



Cues of working together fuel intrinsic motivation[☆]



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HIGHLIGHTS

- A defining aspect of human society is that people work together toward common ends.
- Five experiments examined cues that evoke a psychological state of working together.
- As hypothesized, these cues increased intrinsic motivation as people worked alone.
- Outcomes were diverse, e.g., task persistence, enjoyment and, 1–2 weeks later, choice.
- These cues also increased feelings of working together but not other processes.

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ABSTRACT

What psychological mechanisms facilitate social coordination and cooperation? The present research examined the hypothesis that social cues that signal an invitation to work with others can fuel intrinsic motivation even when people work alone. Holding constant other factors, participants exposed to cues of working together persisted longer on a challenging task (Experiments 1 and 3), expressed greater interest in and enjoyment of the task (Experiments 1, 3, and 5), required less self-regulatory effort to persist on the task (Experiment 2), became more engrossed in and performed better on the task (Experiment 4), and, when encouraged to link this motivation to their values and self-concept, chose to do more related tasks in an unconnected setting 1–2 weeks later (Experiment 5). The results suggest that cues of working together can inspire intrinsic motivation, turning work into play. The discussion addresses the social-relational bases of motivation and implications for the self and application.

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An important quality of human society is that people work together in socially coordinated and cooperative ways. To organize a government, to build a business, to develop a scientific theory, or to create a new technology often requires the efforts of many people devoted to a common objective. The importance of coordinated social action for cultural innovation and change and for human welfare in general suggests that people may have psychological mechanisms that facilitate the coordination of individuals' motivation and behavior. Understanding these mechanisms is an important subject of research (Bratman, 1992; Tomasello, Carpenter, Call, Behne, & Moll, 2005; Walton & Cohen, 2011).

The present research explored the hypothesis that social cues that signal an invitation or an opportunity to work with others can inspire intrinsic motivation, leading people to work hard on difficult tasks for their “inherent satisfactions” even in the absence of external pressure or reward (Ryan & Deci, 2000a, p. 56). Cues of working together can function, we theorize, like social glue. They create social contexts that

bring people together to put forth sustained effort on common or related tasks.

A feeling of working together arises, we hypothesize, not so much from social structures, such as when people work together physically or share outcomes, but from cues that signal an invitation to work together with another person or group or that signal that others treat you as though you are working together. This hypothesis draws in part on theorizing that the power of situations lies in their psychological construal or meaning (Ross & Nisbett, 1991). As a consequence, people may experience a feeling of working together—that is, of jointly engaging around a common task or objective—even when they work alone.

Suppose you and a colleague are each writing a paper about a new scientific finding. Perhaps you are part of an informal writing group and you exchange thoughts or strategies and mutual expressions of goodwill. If so, your writing might come to feel like a task done together. This feeling of working together may arise even if you and your colleague are each responsible for your own paper and you write in different offices for different outlets. Alternately, even if you wrote in the same room or, indeed, even if you coauthored a paper but without positive task-related exchanges, your writing could feel separate from your

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colleague's—a personal task completed in parallel to but separately from that of another person.

The present research isolates *cues of working together*—not necessarily working jointly with another person on a specific problem and not necessarily sharing outcomes, but cues that evoke a feeling of joint engagement with well-dispositioned others as one pursues common tasks or objectives. We compare cues of working together to *cues of working in parallel to others*—cues that lead people to feel they are working at the same time on the same task as others but without a sense of togetherness. We propose that cues of working together turn work into play, leading people to become more interested in challenging tasks and thus to persist longer on them, to enjoy them more, to require less self-regulatory effort to persist on them, and to become more absorbed in, to perform better on, and to choose to complete more of these tasks.

How social settings affect motivation and performance is a classic question in psychology. One of the first studies in the field found that cyclists biked faster in head-to-head races than in time trials (Triplet, 1898). Subsequent research shows that working in the presence of others (*social facilitation*, Zajonc, 1965), observing the performance of others (*social comparison*, Kerr et al., 2007), having pooled outcomes (*social loafing*, Karau & Williams, 1993), and knowing that one's outcomes could be undermined by the incompetence of others (*compensatory motivation*, Williams & Karau, 1991) reliably affect people's effort and motivation. This past research maps ways the structural aspects of groups affect motivation with a primary emphasis on extrinsic motivation—the drive to work hard because of external rewards or pressure. Complementing this work, the present research investigates symbolic social cues that foster a feeling of working with others. Such cues, we hypothesized, can inspire intrinsic motivation—the motivation to work hard on tasks for their own sake, which can sustain people's effort over time and facilitate greater growth and learning (Ryan & Deci, 2000a). If even symbolic cues of working together fuel intrinsic motivation, this mechanism could enhance motivation and social coordination not only when people are physically together or cooperate to solve a specific problem but also when people work independently bound only by a feeling of working together as they tackle common or related problems.

Why would cues of working together fuel intrinsic motivation? Working with others affords humans many advantages. It can facilitate social bonds (Baumeister & Leary, 1995) and help people accomplish goals that would be out of reach of any one individual working alone (Asch, 1952). Thus, a capacity to work with others and a mechanism that facilitates motivation for tasks that feel as though they are done together could confer many benefits to individuals and their communities (Tomasello et al., 2005; Vygotsky, 1978; Walton & Cohen, 2011).

Consistent with this reasoning, people have a variety of social, cognitive, and neurological qualities that support the capacity to work together. These include cognitive mechanisms that facilitate joint attention and shared task representations (Sebanz, Bekkering, & Knoblich, 2006), neural networks that represent the intentions of both others and the self (Iacoboni et al., 2005), and a tendency to “tune” behaviors and attitudes to those of others (Sinclair, Lowery, Hardin, & Colangelo, 2005). Further, specific brain regions seem to be devoted to representing triadic relationships between the self, others, and a task (Saxe, 2006).

Are people, however, motivated by the opportunity to work with others? Some research suggests this possibility. Early in life infants and young children eagerly take part in tasks with adults. They prod adults who have stopped participating in activities with them to reengage (Carpenter, Tomasello, & Striano, 2005; Moore & Dunham, 1995; Ross & Lollis, 1987; Warneken, Chen, & Tomasello, 2006), spontaneously help adults (Warneken & Tomasello, 2006), and mimic adults' intentions (Meltzoff, 1995). Some scholars theorize that these findings reflect an early manifesting drive in humans “to participate with others in collaborative activities with shared goals and intentions” (i.e., *shared*

intentionality; Tomasello et al., 2005, p. 675; see also Warneken et al., 2006). These studies, however, do not isolate children's task motivation in the absence of adults; hence it could be that children are motivated to engage in positive interactions with caregivers but do not develop shared task-related goals. Consistent with our theorizing, however, one study found that just representing a challenging puzzle to preschoolers as done with another child instead of as done separately or in turns increased children's persistence on and liking for the puzzle as they worked on it on their own (Butler & Walton, 2013). Research thus suggests that young children are responsive to and motivated by opportunities to do tasks with others.

Working with others can also have motivational benefits among adults, at least in some circumstances (cf. Karau & Williams, 1993). Most directly relevant to the present research, Sansone and colleagues have shown that working with or alongside a peer can increase interest in a complex task and motivation to pursue related activities in the future, especially for people high in interpersonal orientation (Isaac, Sansone, & Smith, 1999). In addition, talking with responsive peers about a task or course (Thoman, Sansone, Fraughton, & Pasupathi, 2012; Thoman, Sansone, & Pasupathi, 2007) and participating in cooperative work and learning groups (Aronson & Osherow, 1980; Johnson & Johnson, 2009; Mitchell, 1993; Muldner, Dybvig, Lam, & Chi, 2011; Palmer, 2009; Shteynberg & Apfelbaum, 2013) can increase interest and performance. In a self-regulation context, one standard behavior treatment to promote weight loss was more effective when people formed teams to support one another than when they did not (Wing & Jeffery, 1999; cf. Fitzsimons & Finkel, 2011). This past research describes ways people's experience working on tasks or toward goals changes when they work with others rather than alone, and how this can enhance motivation. Complementing this past work, the present research isolates symbolic cues that invite people to work together and tests their effects on motivation as people work alone. In doing so, we hold constant other factors, such as pressure from a friend, the physical presence of others, exposure to role models, and opportunities for scaffolding afforded by observing and interacting with others.

The hypothesis that symbolic cues of working together can fuel intrinsic motivation extends past research on interest and motivation. Predominant theories emphasize that motivation arises from self-beliefs about competence, autonomy, and control (e.g., Bandura, 1997; Carver & Scheier, 2001; Dweck & Leggett, 1988; Ryan & Deci, 2000a, 2000b) and from situational factors that evoke these self-perceptions, such as proximal goals that facilitate the development of self-efficacy (Bandura & Schunk, 1981) and choice, personalization, and autonomy-supportive language that encourage people's personal involvement in a task (Cordova & Lepper, 1996; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; see also Hidi & Renninger, 2006). Additionally, past research identifies features of tasks that can inspire interest, such as novelty and the use of technology (Mitchell, 1993; Palmer, 2009).

By contrast, the present research examines the perceived social-relational context as a source of motivation. Consistent with our approach, motivation is readily transmitted along social lines. For instance, mere exposure to another person can cause their goals to spread in an automatic fashion (Aarts, Gollwitzer, & Hassin, 2004), close relationship partners can prime people with goals associated with those partners (Fitzsimons & Bargh, 2003), and minimal cues of social connection, like a shared birthday with a math major, can cause people to internalize that person's goals and achievement motivation (Walton, Cohen, Cwir, & Spencer, 2012; see also Master & Walton, 2013; Shteynberg & Galinsky, 2011). The present research, however, examines not the transmission of goals and motivation from one person to another but whether motivation can arise collectively among people as a consequence of cues of working together.

Our hypothesis also complements recent research on culture, which shows that, in independent cultural contexts, appeals to work together can sometimes undermine motivation. Hamedani, Markus, and Fu (2013) found that priming interdependence, for instance with words

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