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## WHY DO EXTRAVERTS FEEL MORE POSITIVE AFFECT AND LIFE SATISFACTION? THE INDIRECT EFFECTS OF SOCIAL CONTRIBUTION AND SENSE OF POWER

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### ABSTRACT

*Recent research suggests that social contribution mediates the relationship between extraversion and positive affect or life satisfaction. But because social contribution includes not only sense of contribution but also sense of power, exactly what mediates this relationship remains unclear. Based on research that suggests a difference between positive affect and life satisfaction, we hypothesized that what mediates the relationship depends on whether the dependent variable is positive affect or life satisfaction. As predicted, while both social contribution and sense of power mediated the relationship between extraversion and positive affect, only social contribution mediated the relationship between extraversion and life satisfaction. This finding provides new evidence of the difference between positive affect and life satisfaction. Moreover, it makes the exact mediator of the relationship between extraversion and positive affect or life satisfaction clear, and suggests the ways to enhance the lower positive affect or life satisfaction of introverts.*

### INTRODUCTION

Extraversion is one of the five basic personality traits that can be conceptualized as the coherent patterning over time and space of affect, behavior, cognition, and desire (Wilt & Revelle, 2009). Prior research has shown a positive relationship between extraversion and positive affect (Lucas & Fujita, 2000; Smillie, Cooper, Wilt, & Revelle, 2012). Social activity hypothesis claims that this relationship is explained by higher social activity of extraverts (Lucas, Le, & Dyrenforth, 2008; Pavot, Diener, & Fujita, 1990; Watson, Clark, McIntyre, & Hamaker, 1992). However, prior research has only partially supported this hypothesis (e.g., Lucas et al., 2008).

Smillie, Wilt, Kabbani, Garratt, and Revelle (2015) focused on the effect of qualitative aspects of social experience instead of quantitative aspects of social experience (i.e., amount of time spent with others). Prior research revealed that extraversion is also related to the quality of social

experience. For example, extraverts are shown to perceive their friendship as more intimate and supportive (Festa, McNamara Barry, Sherman, & Grover, 2012), to use more intimacy metaphors when describing their friendships (Nelson & Throne, 2012), to perceive a stronger sense of community (Lounsbury, Loveland, & Gibson, 2003), to take the lead in initiating friendships (Festa et al., 2012; Selfhout, Burk, Branje, Denissen, van Aken, & Meeus, 2010), and to be described by their friends using force-impact metaphors (Nelson & Throne, 2012). It might be possible that these qualitative aspects of social experience explain the relationship between extraversion and positive affect. Thus, they examined this possibility using social well-being scale (Keyes, 1998) as the measure of the aspects of social experience. Across two studies, they revealed that *social contribution* which is one of the five subscale of social well-being, at least partially, explains the relationship between extraversion and positive affect or life satisfaction. Social contribution is the evaluation of one's social values, which includes the belief that one is a vital member of the society, with something of value to give to the world, and it resembles the concepts of self-efficacy and social responsibility (Keyes, 1998).

Although the results of Smillie et al. (2015) have important implications for explanations of why extraverts are happier than introverts, we argue that it remains unclear exactly what mediates the relationship between extraversion and positive affect. As described by Keyes (1998) and pointed out by Smillie et al. (2015), social contribution includes not only sense of contribution, but also sense of influence. Sense of influence, which is also called sense of power, is the perception of one's capacity to influence others (Keltner, Gruenfeld, & Anderson, 2003). When contributing to others, groups, or societies, one has influence over them. However, influencing others does not necessarily mean contributing to others, because influencing includes not only contributing, but also punishing, or controlling others for the benefit of the self. Thus, these two similar constructs differ in subtle but important ways. Furthermore, studies of social power have shown that having power enhances positive affect (Langer & Keltner, 2008), and extraversion is positively related to high sense of power (e.g., Anderson, John, & Keltner, 2012). Therefore, it may be possible that sense of power, rather than sense of contribution, mediates the relationship between extraversion and positive affect or life satisfaction. In this research, we explore in detail what mediates this relationship.

### **The Difference between Positive Affect and Life Satisfaction**

According to classic views, there are two types of happiness. The first is hedonic happiness. This is usually defined as having more positive affect or having a combination of more positive and less negative affect. Aristippus claimed that the goal of life is hedonism, or the experience of the greatest possible positive affect. The second type is eudemonic happiness, as described by Aristotle, who argued that true happiness is obtained by living virtuously, for example, by contributing to others. The pursuit of eudemonic happiness is called eudemonia (for more detailed reviews, see e.g. Peterson, Park, & Seligman, 2005).

Recent research suggests that life satisfaction includes eudemonic happiness. Peterson et al. (2005) investigated the ways of living that enhance life satisfaction. The pursuit of pleasure, which represents hedonism, and the pursuit of meaning, which represents eudemonia, independently predicted life satisfaction. While the effect of the pursuit of pleasure was weak,

the effect of the pursuit of meaning was moderate. These results indicate that life satisfaction is mainly determined by eudemonic happiness rather than by hedonic happiness and is thus different from positive affect.

Given the nature of life satisfaction, sense of contribution should mediate the relationship between extraversion and life satisfaction, but sense of power should not. Contributing to others, groups, or societies corresponds to the pursuit of eudemonic happiness. Therefore, sense of contribution would seem to enhance life satisfaction. However, merely having power does not necessarily correspond to the pursuit of eudemonic happiness. Thus, sense of power itself should not enhance life satisfaction, or its effect should be smaller than that of sense of contribution.

On the other hand, both sense of contribution and sense of power should mediate the relationship between extraversion and positive affect. Research on social power suggests that power places the individual in a reward-rich environment, thereby activating approach tendencies and positive emotion (Langer & Keltner, 2008). Research on prosocial behavior, which is contributing to others or societies in nature, suggests that it promotes positive affect because it enhances social connection, self-efficacy, or autonomy (Dunn, Aknin, & Norton, 2014; Weinstein & Ryan, 2010). Thus, the mechanisms of feeling positive affect seem to differ. Therefore, both sense of power and sense of contribution should enhance positive affect.

## **METHOD**

### **Participants**

295 undergraduates in Japan (112 females, 175 males, 8 non-responses,  $M_{age} = 19.55$ ,  $SD_{age} = 1.19$ ) participated in the survey for partial course credit. They responded to a questionnaire that included measures of extraversion, positive affect, life satisfaction, social contribution, and sense of power.

### **Measures**

Extraversion was measured using the items of extraversion in the Big Five Scales (Wada, 1996, 7-point scale, 12 items,  $\alpha = .89$ ). Positive affect was measured using the items of positive affect in the Japanese version of the Positive and Negative Affect Schedule scales (Sato & Yasuda, 2001, 6-point scale, 8 items,  $\alpha = .82$ ). Life satisfaction was measured using the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985, 7-point scale, 5 items,  $\alpha = .83$ ). We used the Japanese version of this scale, which is available on the website of Ed Diener (<http://internal.psychology.illinois.edu/~ediener/SWLS.html>). Social contribution was measured using the items of social contribution in the Social Well-Being Scale (Keyes, 1998, 7-point scale, 3 items,  $\alpha = .85$ ). The items were translated by the authors. Sense of power was measured using the Sense of Power Scale (Anderson et al, 2012, 7-point scale, 8 items,  $\alpha = .81$ ). The items were translated by the authors.

## RESULTS

Table 1 reports the means and standard deviations of the variables. Table 2 reports the correlations among the variables. As predicted, Extraversion was positively correlated to social contribution ( $r = .35, p < .001$ ), sense of power ( $r = .31, p < .001$ ), positive affect ( $r = .54, p < .001$ ), and life satisfaction ( $r = .31, p < .001$ ). Moreover, social contribution and sense of power were positively correlated to positive affect (social contribution:  $r = .38, p < .001$ , sense of power:  $r = .37, p < .001$ ) and life satisfaction (social contribution:  $r = .33, p < .001$ , sense of power:  $r = .28, p < .001$ ).

### Indirect Effects of Social Contribution and Sense of Power on the Relationship between Extraversion and Positive Affect

Table 1. Means and Standard Deviations of Variables

Variables	<i>N</i>	Mean	Standard Deviation
Extraversion	294	4.38	0.95
Social Contribution	293	4.79	1.31
Sense of Power	290	4.15	0.88
Positive Affect	289	3.45	0.84
Life Satisfaction	292	3.88	1.23

Table 2. Correlations among Variables

Variables	1	2	3	4	5
1. Extraversion	-				
2. Social Contribution	.35**	-			
3. Sense of Power	.31**	.59**	-		
4. Positive Affect	.54**	.38**	.37**	-	
5. Life Satisfaction	.31**	.33**	.28**	.32**	-

Note.  $N = 284$ .

\*\*  $p < .01$ .

We examined the indirect effects of social contribution and sense of power on the relationship between extraversion and positive affect using a bootstrapping analysis suggested by Preacher and Hayes (2004, 2008). Table 3 reports the results of the mediation analysis. The 95% confidence intervals (CI) of the indirect effects of both social contribution and sense of power did not cross zero (social contribution:  $\beta = .05$ , 95% CI [.01, .10], sense of power:  $\beta = .05$ , 95% CI [.00, .11]). We hypothesized that both social contribution and sense of power should mediate the relationship between extraversion and positive affect. Thus, this result was consistent with our hypothesis.

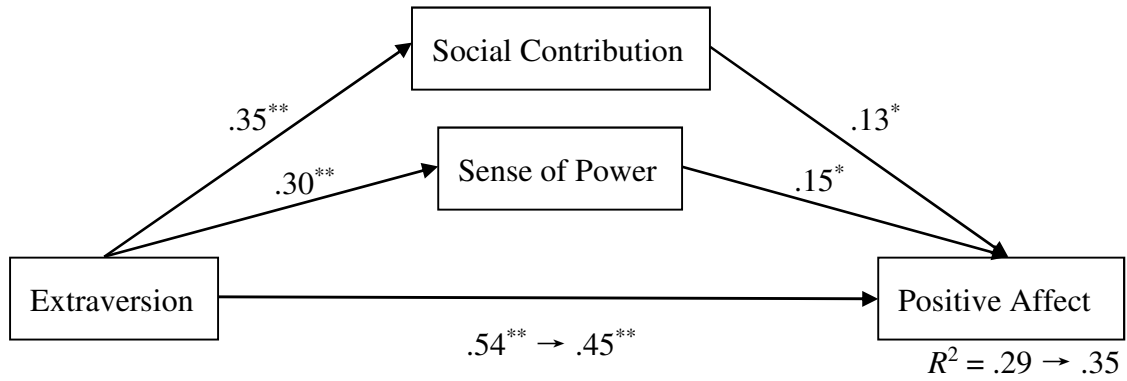


Figure 1. Model of the Relation between Extraversion and Positive Affect Mediated by Social Contribution and Sense of Power

Note.  $N = 284$ . Standardized regression coefficients are reported. \*  $p < .05$ . \*\*  $p < .01$ .

**Indirect Effects of Social Contribution and Sense of Power on the Relationship between Extraversion and Life Satisfaction**

Next, we investigated the indirect effects of social contribution and sense of power on the relationship between extraversion and life satisfaction, in the same way as above. The results of the analysis are reported in Table 4. Here, while the 95% CI of the indirect effects of social contribution did not cross zero ( $\beta = .08$ , 95% CI [.02, .16]), the 95% CI of the indirect effect of sense of power crossed zero ( $\beta = .04$ , 95% CI [-.03, .12]). We hypothesized that social contribution would mediate the relationship between extraversion and life satisfaction, which would not be the case with the sense of power. Therefore, this finding was also consistent with our hypothesis.

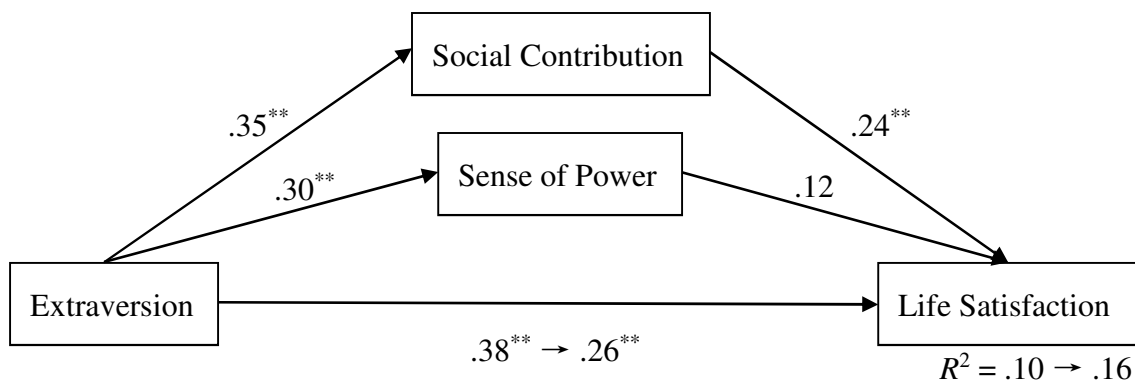


Figure 1. Model of the Relation between Extraversion and Life Satisfaction Mediated by Social Contribution and Sense of Power

Note.  $N = 284$ . Standardized regression coefficients are reported. \*  $p < .05$ . \*\*  $p < .01$ .

## **DISCUSSION**

The purpose of this study was to examine the indirect effects of social contribution and sense of power on the relationship between extraversion and positive affect or life satisfaction. Based on recent research suggesting a difference between positive affect and life satisfaction, we hypothesized that what mediates the relationship would differ depending on whether the dependent variable was positive affect or life satisfaction. The results were consistent with our prediction. While both social contribution and sense of power mediated the relationship between extraversion and positive affect, only social contribution mediated the relationship between extraversion and life satisfaction.

Our finding provides new evidence of a difference between positive affect and life satisfaction. While the traditional view of happiness regards life satisfaction as hedonic happiness, the results of Peterson et al. (2005) suggest that it involves eudemonic happiness rather than hedonic happiness. In our study, while the effect of sense of power on life satisfaction did not achieve significance, there was a significant effect of social contribution on life satisfaction. Given that sense of contribution would enhance eudemonic happiness but sense of power would not, our results imply that life satisfaction includes eudemonic happiness.

Our results also contribute new insight on why extraverts are happier than introverts. The fact that both social contribution and sense of power mediated the relationship between extraversion and positive affect suggests that there may be at least two ways to enhance the lower positive affect of introverts: by enhancing sense of contribution or by enhancing sense of power. However, given that social contribution, but not sense of power, mediated the relationship between extraversion and life satisfaction, it is likely that enhancing sense of power would not be adequate to enhance introverts' life satisfaction; this would require enhancing sense of contribution. Future research should test the efficacy of these strategies in interventions for the lower positive affect and life satisfaction of introverts.

Because this study is correlational, our result does not provide causal evidence. Some research has tried to manipulate participants' extraversion experimentally by giving them instructions about their behavior (Fleeson, Malanos, & Achille, 2002; Smillie et al., 2015; Zelenski, Santoro, & Whelan, 2012). In order to provide causal evidence, it is necessary to determine if our finding is replicated when extraversion is experimentally manipulated.

Another limitation of this study comes from our limited sample. Although there is no credible evidence that positive affect, life satisfaction, social contribution, and sense of power differ for adults and university students, we cannot deny the possibility that our results are limited to university students. Future research should test the same hypotheses with adults.

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#### **AUTHOR NOTE**

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