

## INDUCING SOCIABILITY

### Insights From Well-Being Science

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**Abstract:** A growing body of evidence suggests that individuals can increase their well-being by deliberately engaging in connection-boosting positive activities such as expressing gratitude and performing acts of kindness for others. Indeed, social connection—fundamental to both mental and physical health—is a prime candidate for future positive activity interventions. In this chapter, we argue that inducing sociability via interventions has implications for improving individual well-being, while also allowing psychological scientists to carefully examine the mechanisms underlying the relationship between sociable behavior and emotional health. Drawing on three recent studies from our laboratory, we review evidence that suggests that asking participants to act more extraverted, to engage in more social interactions, and to do more acts of kindness are all promising and efficacious methods to experimentally induce sociability. Finally, we summarize open questions and future directions for research on inducing sociability in experimental contexts.

Social connection is central to human experience. Feeling connected to others has been theorized as a basic psychological need, with implications for both mental and physical health (Baumeister & Leary, 1995; Holt-Lunstad, Robles, & Sbarra, 2017; Ryan & Deci, 2000; see also Baumeister & Maranger; Dunn & Lok; Fiske; and von Hippel & Smith, this volume). Accordingly, social dysfunction is a hallmark of mental health disorders such as depression and anxiety, and treatments for these disorders (such as cognitive behavioral therapy) often focus on improving and strengthening one's social ties (Berkman et al., 2003; LaRocca & Scogin, 2015). In this chapter, we argue that it is possible to induce sociability experimentally through self-directed activities, and that doing so

increases psychological well-being. Furthermore, inducing sociability through this type of intervention allows social psychologists to examine the mechanisms underlying the relationship between sociable behavior and well-being.

It is worth noting that sociability can have two meanings. One is sociable if one tends to seek out and enjoy the company of others. Alternatively, one can be considered sociable if others enjoy their company. For example, an individual might be described as sociable based on their brimming social calendar, or due to the humor and charm they display during their social interactions. Although these components go hand in hand—that is, people are more likely to socialize if they delight in doing so and if others enjoy interacting with them—this chapter focuses on the first meaning of sociability, or instances of sociable behavior.

We begin our analysis by reviewing evidence from well-being science, which demonstrates that individuals can increase their well-being through volitional activities. Then, we present evidence that suggests sociability may be an especially effective strategy for increasing well-being in experimental research and applied contexts. Finally, using three recent studies from our laboratory as a framework, we review literature focused on inducing sociable behavior (i.e., engaging in more social interactions), with an emphasis on how augmenting sociability produces improvements in well-being.

### ***Subjective Well-Being***

Subjective well-being stands on two legs, comprising a cognitive component, assessed by one's satisfaction with life, and an affective component, consisting of relatively high positive affect and low negative affect (Diener, 1984). Decades of research have demonstrated that well-being is associated with myriad positive outcomes across life domains (see Diener, Lucas, & Oishi, 2018; Lyubomirsky, King, & Diener, 2005, for reviews). Furthermore, these links are more than correlational. Some longitudinal and experimental evidence suggests that subjective well-being leads people to succeed in the domains of social life (Jacobs Bao & Lyubomirsky, 2013), work life (Walsh, Boehm, & Lyubomirsky, 2018), and physical health (Diener, Pressman, Hunter, & Delgado-Chase, 2017).

Happiness is both hedonically and instrumentally rewarding, and as such, many individuals wish to become happier. However, seeking happiness is a notoriously elusive pursuit, and indeed, trying to become happier by pursuing it directly may backfire (Gruber, Mauss, & Tamir, 2011). Fortunately, experimental research has consistently shown that individuals can indirectly increase their well-being by deliberately and effortfully engaging in positive activities such as expressing gratitude or performing acts of kindness for others (Armenta, Fritz, Walsh, & Lyubomirsky, 2020; Fritz, Armenta, Walsh, & Lyubomirsky, 2019; Ko, Margolis, Revord, & Lyubomirsky, 2021; Nelson, Layous, Cole, & Lyubomirsky, 2016). These activities are typically short, self-administered, and non-stigmatizing and

are thus an accessible, low-cost option for happiness seekers. Positive activity interventions have been shown to be effective in increasing well-being and reducing depressive symptoms, with average effect sizes of  $r = .29$  and  $r = .31$ , respectively (Sin & Lyubomirsky, 2009; see also Bolger et al., 2013).

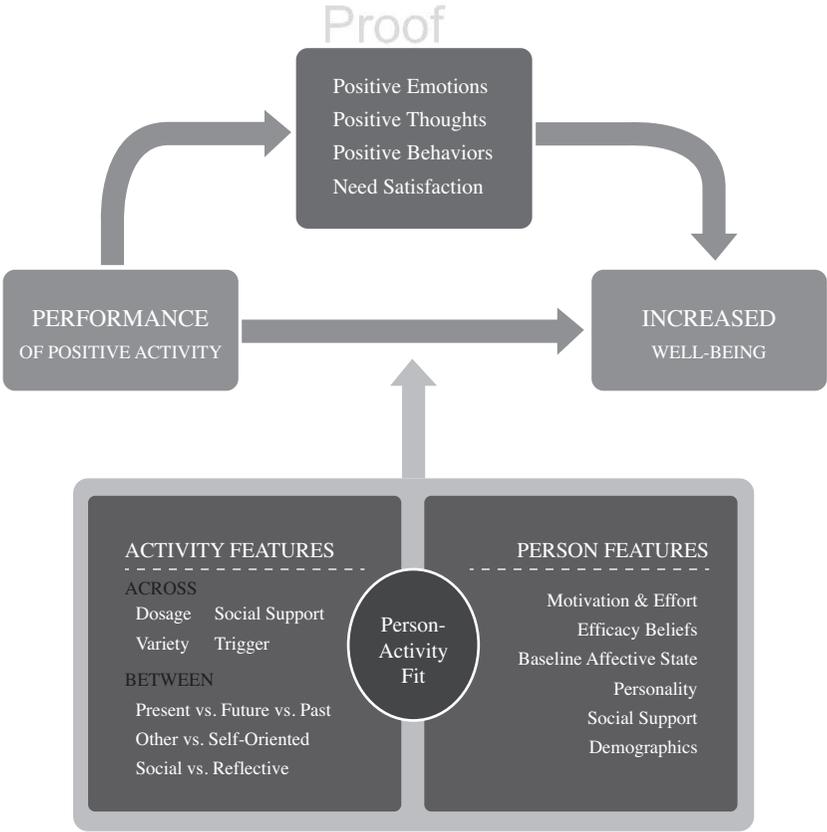
Positive activities typically include simple, relatively flexible instructions to maximize adherence and minimize threats to participants' autonomy. An intervention instructing participants to engage in more acts of kindness for others or to act more sociable may provide participants with instances of these behaviors without instructing them to take specific actions. For example, the instructions in Nelson and colleagues' (2016) prosocial behavior intervention included several examples of kind acts—such as doing a chore for a family member, paying for someone's coffee in line behind them, or visiting an elderly family member—while noting that the participants are welcome to diverge from this list. Such instructions are also designed to encourage variety in participants' behavior, which has been shown to impact the efficacy of positive interventions. In one study, for example, participants who engaged in more varied kind acts over the course of 10 weeks experienced greater well-being benefits than those instructed to engage in the same kind acts each week (Sheldon, Boehm, & Lyubomirsky, 2012; see also Dunn & Lok, this volume).

### ***The Positive Activity Model***

Positive activities do not impact well-being directly. Rather, they do so through a variety of mechanisms (e.g., by increasing the frequency of positive thoughts and behaviors) and are influenced by moderating variables (e.g., an activity's dosage). The positive activity model (see Figure 5.1) posits specific mediating and moderating variables underlying the success of positive activities (Lyubomirsky & Layous, 2013). For example, expressing gratitude to a loved one may satisfy one's need for social connection, which, in turn, boosts well-being. With respect to moderators, the efficacy of positive activities is influenced by features of the happiness seeker (e.g., their level of effort) and features of the activity itself (e.g., whether a specific practice is social or reflective).

Furthermore, the positive activity model suggests that the efficacy of any particular positive activity hinges on whether the characteristics of the happiness seeker align with the characteristics of the activity. This is called “person-activity fit.” For example, if a person engages in a high-fit activity—that is, one they find natural and rewarding—they are likely to muster more effort into the activity and experience greater increases in positive mood or life satisfaction as a result (e.g., Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011). Similarly, if an individual engages in an ill-fitting activity, the intervention may be ineffective or even backfire (Fritz & Lyubomirsky, 2018.).

Researchers are continuing to identify and test a wide range of positive interventions in order to maximally benefit individuals seeking to purposely



**FIGURE 5.1** Model of the psychological mediators and moderators underlying the efficacy of practicing positive activities.

*Source:* Adapted with permission from “How Do Simple Positive Activities Increase Well-Being” by S. Lyubomirsky & K. Layous, 2013, *Current Directions in Psychological Science*.

increase their well-being (Carr et al., 2020; Parks & Titova, 2016; Revord, Walsh, & Lyubomirsky, 2018; Shin & Lyubomirsky, 2016). In the following sections, we review evidence supporting social behavior as a promising target for future positive activity interventions.

### Increasing Extraverted Behavior

To be extraverted is to be sociable. Indeed, sociability has been repeatedly identified as a critical facet of trait extraversion, along with assertiveness and energy level (Saucier & Ostendorf, 1999; Soto & John, 2017). Although trait extraversion is a multifaceted construct, we propose that one way to induce sociability is by experimentally manipulating extraverted behavior. Before

describing recent experimental evidence from our laboratory, we begin by briefly summarizing the robust relationship between extraversion and well-being.

### ***Extraversion and Well-Being***

The relationship between extraversion and well-being is well-established, with dozens of correlational studies demonstrating a positive association between these two variables. A meta-analysis found that extraversion is positively associated with positive affect and negatively associated with negative affect, with average effect sizes of  $r = .44$  and  $r = -.18$ , respectively (Steel, Schmidt, & Shultz, 2008). In addition to greater self-reported positive affect, extraversion is associated with a variety of advantageous social outcomes, including larger social networks and greater satisfaction with friendships (Swickert, Rosentretter, Hittner, & Mushrush, 2002; Wilson, Harris, & Vazire, 2015).

Engaging in extraverted behavior has been shown to increase well-being in laboratory and field settings. Fleeson (2002) applied the principle of state-trait isomorphism in conducting one of the first experiments to induce extraverted behavior. That is, because states (e.g., extraverted behavior) share properties and consequences of traits (e.g., heightened positive affect), increasing the frequency of trait-relevant behavior should likewise increase the consequences of a trait. This hypothesis was supported in a series of studies in which participants instructed to act more extraverted in a 10-minute conversation reported higher levels of positive affect than those instructed to act introverted (Fleeson, Malanos, & Achille, 2002; McNiel & Fleeson, 2006; McNiel, Lowman, & Fleeson, 2010). Subsequent research also suggested that people enjoy acting extraverted more than they believe they will. In one study, participants high in introversion forecasted more negative and less positive affect than they actually experienced when they were asked to behave more extraverted (Zelenski et al., 2013). In another experiment, participants who commuted to work via train or bus were instructed to either talk to a stranger or remain silent. Those who talked to a stranger during their commute experienced greater positive affect than those who remained silent, despite predicting a preference for solitude (Epley & Schroeder, 2014).

Although extraversion is usually considered to be a stable characteristic, a growing literature suggests that people may be able to volitionally change their level of extraversion and other personality traits (see Hudson & Fraley, 2017 for a review). One study specifically sought to test whether individuals could intentionally change their personality traits over 16 weeks (Hudson & Fraley, 2015). The results suggested that participants can do this, but only when they create plans to change their trait-relevant behavior. This work speaks to the importance of trait-relevant behavior (e.g., talking more) in volitional personality change, and indicates that specific change goals (e.g., I will try to talk more at the dinner table) may facilitate this process. Extending this research, a recent between-subjects study assigned participants to an extraversion condition, where they

were asked to act more extraverted (bold, talkative, outgoing, active, and assertive) than usual over the course of a week, or to an active control condition, where they were instructed to act more unassuming, sensitive, calm, modest, and quiet over a week (Jacques-Hamilton, Sun, & Smillie, 2019). These groups were also compared to a neutral comparison condition collected from another study. Participants instructed to act more extraverted reported increases in retrospective positive affect compared to both active and neutral controls. Interestingly, baseline extraversion moderated these effects such that extraverts benefited more from the intervention than introverts.

### ***Inducing Extraverted Behavior Increases Well-Being: Experimental Evidence***

Given the mounting correlational and experimental evidence for the link between extraversion and well-being, we designed an experiment to test whether inducing extraverted behavior over the course of a week would impact well-being (Margolis & Lyubomirsky, 2020). To that end, we recruited 150 undergraduate students to participate in an experiment in which they were asked to change their social behavior over 2 weeks. Using a within-subjects design, participants were randomly assigned to act either introverted or extraverted for 1 week, and then to behave in the other manner during the second week.

The behavioral instructions used in this study were designed to minimize effects due to social desirability and maximize the potential for behavior change. Because descriptors such as “outgoing” tend to be more socially desirable in Western cultures than descriptors such as “shy,” we used trait adjectives to describe extraversion that had been rated relatively low in social desirability, and we used highly desirable trait adjectives for introversion (cf. Hampson, Goldberg, & John, 1987). Specifically, participants were asked to act more talkative, assertive, and spontaneous in the extraversion instructions, and deliberate, quiet, and reserved in the introversion instructions. To facilitate behavior change, participants were also asked to list five specific ways in which they planned to change their behavior over the next week, using a similar procedure as previous personality change experiments (Hudson & Fraley, 2015; cf. Gollwitzer & Brandstätter, 1997). An example of such a plan was as follows: “When my friends are discussing something important to me, I (will [extraversion instructions]; will not [introversion instructions]) express my opinion.”

As hypothesized, our participants’ behavior change throughout the study was associated with their self-reported well-being. Participants improved in positive affect during the extraversion week, and they declined in positive affect during the introversion week. Participants prompted to act extraverted experienced other psychological benefits as well—that is, they reported significant boosts in life satisfaction, in psychological need satisfaction (i.e., their sense of connectedness, competence, and autonomy; Sheldon & Hilpert, 2012; cf. Ryan & Deci, 2000), and in flow. Furthermore, our participants recognized that they were

behaving—or *being*—more extraverted during the extraversion week. They reported increases in extraverted behavior and scored higher in trait extraversion (as measured by both the BFI-2 and the NEO) during the extraversion week, and they showed the converse pattern during the introversion week. Interestingly, baseline trait extraversion did not moderate the effects of our experiment. In other words, individuals who scored high or low in trait extraversion when recruited into the intervention were no more or less likely to benefit from it.

Taken together, the results of this study suggest that individuals can volitionally increase their extraverted behavior over the course of a week, and that doing so is associated with well-being benefits, including greater positive affect and life satisfaction. Acting more extraverted than usual also increased participants' sense of autonomy, competence, and connectedness—psychological needs positioned as key mechanisms through which positive activities increase well-being in the positive activity model (Lyubomirsky & Layous, 2013). Furthermore, acting more introverted than usual actually decreased well-being and diminished feelings of connection and autonomy. These results provide evidence for the benefits of acting more extraverted than usual, and position extraversion as a promising target for future well-being intervention studies.

Our study, however, should be considered in the context of several caveats and limitations. First, the well-being benefits could be partially explained by experimenter demand, and, despite our best efforts, by social desirability. Although we avoided describing extraverted behavior in socially desirable terms, extraversion is highly valued in Western culture (Cain, 2013), and participants may have been nudged to respond to the self-report measures accordingly. Furthermore, although our participants reported increases in trait-level extraversion after acting more extraverted for 1 week, the timeline was likely too short to make strong claims about trait-level change, and observer and objective measures were lacking. Additional longitudinal experiments are needed to better understand the processes involved in volitional personality change, and whether increasing the frequency of trait-relevant behavior is sufficient to produce trait-level change.

Finally, although our behavioral instructions were representative of extraversion's three theorized facets, participants may have changed their behavior in accordance with a single facet rather than all three. For example, some participants may have chosen to focus on being more talkative with their friends, while others may have focused on being more assertive at work. Future research is needed to investigate the extent to which changing behavior based on specific facets of extraversion might differentially relate to well-being.

## Increasing Prosocial Behavior

Another route to inducing sociability may be via engaging in prosocial behavior. In the following section, we begin by summarizing robust evidence for the relationship between prosocial behavior and well-being. We then turn to two recent experiments from our laboratory comparing the benefits of acting

prosocially compared to engaging in more frequent social interactions and other positive behaviors.

### ***Prosociality and Well-Being***

Theorized to be an innate human tendency, prosocial behavior (or acting to benefit another person) is demonstrated throughout the lifespan, starting as young as 14 months of age (Warneken & Tomasello, 2007; see Keltner, Kogan, Piff, & Saturn, 2014 for a review). Prosocial behavior—also referred to as kind or helping behavior—is usually motivated by a desire to improve the well-being or mood of others (although see Zaki, 2020 for examples of counter-hedonic prosocial interactions). Research suggests, however, that doing acts of kindness may be as beneficial to the doer as it is to the recipient. For example, engaging in prosocial behavior has been associated with greater self-reported well-being and physical health in correlational research (see Anderson et al., 2014; Keltner et al., 2014; and Konrath et al., 2014 for reviews).

The benefits of prosocial behavior have also been tested in numerous experimental studies, with a recent meta-analysis identifying a small to medium effect of experimentally induced prosocial behavior on well-being (Curry et al., 2018). For example, participants asked to engage in prosocial spending (versus self-spending) have consistently reported increases in well-being (Aknin et al., 2013; Dunn, Aknin, & Norton, 2008; Lok & Dunn, 2020; Whillans, Aknin, Ross, Chen, & Chen, 2020). Work from our own laboratory has also repeatedly identified well-being and other benefits from engaging in prosocial interventions. One study found that doing acts of kindness (versus a neutral activity) increased peer acceptance among preadolescents (Layous, Nelson, Oberle, Schonert-Reichl, & Lyubomirsky, 2012). In another study, participants were randomly assigned to perform acts of kindness for themselves, other people, or the world, or to keep track of their daily activities for 4 weeks (Nelson et al., 2016). Those who did kind acts for others experienced greater increases in psychological flourishing and positive affect after the study than did those who did kind acts for themselves or neutral activities. Notably, only the two beneficial—prosocial—conditions likely involved interacting with other people.

### ***Comparing the Hedonic Benefits of Acting Socially versus Prosocially***

Although prosocial acts can be anonymous or nonsocial (e.g., leaving money in a parking meter or donating to a charity), many prosocial acts involve actual social behavior—that is, a kindness offered toward at least one other person (e.g., helping someone carry their groceries or volunteering at a local food bank). Indeed, prosociality in everyday life frequently includes providing kind

words, advice, or other forms of social support to others. Might it be the case that the hedonic benefits associated with prosociality observed in both correlational and experimental studies are due to its social—as opposed to the prosocial—component? To address this question, we designed an experiment to directly compare prosocial and social behavior against a neutral control activity (Fritz et al., 2022). Furthermore, we sought to test whether technology-mediated interactions differed from interactions that took place in person.

Our participants were 754 employed adults recruited through Amazon Mechanical Turk. To test our research question, participants were randomly assigned to one of five conditions, using a 2X2 design with an additional neutral control condition. Once a week over the course of 4 weeks (e.g., every Monday), they were asked to either engage in three kind acts on the following day (e.g., buying a treat for a coworker or bringing flowers to a romantic partner) or to have three extra social interactions on the following day (e.g., chatting with a stranger on their morning commute or having a non-work conversation with a coworker). Furthermore, participants were assigned to perform their instructed behavior (i.e., prosocial or social) either in person or online. Those in the control condition were asked to keep track of their activities on the following day.

Interestingly, all participants (including those in the control condition) reported increases in both positive affect and life satisfaction across the intervention period. Participants in the experimental groups, however, reported larger increases in feelings of social connectedness than did those in the control condition. In other words, both prosocial behaviors (e.g., helping a colleague with a computer problem) and social behaviors (e.g., chatting with a barista) led to relatively greater perceived social connection. Furthermore, increases in episode-level social connection among participants in the experimental conditions (i.e., feelings of connectedness while helping or chatting) were positively related to feelings of episode-level positive affect and overall feelings of social connectedness.

In sum, this experiment found no differences between social and prosocial behaviors in their effects on well-being or felt social connection. It is possible that our manipulations were not strong enough to detect differences between two types of positive behavior over the course of 4 weeks. For example, a participant may have chosen to offer kind words to a friend experiencing a hardship in response to instructions for *either* the social or prosocial condition, as this act could be construed as both social and prosocial. Alternatively, it could very well be that the well-being benefits previously attributed to prosocial behavior are due in large part to the inherently social nature of kindness. Although prosocial behavior is valuable and important to promote in its own right, sociability may be an equally efficacious target for future positive activity interventions in terms of its potential to boost momentary feelings of social connection and downstream well-being.

## ***How Does Prosocial Behavior Differ from Other Positive Activities?***

Thus far, we have largely focused on the relationship between sociability and subjective well-being—specifically, how social interactions make us feel happier and more connected to others. Many questions in this area, however, remain to be addressed. Why might sociable and prosocial behavior result in similar feelings of social connection and life satisfaction? Are acts of kindness unique or are they just another type of social interaction? To explore these questions, we shift our focus to eudaimonic well-being (or eudaimonia).

The concept of eudaimonia dates back to Aristotelian ethics and is roughly defined as the extent to which one is “living well” (Aristotle, 4th c. BCE/2002). Eudaimonia has been operationalized through a variety of constructs and measures (e.g., psychological flourishing, positive social relationships), and as both a cause and a type of well-being, in the psychological literature (Heintzelman, 2018; Sheldon, 2018). The eudaimonic activity model (EAM) offers conceptual clarity by situating eudaimonia as a class of activities that *predict* well-being rather than being a type of well-being itself (Martela & Sheldon, 2019; Sheldon, 2016, 2018). That is, rather than distinguishing between eudaimonic and subjective well-being, the EAM seeks to explain how eudaimonic actions and motives influence subjective well-being by disentangling well-*being* from well-*doing* (Sheldon, 2018).

The EAM posits that eudaimonic activities increase subjective well-being through psychological need-satisfying experiences. For example, volunteering (a eudaimonic activity) may satisfy one’s psychological need for connection (a satisfying experience), which in turn promotes subjective well-being. Furthermore, specific eudaimonic motives and activities may evoke distinct proximal feelings (e.g., feeling a sense of meaning while playing with a child), which could have downstream consequences for the well-being benefits derived from these actions.

We tested this hypothesis in a recent experiment designed to compare the momentary eudaimonic feelings that arise from engaging in a variety of positive behaviors (Regan, Margolis, Ozer, Schwitzgebel, & Lyubomirsky, 2022). Specifically, we sought to understand the unique proximal feelings that arise when engaging in acts of kindness for others, given the robust relationship between prosocial behavior and well-being (see Curry et al., 2018, for a meta-analysis). To that end, we randomly assigned participants to one of four positively valenced conditions that varied in their inclusion of potential “active ingredients” of prosocial behavior. Engaging in kind acts for others was compared to engaging in kind acts for oneself (social element removed), extraverted behavior (kindness element removed), and open-minded behavior (both social and kindness elements removed). This research design allowed us to isolate participants’ subjective experience of engaging in acts of kindness compared to other positive behaviors.

The participants included 671 Australian adults recruited from PureProfile, an online panel company. The study took place over the course of 15 days. At the end of the first day, participants were given their intervention instructions, and then were asked to list five specific ways in which they planned to incorporate their assigned behavior into their daily life over the next 2 weeks. In a series of twice-weekly assessments, participants were asked to report on their instructed activities completed since the last survey, and to recall how they felt while completing each of their reported activities. To ease participant burden and maximize retention, we relied on one-item measures of eudaimonic feelings in our weekly assessments—specifically, we asked participants to rate their energy level, sense of meaning, self-esteem, and psychological needs.

As hypothesized, participants randomly assigned to the prosocial behavior group reported stronger eudaimonic feelings over the course of the study. Specifically, those who engaged in prosocial behavior reported stronger feelings of competence, self-esteem, and meaning than those in all other conditions. Prosocial behavior—as well as extraverted behavior—also led participants to report feeling more socially connected relative to open-minded behavior and acts of kindness for themselves.

This pattern of results speaks to the unique experience of acting prosocially. Namely, engaging in kind acts toward others is more meaningful and self-bolstering than simply engaging in other types of positively valenced, socially desirable behaviors. Mirroring our previous findings, however, participants in this study felt similarly connected to others when engaging in prosocial behavior as they did when engaging in extraverted (or social) behavior. In other words, asking participants to do acts of kindness for others may be a similarly connecting experience as asking them to have more social interactions. In sum, recent evidence from our laboratory demonstrates that social connection can be fostered by instructing participants to act more extraverted, engage in more social interactions, or to behave prosocially. Furthermore, our results suggest that acting prosocially results in a unique type of connecting moment, which instills one's actions with a sense of meaning, and satisfies important psychological needs.

## **Future Directions and Further Questions**

### ***Can Sociability Be Sustainably Increased?***

So far, we have reviewed experimental evidence supporting the relationship between sociable activities (i.e., acting extraverted, engaging in more social interactions, and doing acts of kindness for others) and well-being (see also Dunn & Lok; Prislín & Crano, this volume). Most of the experimental research reviewed in this chapter, however, asked participants to change their behavior

for a relatively short period of time (days to weeks). Future research could explore the longevity of the social and well-being benefits of these interventions by prolonging the interventions or including additional follow-up assessments. In addition to determining how long these effects last, future investigators could test methods to make the effects last longer. For example, our laboratory is in the process of testing whether mental contrasting with implementation intentions (MCII; Oettingen & Gollwitzer, 2010) increases the efficacy and durability of extraversion interventions. MCII is a well-established behavior change strategy that involves first contrasting a desired outcome (e.g., becoming more extraverted) with an obstacle (e.g., feeling too shy to approach others), which helps create an association between one's desired future and current reality, in turn facilitating goal pursuit (e.g., to be a more extraverted person). Numerous studies have shown that MCII is an effective strategy for lasting behavior change in a variety of domains, with effects lasting up to 2 years (Stadler, Oettingen, & Gollwitzer, 2010; Wittleder et al., 2019).

### ***Pharmacological Approaches to Inducing Sociability***

This chapter has focused on positive activity interventions as a method of stimulating social behavior in experimental research, but we recognize that this is not the only viable paradigm for inducing sociability. Another exciting approach involves pharmacological intervention—namely, through the use of substances like alcohol, amphetamines, and  $\pm$ 3,4-methylenedioxymethamphetamine (i.e., MDMA or ecstasy). MDMA in particular is a stimulant characterized by its ability to produce intense feelings of social connection, and has been the subject of careful experimental work in this area (Bershad, Miller, Baggott, & de Wit, 2016; Kamilar-Britt & Bedi, 2015). Indeed, a recent meta-analysis identified a moderate-to-large effect ( $d = 0.86$ ; 95% CI [0.68, 1.04];  $r = .39$ ; 95% CI [.32, .46]) of MDMA on sociability-related outcomes in placebo-controlled experiments (Regan, Margolis, de Wit, & Lyubomirsky, 2021). Given its documented ability to stimulate sociability and connectedness, MDMA could allow psychologists to observe and manipulate facets of social interactions (e.g., feeling understood, openness, warmth, trust) that are challenging to induce using behavioral paradigms alone (cf. Lyubomirsky, in press). Furthermore, although the effects of the drug itself are short-lived, MDMA appears to produce lasting, transformative effects in clinical trials for individuals with mental health disorders such as post-traumatic stress disorder (PTSD) and social anxiety when used under the supervision of a trained mental health professional (Danforth et al., 2018; Mithoefer et al., 2019). The results of such trials suggest that MDMA can potentially amplify the effects of sociability interventions to produce durable effects on social behavior and felt social connection.

## **Tailoring Sociability Interventions**

Another important future direction is understanding how sociability interventions might be targeted to be maximally effective, how they might scale, and under what conditions they might backfire. In light of the theorized importance of person-activity fit (Lyubomirsky & Layous, 2013), it follows that some individuals are likely to benefit more than others from sociability-based interventions. One avenue for future research could be to explore whether some individuals are more likely to benefit from the specific mechanisms targeted by particular sociability-based interventions. For example, both acting more generously and acting more extraverted have been shown to increase momentary feelings of connection. However, prosocial behavior may be a better “fit” for some individuals, if they are particularly likely to experience or to benefit from increases in sense of meaning, competence, and self-esteem (Fritz et al., 2022; Regan et al., 2022). Indeed, comparing sociability-based positive activity interventions in well-controlled, replicable experiments may help researchers elucidate key mechanisms underlying the relationship between social interactions and well-being.

In addition to tailoring interventions to specific individuals, future investigators might also consider targeting common barriers to engaging in social interactions. For example, across seven studies, Sandstrom and Boothby (2021) identified several obstacles to engaging in conversations with strangers, including fears that one would not enjoy the conversation, be disliked, or show poor conversational skills. To minimize such fears and encourage more conversations, the authors suggest that future interventions focus on changing participants’ beliefs about their conversation partner (e.g., that their partner will take pleasure in talking to them).

Another promising research direction is to examine whether, how, and why inducing sociability might affect introverts and extraverts differently. Although we did not detect differences between introverts and extraverts in our extraversion experiment, a study using a similar extraversion manipulation and timeline found that introverts did not benefit as much as extraverts, and experienced some iatrogenic effects, including increased negative affect and tiredness (Jacques-Hamilton et al., 2019). Future research is needed to investigate the potential costs as well as benefits to increasing sociable behavior, and whether interventions can be specifically tailored to those who might need them and benefit from them most.

## **Concluding Thoughts**

Evidence from well-being science suggests that sociability is a promising target for future interventions. By engaging in more extraverted or prosocial behavior, individuals may experience greater social connection and overall well-being.

Encouraging prosocial behavior may be an especially powerful approach to future interventions, as such behavior provides an opportunity for more meaningful, connecting moments while benefitting another person. To maximize the potential benefits of these interventions, however, more research is needed to understand their optimal population, format, and duration. Accordingly, such work may not only reveal ways to improve mental health and well-being, but also highlight the key mechanisms by which sociability benefits the human experience.

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