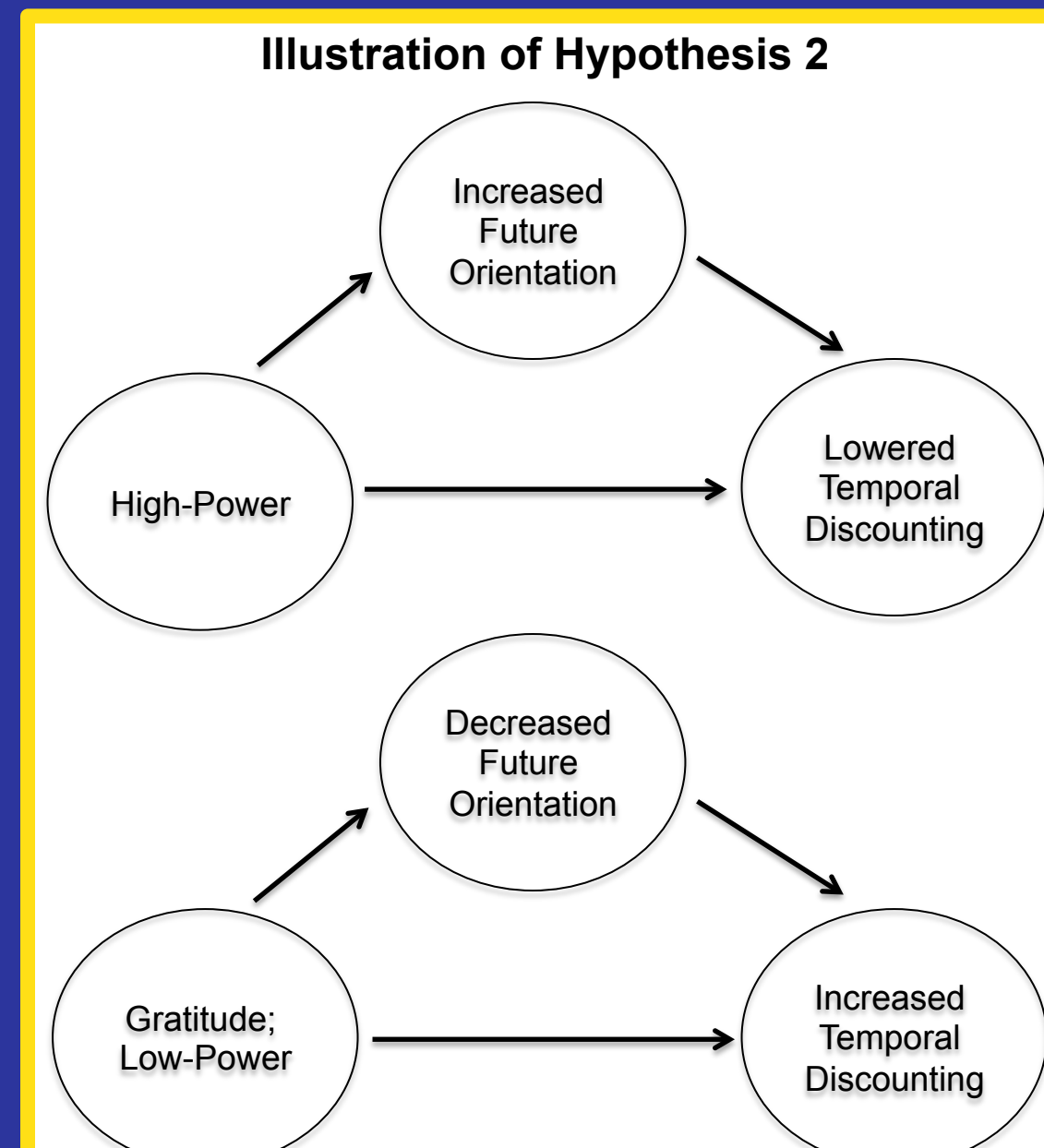


Figure 2. Hypothesis 2: Future orientation mediates the relationship between power/gratitude and temporal discounting.

METHODS

Participants

University of Michigan undergraduates ($N=157$) participated in a laboratory setting for marketing subject pool credit.

Procedure

Four conditions (induced through a recall paradigm):

- Experimental conditions: High-power induction, low-power induction, gratitude induction
- Control condition (no induction)

Emotion manipulation check: On a 5-point scale (1="not at all"; 5="very much"), participants indicated how much they felt the state descriptors provided (e.g., thankful, powerful, dominant, etc.)

Inclusion of Others in Self (IOS) scale (Ernsner-Hershfield et al., 2009): Tested future self-continuity. Participants selected the circle pair that best described how "connected" and how "similar" they felt to their future selves in ten years (coded as 1="not connected at all"; 5="extremely connected").

Considerations of Future Consequences Scale (CFC-14) (Joireman et al., 2012): Using a 5-point scale (1="extremely uncharacteristic"; 5="extremely characteristic"), participants indicated their concern with future outcomes (CFC-Future) and concern with immediate outcomes (CFC-Immediate).

Temporal discounting task: Outcome measure; 27 choice trials, each participant made tradeoff choices for money, between a sooner, smaller reward versus a later, larger reward.

RESULTS

Temporal Discounting Results Across Conditions

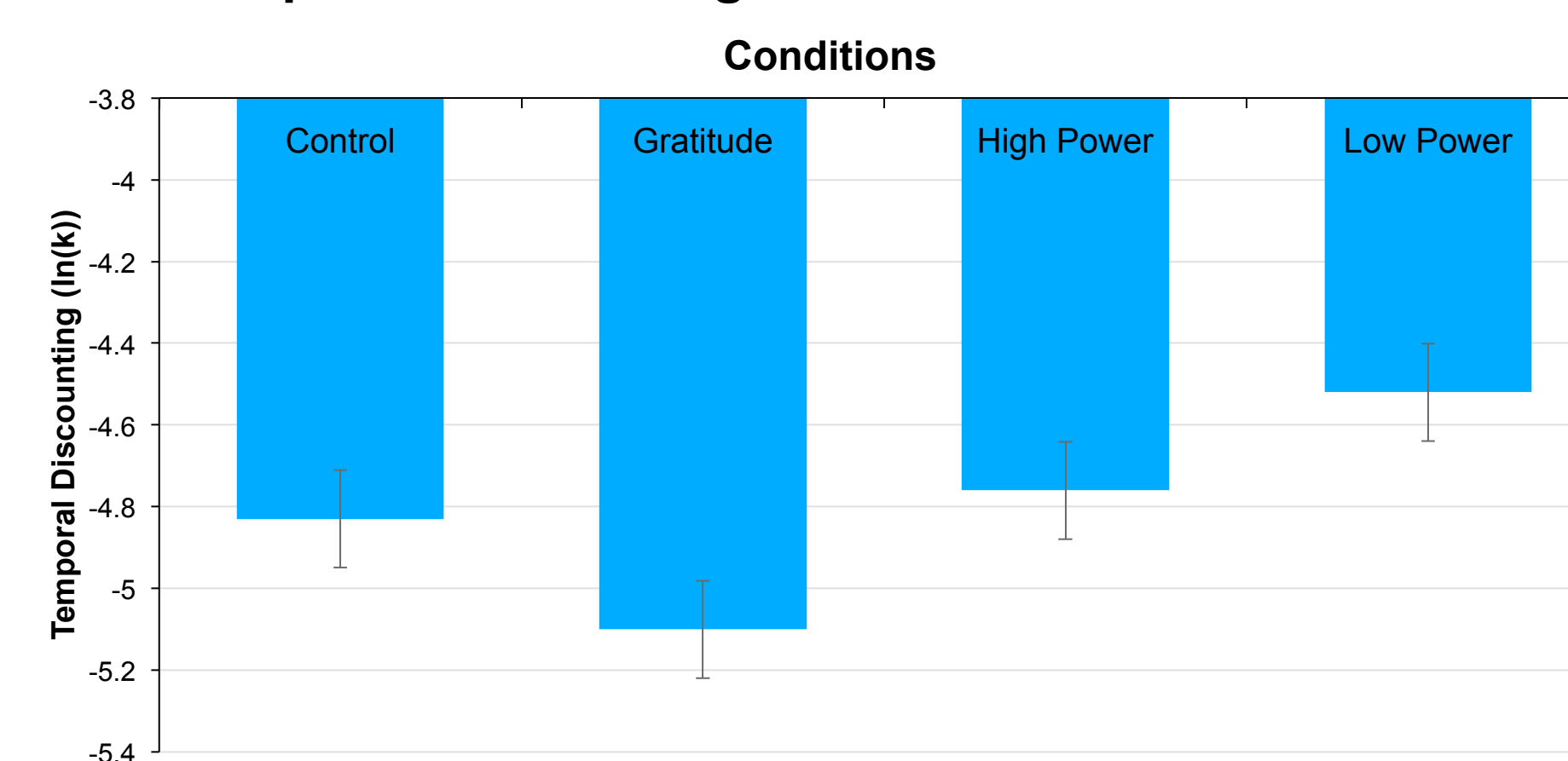


Figure 3. Normalized temporal discounting rate for all participants across four conditions

- Due to non-normal distributions of the overall k values, our discount factor was calculated through the log transformation of discount rates. From our planned contrast of gratitude and low power in temporal discounting, we found that the gratitude group discounted less compared to the low-power group, matching our prediction in our first hypothesis ($M_{Low Power} = -1.96$, $SD_{Low Power} = .54$; $M_{Gratitude} = -2.21$, $SD_{Gratitude} = .57$; $t(81.24) = -2.08$, $p = .04$). We did not find any other group differences in temporal discounting.

Future Orientation Mechanism Results Across Conditions

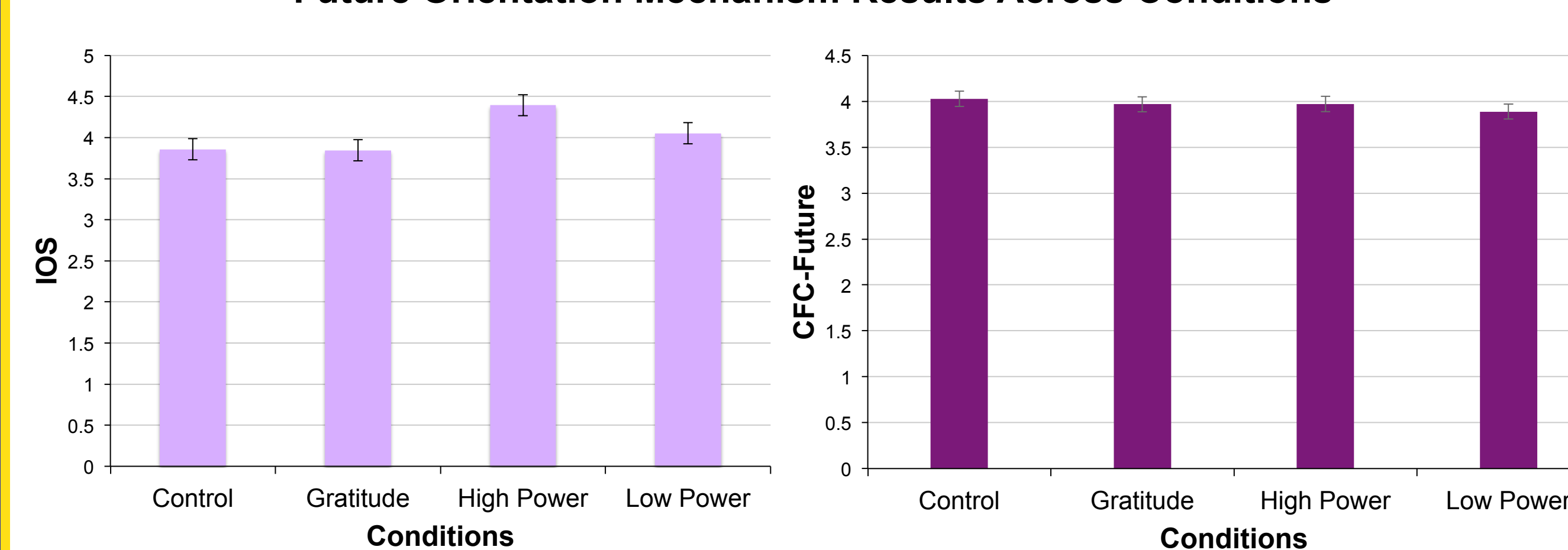


Figure 4. Future self-continuity across conditions

Figure 5. Concern with future consequences across conditions

- IOS for the high-power group was significantly greater than the IOS for the gratitude group, similar to what was predicted by our second hypothesis ($M_{High Power} = 4.39$, $SD_{High Power} = 1.28$; $M_{Gratitude} = 3.84$, $SD_{Gratitude} = 1.21$; $t(76.77) = -1.98$, $p = .049$). We also compared gratitude and low power on IOS and, consistent with our second hypothesis, did not find a significant difference between them. We did not find significant group differences on the CFC scale.

RESULTS CONT'D.

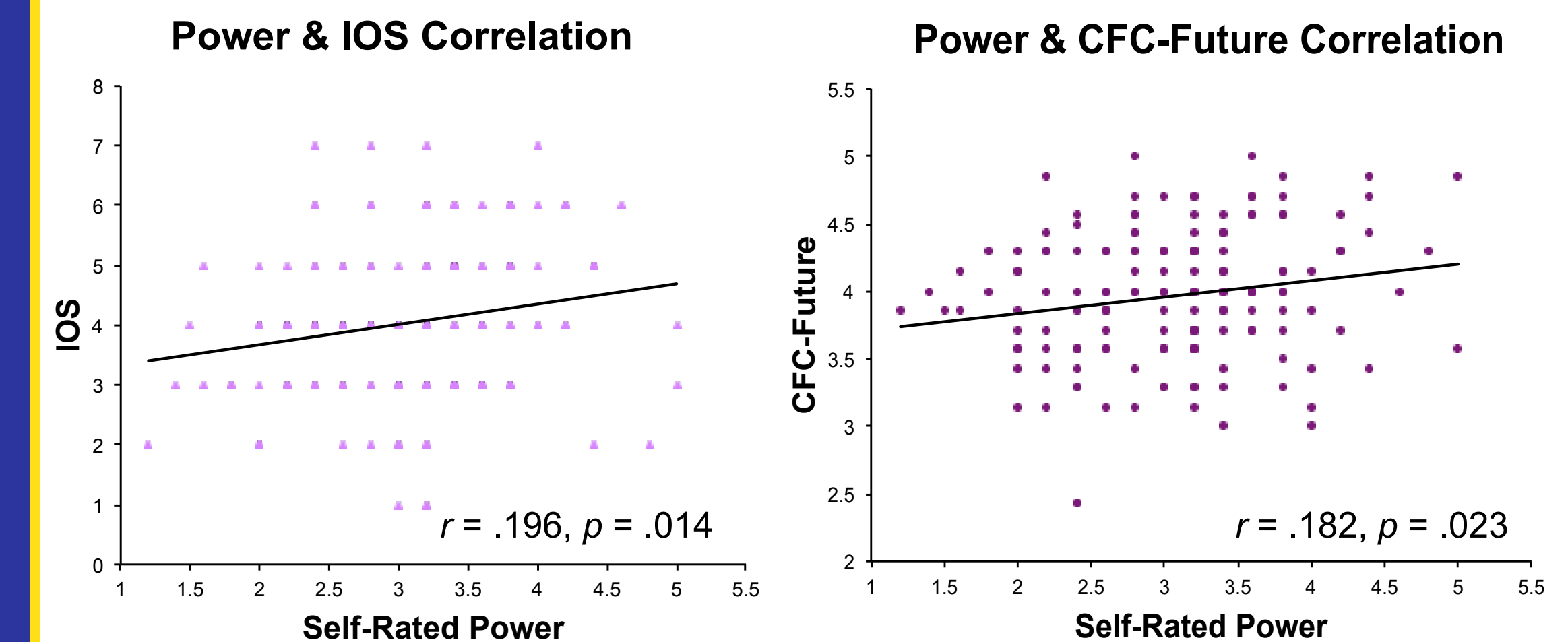


Figure 6. The positive relationship between future self-continuity and self-rated power

Figure 7. The positive relationship between the concern with future consequences and self-rated power

DISCUSSION

The findings mostly supported our first hypothesis: gratitude and increased power, both implying enhanced social value, did not differ from each other in temporal discounting, whereas lowered power, indicating low social value, led to higher temporal discounting than did gratitude. Gratitude tends to create social resources through social bonds, such as friendships and one can use these social resources when one needs support (Emmons, 2008). The resourcefulness that we see in grateful individuals is similar to that in individuals with high power, who have more physical, intellectual, and psychological resources compared to low-power individuals (Valdesolo & DeSteno, 2014). Increased resources, and thus increased social value, contribute to reduced temporal discounting. In our study, low-power individuals, who felt deprived of various resources, were more impatient than the grateful participants who had the social resources. Resourceful high-power and grateful individuals, on the other hand, discounted similarly. Although increased power seemed to have elevated future orientation compared to gratitude, gratitude and power's effects on temporal discounting were not explained by our future orientation findings. Hence, our data provided support for the social value mechanism in temporal discounting.

Limitations and Future Research

There are potential limitations in our findings. Although we found that low-power subjects were discounting more heavily than grateful subjects, we did not see a significant difference between high and low power in temporal discounting, as we predicted in Hypothesis 1. Therefore, we failed to replicate Joshi and Fast's (2013) previous indications that high power leads to less temporal discounting than low power. There may have been multiple reasons for this other than social value and future orientation. First, we did not use real money or any other kind of reward as incentives in our experiment. Therefore, the subjects might not have provided their answers based on what they would actually choose in a temporal discounting task in real life. This might have reduced the statistical significance of our tests. Second, we used the discounting questionnaire that DeSteno and colleagues (2014) used, which was different than what Joshi and Fast (2013) incorporated in their studies. This might have contributed to the non-replication. In future research, we plan to overcome these weaknesses by providing actual rewards and using the same discounting questionnaire that Joshi and Fast (2013) have used.

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