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Undersociality is unwise

Amit Kumar[1] | Nicholas Epley[2]

[1]University of Texas at Austin, Austin, Texas, USA

[2]University of Chicago, Chicago, Illinois, USA

Correspondence
Amit Kumar, University of Texas at Austin, 2110 Speedway, B6700, Austin, TX 78712, USA.
Email: amit.kumar@mccombs.utexas.edu

Abstract

Wise decisions are often guided by an accurate understanding of the expected values of different possible choices. In social contexts, wisdom comes from understanding how others are likely to respond to one's actions, enabling people to make choices that maximize both their own and others' outcomes. Our research suggests that miscalibrated social cognition may create a systematic barrier to wiser decisions in social life. From expressing appreciation to offering support to performing acts of kindness, this program of research indicates that decisions to engage with others are driven by how people expect a recipient to respond, but that people consistently underestimate how positively others will respond to their other-oriented actions. Because connecting with others consistently increases people's own wellbeing, miscalibrated social cognition may lead to *undersociality*: being overly reluctant to reach out and connect with others. Miscalibrated expectations about social engagement can create markets for products that help people overcome these barriers in order to consume their time, money, and effort more wisely.

KEYWORDS
prosocial behavior, social avoidance, social cognition, undersociality, well-being happiness

INTRODUCTION

Human beings have thrived on this planet due to our species' nearly unmatched capacity for sociality. Having a social inclination to care not just for one's own wellbeing but to also care for others' wellbeing enables a moral instinct that encourages cooperation with others. Cooperation then enables almost everything a modern society needs to thrive, from the homes we live in to the cars we drive in to the computers and cell phones we now do seemingly everything on. The complexity of today's highly integrated marketplace was not, however, required to recognize the essential importance of sociality for our success as a species. For Darwin (1871), the essential role of other-oriented sociality for *homo sapiens* was obvious: "Selfish and contentious people will not cohere, and without coherence nothing can be effected." These benefits of sociality would, in turn, create evolutionary

pressure for "instinctive feelings" that encourage positive social engagement. Lacking the inclination to connect positively with others would make a person distinctly unsuitable for living in a cooperative society, "either a beast or a god" according to Aristotle (1905), and subject to moral sanctioning and punishment. Indeed, "Of all crimes that human creatures are capable of committing," David Hume (1739) judged in his *Treatise of Human Nature*, "the most horrid and unnatural is ingratitude."

Behavioral scientists have had no trouble identifying the "instinctive" feelings that should encourage positive social behavior, as doing good for others in ways that strengthen social bonds tends to feel good (e.g., Andreoni, 1989, 1990; Dunn et al., 2008; for a meta-analysis, see Curry et al., 2018). In contrast, acting selfishly in a way that could harm relationships may not leave people feeling like criminals as Hume envisioned, but it can leave people feeling relatively negative

(Carlsmith et al., 2008; Dunn et al., 2010). Consistent with the adaptive benefits articulated by Darwin, those who are prosocially oriented to care for others tend to perform better at work and have more successful careers (Liao et al., 2022), while also being wealthier and having more offspring than those who are more selfishly oriented (Eriksson et al., 2020).

Despite this clear reward structure, people's choices do not always seem wisely tuned to the benefits that could be gleaned from engaging positively with others. People can feel gratitude that they do not express, be concerned about someone but not reach out to offer support, have a compliment come to mind that they do not share, want to connect with a stranger in pleasant conversation but remain silent, or have a few spare minutes to spend on an act of kindness that instead gets lost scrolling one's phone. A casual observation of daily life reveals many opportunities when people could choose to behave more prosocially, and yet do not. One intuitive interpretation of this observation is to assume that people's behavior simply and directly reflects their motivation (Gilbert & Malone, 1995), inferring that people fail to invest time, money, or energy on others because they do not actually care that much about others.

Here, however, we review emerging evidence suggesting an additional possibility: that miscalibrated social cognition may create a psychological barrier to behaving more socially in everyday life. Specifically, we suggest that people's decisions about engaging with others are based on their inferences about how others are likely to respond. These inferences are guided by basic psychological processes that enable inferences about another's mind—how another person is likely to think, feel, or interpret an action—and therefore impact their likely behavioral response (Epley & Waytz, 2010). Although the capacity to make inferences about another's mind is highly useful for understanding a person's behavior in the present and anticipating it in the future, these inferences are far from perfect and prone to systematic biases that can create mistaken inferences about another's mental state and corresponding behavior (Epley & Eyal, 2019). In the context of social interaction, converging evidence now suggests that people may systematically underestimate how positively others will respond when they try to reach out and engage with another person in a positive way, at least partly due to differences in perspective between two people in an interaction (see "Why is Sociality Undervalued" below for more detail; see also Epley, Kardas, et al., 2022). Misunderstanding another's mind could then create a misplaced barrier to reaching out and engaging positively with others more often in daily life. A person might be reluctant to reach out and express their gratitude if they think the recipient will find the experience to be awkward, might not express their support to another person if they do not think it will be appreciated, or might hesitate striking up a nice conversation with a stranger if they think the person is uninterested.

We argue that misunderstanding others' reactions to positive social behavior matters for three reasons. First, even someone with prosocial intent might be inhibited from engaging with another person if they fail to appreciate how positively others will respond, making their behavior appear more self-interested than it actually is (e.g., Miller & Ratner, 1998; Miller, 1999). Second, miscalibrated social cognition may lead to *undersociality*: a misplaced reluctance to reach out and connect with others in positive ways, thereby missing opportunities to increase one's own wellbeing, to increase others' wellbeing, and to strengthen rewarding relationships. Finally, miscalibrated expectations may create market demand for products that help to overcome the psychological barriers to sociality, giving marketers insights into interventions that could enhance human welfare, and giving consumers insight into how to consume more wisely.

We believe that our research continues advancing Bazerman's (2001) call for a consumer-focused approach to the study of consumer behavior. Consumer researchers, Bazerman argued, could do more to help consumers themselves make wiser choices about how to spend their time, energy, and money. Here we suggest that consumers may misunderstand the value of social engagement, leading people to consume positive social experiences less often than consumers themselves would consider to be optimal for their own wellbeing. Indeed, a large literature makes clear that consuming experiences yields more happiness than consuming material possessions, in part because experiences are more social in nature than possessions (Gilovich et al., 2015). However, rather than making experiential purchases that could strengthen social connections, consumers can fall into a "material trap" of buying material possessions that may leave them less connected and thereby less happy (Pieters, 2013). Or, rather than spending money on others in ways that might strengthen social bonds, people might instead choose to spend on themselves out of a misplaced belief that personal spending will lead to more happiness than prosocial spending (Dunn et al., 2008, 2011). People decide how to consume their time, energy, and money routinely in everyday life. The findings we review here suggest that they could under-consume sociality in a way that could be unwise. A comprehensive understanding of consumer psychology identifies how to increase consumer welfare.

OTHER-CARE AS SELF-CARE

An entire self-care industry has emerged encouraging people to pamper themselves, but empirical evidence suggests that a more reliable method to increase one's own happiness is to spend time with and show care for others. Among the strongest predictors of someone's emotional wellbeing on any given day is whether they are with other people versus alone (Kahneman & Deaton, 2010), and research over the past two decades has suggested that

positive social relations are a necessary ingredient for happiness (Diener & Seligman, 2002; Diener et al., 2018). Indeed, epidemiological meta-analyses find that the quality of people's connections with others is a powerful predictor of both physical morbidity and mortality (House et al., 1988; Holt-Lunstad et al., 2010), as social disconnection is a psychological stressor that compromises immune system functioning and diminishes cardiovascular health (Uchino, 2009). Actions that strengthen our connections to others are likely to be highly rewarding, while psychological scientists know well that one way to make people feel reliably negative is to sit them in a lab room and ask them to focus on themselves (Fejfar & Hoyle, 2000; Wilson et al., 2014).

In fact, and in direct contrast to the message from the self-care industry, spending money on others can even leave people feeling more positive than spending money on oneself. In one experiment, those given money and asked to spend it either on themselves or others were significantly happier after spending on others (Dunn et al., 2008; see also Aknin et al., 2020), an effect that is especially strong when spending on others increases a person's sense of social connection (Lok & Dunn, 2020). Survey results suggest that the happiness gained through prosocial spending seems largely consistent across cultures (Aknin et al., 2013), and emerges early in life among young children (Aknin et al., 2012). These hedonic benefits of prosociality also appear using physiological measures of stress (Dunn et al., 2010), in neurological measures of reward system activation (Harbaugh et al., 2007; Moll et al., 2006), and in measures of cardiovascular health (Whillans et al., 2016). Highlighting the organizational benefits of other-oriented action, spending on others may even improve team performance at work. In one experiment, employees on a pharmaceutical sales team who were randomly assigned to spend bonuses on their teammates subsequently performed significantly better at their jobs than employees assigned to spend their bonuses on themselves (Anik et al., 2013).

These specific findings about prosocial spending are mirrored in other social acts done with positive intent that reliably increase a person's wellbeing, including expressing gratitude (e.g., DeSteno et al., 2014; Emmons & McCullough, 2003; Kumar & Epley, 2018; Lyubomirsky et al., 2011; Seligman et al., 2005), performing random acts of kindness (e.g., Chancellor et al., 2018; Curry et al. 2018; Dunn et al., 2008; Kumar & Epley, in press), connecting with strangers in conversation (e.g., Epley & Schroeder, 2014; Kardas et al., 2022a; Schroeder et al., 2022), and even acting extroverted (e.g., Fleeson et al., 2002; McNiel & Fleeson, 2006). Indeed, the positive impact of sociality on wellbeing is robust, emerging among both extroverts and introverts alike (Margolis & Lyubomirsky, 2020; Zelenski et al., 2012).

Of course, people will experience the positive consequences of connecting with others only if they choose to do so. Some evidence suggests that people themselves believe they engage in such prosocial actions less often than they should, or would like to. In one survey (Kumar & Epley, 2018), respondents who had just written a gratitude letter to someone reported expressing their gratitude significantly less often in daily life than they would like to. In an additional series of four online surveys (Zhao & Epley, 2021a), similar results emerged for expressing compliments, expressing gratitude, and expressing support to others in need, with respondents reporting that they engaged in these behaviors both less often than they would "like to" and less often than they feel they "should." Survey respondents' sense of being insufficiently prosocial emerged both when considering how they behave in their satisfying relationships, and to an even greater extent in their unsatisfying relationships. When asked directly how often they share both criticisms and compliments that come to their mind with someone they are close to (Zhao & Epley, 2021a), respondents in another survey reported withholding negative thoughts 62% of the time, but also reported withholding compliments 36% of the time. And in many social contexts, people show a clear reluctance to reach out to connect with others in positive ways through conversation. This includes a reluctance to talk with strangers while commuting (Epley & Schroeder, 2014; Schroeder et al., 2022), or to engage in relatively deeper or more intimate conversations that would further increase social connection once talking (Kardas et al., 2022a).

If people are made happier and healthier by engaging positively with others, and report feeling like they are insufficiently social at least in some domains, then what is holding people back from reaching out and connecting positively with others more often? Here we review an emerging body of research suggesting that social behavior involves approach/avoidance conflicts, in which choices are driven at least in part by people's expectations of the positive and negative outcomes of reaching out and engaging with others in positive ways. This research further suggests that the expectations guiding people's choices may be overly pessimistic, such that they underestimate how positively—and overestimate how negatively—others will respond to a prosocial action, tipping the scales in the direction of social avoidance more often than might be considered wise given recipients' actual reactions. Even those who would like to be more prosocial, and feel like they should be more prosocial, might hesitate when actually deciding whether or not to be prosocial.

UNDERVALUING APPRECIATION

Greeting card companies exist in part because they offer a product that affords people an effective way of doing something nice for someone else, from sending a thank you card at just the right time to expressing gratitude with just the right words. That such a product would be

necessary suggests that there is demand for products that help people be prosocial when they would like—or feel they need—to be. Although sending a thank you card may be a relatively rare event in daily life, the feeling of gratitude behind it is more common. Gratitude can also be a particularly powerful feeling because it can motivate people to reciprocate those who have helped them, or to pay forward benefits to others (Bartlett et al., 2012; Bartlett & DeSteno, 2006; DeSteno et al., 2010; Walker et al., 2016). In fact, the feeling of gratitude arguably evolved to facilitate reciprocal altruism, thereby strengthening social relationships (McCullough et al., 2008). Expressing gratitude is also a reliably positive experience for expressers. And yet, as mentioned earlier, people report not expressing gratitude as often as they would like, or as often as they should.

In an initial attempt to examine how miscalibrated social cognition might create barriers to expressing gratitude, MBA students participating in an experiment as part of a learning experience were asked to write gratitude letters to someone who had done something meaningful for them (Kumar & Epley, 2018). Expressers then completed a survey reporting on their own experience, and also indicated how they expected their recipient would experience receiving their gratitude letter. The recipients were then contacted via email and asked to complete an online survey reporting their actual experience of receiving this expression of gratitude. Replicating previous findings (e.g., DeSteno et al., 2014; Emmons & McCullough, 2003; Lyubomirsky et al., 2011; Seligman et al., 2005), those who expressed gratitude reported feeling significantly more positive than they normally feel, on average. The gratitude letter recipients also reported feeling significantly more positive than normal, being in an even more positive mood than the letter writers.

Expressers had some good sense that this would be a positive experience for the recipients, but recipients felt even more positive than the letter writers expected. Specifically, letter writer's expectations of their recipient's experience were significantly miscalibrated such that they significantly underestimated how surprised recipients would be to receive the letter, underestimated how surprised they would be about its content, underestimated how positive recipients would feel, and overestimated how awkward receiving a gratitude letter would feel. This general pattern has now been replicated in all 17 subsequent iterations of this learning exercise that we have conducted so far at the time of this writing (Epley, Kumar, et al., in press), demonstrating a very robust effect. An additional experiment conducted by Kumar and Epley (2018) confirmed that people's expectations of a recipient's response are related to their interest in expressing their gratitude to a given recipient, suggesting that miscalibrated expectations might keep people from expressing appreciation as often as they truly feel it, missing opportunities to increase both their own and others' wellbeing through this prosocial act.

UNDERVALUING KIND WORDS

Consumers have many opportunities to be kind in everyday life, but may miss out on realizing them if they fail to appreciate just how positive an impact they might have on others. For instance, if one buys a cup of coffee each morning, they could be a little nicer to their barista, perhaps simply saying "hello" or passing along a compliment that comes to mind. Over the course of any given day, people are likely to be around a variety of other people they might be kind to, from close others to less familiar acquaintances to random strangers. Although people may recognize that treating close others, such as spouses and siblings, with kindness can be a positive experience, research finds that even passing along kind words to more distant others—such as having a short conversation with a barista at a coffee shop or a longer conversation with a stranger on the train—can be a significantly positive experience (Epley & Schroeder, 2014; Sandstrom & Dunn, 2014a, 2014b; Schroeder et al., 2022). And yet, empirical evidence again suggests that people may be reluctant to share positive thoughts about others because they underestimate how positively recipients of compliments will feel (Boothby & Bohns, 2021; Zhao & Epley, 2021a, 2021b). Participants in one series of experiments, for example, wrote genuine compliments that came to mind about a person they were with at a public tourist attraction—typically a friend, family member, or romantic partner—and then reported how happy and awkward they expected their kind words would make their recipient feel (Zhao & Epley, 2021a). Just as observed in more effortful expressions of gratitude (Kumar & Epley, 2018), sharing a kind thought made the recipient feel more positive, and less awkward, than the expressers expected. These effects are not restricted to compliments between close others, as sharing compliments with strangers also seems to make recipients feel more positive than expressers expect (Boothby & Bohns, 2021).

Interestingly, the positive impact of receiving compliments repeatedly over time does not seem to wane as quickly as might be expected. In another experiment (Zhao & Epley, 2021b), people randomly assigned to the role of expresser wrote five different compliments to someone they were with at a public tourist attraction (typically a friend, relative, or romantic partner). These compliments were then given to the recipient one at a time over five consecutive days, in the order of the expressers' choosing. Although a separate group of observers expected that recipients would adapt to the daily compliment, feeling a little less positive after each one, recipients actually felt equally positive after receiving each unique compliment. People tend to adapt to the same experience over time (Frederick & Loewenstein, 1999), but this intuitive effect was not actually experienced by those receiving a new compliment each day. Either the kind words shared each day were unique enough so as to feel distinctly positive each day, or being complimented once

a day was not so frequent as to become even slightly tedious for recipients. Regardless, prosociality in the form of kind thoughts shared with others seems to have both a surprisingly positive, and a surprisingly durable, impact on recipients (see also, Kardas, Schroeder, et al., 2022).

Although kind words have a positive impact when delivered to someone at almost any time, they may be especially timely when another person is struggling and in need of support. Receiving social support is critical for one's success, happiness, and health (Baumeister & Leary, 1995; Cohen & Syme, 1985; Holt-Lunstad et al., 2010; Levin et al., 2011; Uchino et al., 1996), and providing support to others can benefit those who give it (Inagaki & Orehek, 2017). And yet, people may also at times be reluctant to reach out and express support out of the same concerns that might hold people back from expressing gratitude or giving compliments. Consistent with this possibility, participants who expressed support to others both online and in-person expected recipients to feel less positive about their attempt to provide social support than the recipients actually did (Dungan et al., 2022). This tendency to underestimate how much recipients would appreciate social support was especially strong when people reached out to more distant others, such that those who were providing support expected more distant others to respond less positively than close others would, while actual recipients felt very positive regardless of how close they were to the person expressing their support. Not feeling like it is their place, or that their support will be that impactful, could keep people who would want to help another person in need from reaching out at precisely the time another person really needs it.

FROM KIND WORDS TO KIND ACTS

It's often said that actions speak louder than words. Although comparing the positive impact of kind words against the impact of kind acts is empirically challenging because words and actions differ on so many dimensions, researchers have documented that performing kind acts can have not only a powerful immediate impact on wellbeing but also a very long-lasting impact. In one field intervention conducted within an organization, one group of participants was randomly assigned to perform five acts of kindness each week for a month for others in the organization who had been randomly (and unknowingly) assigned to the role of recipient (Chancellor et al., 2018). Compared to control participants, both those performing and those receiving acts of kindness benefited, with positive effects on wellbeing, job satisfaction, and depression still observed in the final measurement phase two months after the initial month-long intervention. These effects were especially strong for performers, possibly because the design of this intervention

had performers engaging in more kind acts (i.e., five per week for a month) than were received by the larger sample of recipients.

Whether or not kind acts have a more powerful effect on wellbeing than kind words, our research again suggests that those performing kind acts significantly underestimate their positive impact on recipients just as people do with kind words. This means that miscalibrated expectations are not only likely to inhibit kind words of gratitude, compliments, or support, but also inhibit kind actions as well. In one experiment, for example (Kumar & Epley, in press), MBA students were asked to perform any random act of kindness they could think of for someone they knew. The kind acts ranged widely, including making cookies for a friend, offering another student a ride home from campus, and buying a beverage for someone else. After completing their act of kindness, performers reported how "big" they thought the act seemed to them, how much was spent on the action (in terms of time, money, and energy, measured separately), and how they thought their act made the recipient feel. These performers then provided their recipient's email if they were willing and able to do so. We then followed-up with recipients and measured how big they perceived the act to be, how much they thought was spent, and how it actually made them feel. We observed that recipients perceived the act to be bigger than the performers did, thought more was spent on the act (in time, money, and energy), and that the recipients also felt more positive than the performers expected. In a conceptual replication of this effect (Kumar & Epley, in press), participants visiting the skating ribbon in Maggie Daley Park in Chicago were asked to give away a cup of hot chocolate to another stranger on a cold winter's day as a random act of kindness. Recipients of that hot chocolate again felt more positive than those who gave away the hot chocolate expected. Acts of kindness that seem somewhat small to those performing them may seem considerably more substantial to those receiving them, producing a positive effect on the recipients that is not just positive, but *surprisingly* positive to performers.

Interestingly, one experiment indicated that actors not only underestimate the positive impact of their prosocial act on the recipients' evaluation and hedonic experience, they also underestimate its impact on the recipients' future behavior. Kindness, like any social behavior, is capable of spreading from one person to another either by inducing indirect reciprocity (a kind act done for one person is later "repaid" to another person), or by changing what is perceived to be appropriate behavior in a given context (e.g., Chancellor et al., 2018; DeSteno et al., 2010). Participants in one experiment who had been given an item from a "lab store" as a random act of kindness were more generous to a third party in a subsequent economic game than participants who were not recipients of a prosocial act, a behavioral consequence those who actually performed that initial act of kindness did not anticipate

in their recipient (Kumar & Epley, in press). Prosociality can spread in ways that those inspiring it through their own actions do not fully appreciate.

UNDERVALUING REQUESTED KINDNESS

If being kind to others makes people feel better, then presumably asking others for help when needed would also be a positive experience for those whose kindness was requested. Nevertheless, people may be somewhat reluctant to ask for help when needed even when requests are seemingly easy to fulfill, from asking to borrow someone's cell phone to asking for directions when lost to asking a passerby to take photograph of you with a loved one. Not wanting to inconvenience someone else or risk being rejected, people may prefer to do things on their own instead—another potential instance of undersociality. Indeed, the very existence of a Wikipedia page titled "List of selfie-related injuries and deaths" makes it obvious that people might be overly reluctant to reach out to another person for help, a reluctance also highlighted by the presence of products from self-facing phone cameras to selfie sticks that enable people to perform actions without reaching out to others to request a helping hand. And yet, the passerby who is asked to take a picture of a happy couple is also being given the opportunity to perform an act of kindness that may, on average, leave them feeling more positive just as other acts of kindness do.

Several findings suggest that some of the reluctance to ask for help when needed may stem from underestimating how positively others will respond to being asked. First, people about to ask others for help tend to underestimate how likely others are to agree to their direct request for help, expecting that they will be rejected significantly more often than they actually are. These requests range from asking others to borrow a cell phone or escort them across campus (Flynn & Lake, 2008), to even what would likely be considered unethical requests to vandalize a library book as part of a prank (Bohns, 2016).

Second, people's expectations about how others will feel about being asked for help seem to guide their interest in asking for it when needed. When asked to imagine requesting help in six different scenarios (e.g., borrowing a stranger's cell phone, asking for an escort to a location, carrying boxes down stairs), people's reported willingness to ask for help was significantly related to how willing they expected the helper would be, how positive they expected the helper would feel after fulfilling the request, and how inconvenienced and annoyed they expected the helper would feel (Zhao & Epley, in press). People requesting help care not only about whether another person will agree to their request, but also about how another person feels about being asked for help.

Third, although it may be wise to consider how another will feel being asked for help, people's decisions may not end up being as wise as they could be if they misunderstand how others are actually likely to feel when asked for help. In one experiment conducted in front of a picturesque scene at a botanical garden in Chicago (Zhao & Epley, in press), visitors who agreed to participate were given an instant camera (i.e., a "Polaroid" Camera) and asked to request help from another visitor to take their photograph. Before asking a stranger for help, these requesters reported how willing, how positive/negative, and how inconvenienced they expected the helper to feel after helping. Requesters were then left to find someone to ask for help. Of the 50 requesters, 46 were accepted by the first person approached while the remaining four were accepted by the second, consistent with existing research documenting high agreement with direct requests for help (Floyd et al., 2018). After helping, the experimenter approached the helper and asked them to report their experience on the same measures anticipated by the requesters. Results indicated that the requesters expected their helpers to feel less positive than they actually did, underestimating how willing helpers would report feeling to help, underestimating how positive a mood helpers would be in after helping, and overestimating how inconvenienced helpers would feel. Those in need of help may fail to appreciate how much a request for help may trigger prosocial motivation, leaving another person not only happy to have helped, but surprisingly happy to have done so. In some cases, consumers would be wise to recognize that their needs can be happily met by a request to another person, rather than by purchasing yet another product to get a job done on their own.

BEYOND KINDNESS

From sharing kind words to performing kind acts to enabling kindness by asking for help, people seem to show a robust tendency to underestimate how positively others respond to acts that would clearly be considered prosocial: acts intended primarily to create a positive benefit for another person. We believe these results reflect a broader tendency to be overly avoidant such that systematically miscalibrated expectations extend beyond beliefs about behaviors that might be considered explicitly prosocial to include misunderstanding the consequences of acts that are more broadly social and involve simply engaging or connecting with others, such as in conversation. Although humans are deeply social species with a strong motivation to connect with others (e.g., Baumeister & Leary, 1995), deciding to interact with another person requires anticipating how the other person is likely to respond. Underestimating how positively others might respond to our social outreach, as we observe with specific examples of prosocial behavior, could make people overly reluctant to connect with others in additional positive ways.

For instance, people sometimes avoid talking to strangers because they underestimate others' interest in connecting with them (Epley & Schroeder, 2014; Schroeder et al., 2022). In fact, people systematically underestimate how much they will learn in conversation with others (Atir et al., 2022), underestimate how much others will like them after engaging in either a dyadic or group conversation (Boothby et al., 2018; Mastroianni et al., 2021), and also underestimate how much others will continue thinking about them after the conversation is over (Cooney et al., 2022). These results suggest not just a reluctance to being prosocial enough for one's own wellbeing, but a more general reluctance to being *social* enough for one's own wellbeing.

Miscalibrated expectations about positive social interactions may not only affect people's interest in connecting with others, but may also affect the media people choose to use in order to connect with others. Consumers now have many choices for how to connect with another person, from more socially-distant text-based media that lacks voice and dialogue to more intimate voice-based media like the phone or in-person interactions. Being overly reluctant to engage with others might discourage use of more socially intimate media in favor of more distant media in ways that do not maximize the outcomes of these social interactions. In one experiment consistent with this possibility (Kumar & Epley, 2021), participants were asked to reconnect with an old friend they wanted to get back in touch with either over a more socially distant text-based media—email—or over a more interpersonally intimate voice-based media—the phone. Before doing so, participants reported how they expected to feel after interacting with their old friend using both media. These participants expected to feel a stronger bond, and like they really connected to a greater extent, if they interacted with their old friend over the phone than over email, but they also expected to feel significantly more awkward over the phone than over email. When asked which media they preferred to use for reconnecting with their old friend, the expected negative outcome of awkwardness loomed large as 67% said they preferred to use email. When these participants were actually randomly assigned to reconnect using either the phone or email, those who reconnected over the phone did indeed report feeling a significantly stronger bond, and more like they really connected, compared to email (as these participants had expected). However, we observed nonsignificant differences in awkwardness, suggesting that misplaced anxiety about reconnecting using their voice led people to choose a less intimate—a less social—media for connecting that ended up yielding a less positive interaction overall. In other words, people's expectations can create preferences for suboptimal ways of connecting with others. Interactions with others come with some combination of potential costs and benefits. When consumers of communication media overestimate the costs or underestimate the potential benefits of communication media involving the human voice, this can create a misplaced preference for text-based media that is less likely to maximize one's feelings of social connection.

Miscalibrated expectations can also affect how deeply people try to connect with others, affecting what people choose to discuss in conversation. Undersociality in this case would reflect a tendency to avoid deeper and more intimate topics in conversation, choosing to discuss shallower and less intimate topics than might be optimal. In a series of experiments consistent with this possibility (Kardas et al., 2022a), people significantly underestimated how positive their experience would be discussing relatively deeper conversation topics, including discussing questions like "what are you most grateful for?" and "can you tell me about the last time you cried in front of another person?". Specifically, people underestimated how much they would enjoy these conversations, underestimated how much they would like their partner, and overestimated how awkward these conversations would be. Participants tended to do this more for deeper conversations than for relatively shallower conversations, a tendency produced by underestimating how social others would be. That is, participants underestimated how interested others would be in the meaningful information they had to share in deeper conversation. When asked to have both a relatively shallow and a relatively deep conversation, participants expected to prefer the shallower conversation before having them but reported actually preferring the deeper conversation after having it.

Interacting with another person can be among our most rewarding experiences, but social interactions also contain potential risks that must be considered before deciding to reach out and engage with another person. By underestimating how social others are—how positively others respond to signals of warmth and prosociality, or how interested others might be in engaging with us—people may end up being overly avoidant or undersocial in their own lives, missing opportunities to engage with others that would be positive experiences for all involved.

WHY IS SOCIALITY UNDERVALUED?

The robust findings reviewed thus far indicate that reaching out and connecting in positive ways has a surprisingly positive impact on others across a wide range of interactions, meaning that these biases that might make people overly reluctant to engage in prosocial behavior are not random but systematic.

One possible explanation for these results is that they reflect an artifact of socially desirable responding on surveys. Perhaps people do not want to appear immodest in the eyes of others, and hence shift their reported expectations about an upcoming social interaction in a

slightly less positive direction. Or, perhaps recipients do not want to appear unappreciative of another person's kind act, and hence shade their reported experiences in a slightly more positive direction than they actually feel. Although it's nearly impossible to rule out desirability biases in survey responses because they can be posited to explain almost any seemingly desirable survey response, we do not think they are explaining the results reviewed so far for several reasons.

First, surveys in the procedures reported above are designed to diminish the motivation for socially desirable responding. Surveys are completed anonymously and confidentially, with participants knowing their responses will never be shared, while being explicitly encouraged to respond as honestly and accurately as possible for the benefit of the research. These are critical and well-known design features for any experiment relying on self-reported expectations and experiences.

Second, several observed patterns are inconsistent with socially desirable responding, and are instead more consistent with honest reports of expectations and experiences in social interaction. For instance, several experiments find that people have more positive expectations about their interactions with friends than with strangers, consistent with people learning from prior interactions, even though people's reported experiences were equally positive in interactions with friends versus strangers. These patterns have emerged when expressing social support (Dungan et al., 2022), disclosing secrets (Kardas et al., 2022b), and having conversations (Atir et al., 2022; Dunn et al., 2007; Kardas et al., 2022a; see also Experiments 4a–4b in Epley & Schroeder, 2014 for a related result). In some experimental designs, expectations before an interaction are compared against the same person's experience after the interaction rather than with another person's experience, a design that presumably holds social desirability constant before versus after an interaction but enables honest reports of learning from experience in the actual interaction. In one experiment, people expressing their support to a stranger in need underestimated how positively the recipient would react before they actually expressed their support, but did so less after actually expressing their support (Dungan et al., 2022; see also Dungan & Epley, 2022). People also consistently underestimate how positively their conversations with others, especially strangers, will go based on comparisons between their expectation before the conversation against their experiences afterwards (Atir et al., 2022; Kardas et al., 2022a; Sandstrom & Boothby, 2021). After talking with strangers, people report being more interested in starting conversations with strangers in the future (Sandstrom et al., 2022; Schroeder et al., 2022), and also report more interest in having deeper rather than shallower conversations after having both kinds of conversations (Kardas et al., 2022a).

Finally, as mentioned earlier, people not only underestimate how positively their prosocial act will make

another person report feeling, they also underestimate how positively their prosocial act will affect another person's subsequent behavior. Those performing an act of kindness underestimated how generous their act of kindness would lead their recipient to be towards a future participant (Kumar & Epley, in press), an effect that is consistent with recipients' reported positive experience but not with socially desirable responding.

Instead, we believe the tendency to underestimate the positive impact of prosociality stems from basic processes of social cognition that are, almost by physical necessity, guided by one's own egocentric perspective on a situation that may differ from another person's perspective on the same situation (Epley & Eyal, 2019). Most relevant for understanding the impact of one's own behavior on others is a difference in how people evaluate their own behavior compared to how it might be evaluated by others. In particular, social behavior tends to be judged on at least two fundamental dimensions, competency and warmth, with people tending to evaluate their own actions in terms of competency compared to being evaluated by others primarily in terms of warmth (Abele & Wojciszke, 2007; Fiske et al., 2007; Wojciszke, 1994). Those performing an action are attending to what they are doing and how well they are achieving the goal of some action, meaning that competency is a primary focus, while targets are trying to understand the meaning of some social action, making the warmth conveyed by the action—its positive or negative intention—a primary focus. As a result, potential prosocial actors may be concerned about how well they are articulating their gratitude, how capably they are providing their support, or how much they have chosen just the right act of kindness to make another person happy, but the recipients of these actions are likely to be more focused on the prosocial intent (or warmth) conveyed by the act itself.

For example, in the gratitude letter experiments described earlier (Kumar & Epley, 2018), 75% of those who imagined writing a gratitude letter indicated first thinking about one of two attributes related to competency ("what will I actually write" and "how articulate will I be") rather than attributes related to warmth ("how friendly and kind will my letter appear to be?" and "how sincere will my letter appear to be?"), and evaluations of competency predicted people's interest in expressing their gratitude to another person. In an experiment involving compliments to strangers, complimenters' evaluations of how competently and skillfully they could deliver their compliment predicted both how negatively and how positively their compliment would impact the recipient (Boothby & Bohns, 2021). More directly testing the gap in construal between performers and recipients of prosocial acts, 76% of people who imagined expressing support to another person indicated that the first thought that came to their mind was about an attribute related to competency, whereas 75% of recipients indicated that the first thought that came to their mind

when they imagined receiving support was an attribute related to warmth (Dungan et al., 2022). Consistent with this difference in attention, those performing a random act of kindness were insensitive to the value conveyed to the recipient in terms of its warmth, expecting similar responses when a person received a gift in a context with little interpersonal warmth (winning the gift randomly) versus in a context with considerable warmth (being given the gift as an act of kindness), even though recipients felt significantly more positive in the context that conveyed warmth (Kumar & Epley, in press).

In addition, those performing a prosocial action may also be significantly more miscalibrated in how competently they will be observed by the recipients of their actions than they are in terms of the warmth of their actions. This pattern has been observed both when expressing gratitude (Kumar & Epley, 2018), and when giving compliments (Zhao & Epley, 2021a). Shifting prosocial actors' attention to the warmth conveyed by their action should then lead to more calibrated expectations of how they will be evaluated, and increase interest in performing a prosocial action. Although this hypothesis has received limited empirical attention so far, one experiment confirmed that leading those who had generated a compliment to consider how it would evaluated by the recipient in terms of its warmth, compared to its competency or to a control condition, increased participants' interest in actually sharing the compliment (Zhao & Epley, 2021a). It did not, however, lead to a statistically significant increase the percentage of participants who actually sent their compliment to the recipient as part of the experiment. Interestingly, many participants who did not share their compliment indicated that the experiment was "not the right time" to share their compliment, suggesting other competency-related barriers that may have continued to inhibit prosociality. Nevertheless, these results suggest that people may be more likely to behave prosocially if they truly knew just how positive their prosocial acts would make others feel.

WHY MISCALIBRATION MATTERS

In his Nobel Memorial Prize address, Becker (1993; emphasis added) noted that rational behavior involves people making choices that "maximize welfare *as they conceive it*." Rationality does not require accurate insight into how best to maximize one's own welfare. Instead, it requires acting in line with one's expectations such that, as Becker put it, "behavior is forward-looking." We believe the examples of undersociality we have reviewed thus far may be perfectly rational by Becker's definition because people's behavior is consistent with their forward-looking expectations, but that it may also be consistently mistaken in ways that keep people from actually maximizing their welfare. When expectations are based on a perspective that is misaligned with people's

actual experience, rational action could lead to suboptimal—or unwise—choices. Miscalibrated expectations can then create misplaced barriers to maximizing welfare. When people worry about saying or doing the wrong thing, it might prevent them from saying or doing anything at all.

Other-oriented action can therefore be impeded not by a lack of motivation to connect with others, but rather by mistaken beliefs about how others will react to positive social action. Because people tend to infer others' motivations and dispositions by assuming a direct correspondence with their observed behavior (Gilbert & Malone, 1995), a reluctance to engage with others may be misinterpreted as a lack of interest in connecting with others rather than as the presence of psychological barriers that inhibit prosociality. Miscalibrated expectations may lead people to be perceived as more self-interested than they actually are (Miller, 1999).

Finally, miscalibrated expectations about positive social interactions can also create a barrier that keeps people from having the very experiences that would calibrate their expectations, thereby maintaining them over time. People can only learn the power of gratitude by expressing it, come to understand the impact of compliments by sharing them, and see just how big seemingly small acts of kindness can be to recipients by performing them. When someone undervalues the positive impact their prosocial act could have on another person and then avoids engaging with another person, they miss the chance to learn just how positive their impact could have been. Undersociality can be self-fulfilling.

WISE MARKETING

Efficient markets supply goods and services that meet consumer demand, and marketing is the process of getting those desired goods and services to consumers most effectively. Consumer demand can be guided by people's experiences but also by their expectations about experiences, meaning that the expectations about sociality we have documented here may create demand for products to overcome the psychological barriers to interacting with others even if they are miscalibrated with actual experience. Anxiety about approaching another person to ask for a picture can create a market for a product like the selfie stick that allows consumers to take the picture themselves. A desire to express gratitude, show support, or pass along kind words may have helped to create a market for greeting cards that satisfies people's concerns about getting the words in these expressions just right. And a strong motivation to belong coupled with anxiety about actually reaching out to connect with another person more directly can create a market for social media that allows people to passively learn about a colleague's family, catch up on an old friend's life, or find out about a new friend's history all without the feared awkwardness

of actually engaging anyone in conversation. These markets attempt to maximize the expected benefits of social engagement while minimizing the expected costs, even if some of those calculations are based on miscalibrated expectations. Passively scrolling through social media feeds does not, for instance, leave people feeling happier in the way that actively engaging with another person in conversation does. In fact, it leaves people feeling less happy because consuming social media, somewhat ironically, is often not a social experience at all (Verduyn et al., 2015).

To the extent that demand for products that enable social interaction is guided by miscalibrated expectations about social interactions, developers creating these products may not actually be maximizing consumer wellbeing in the way they might hope. That is, misplaced preferences can create consumer demand for consumer products that may be suboptimal in the long run. Wise marketers may therefore find opportunities to alter consumers' expectations to examine if demand for consumer products changes in a way that is aligned with their experiences. Better calibrating people's expectations, and thereby reducing undersociality, could increase people's willingness to engage with others in a way that would increase the wellbeing of both parties. Of course, in addition to attempts at calibrating consumers' expectations, another approach would be providing consumers with goods or services that take into account people's existing expectations. Firms might then focus on helpful interventions to encourage sociality.

One potential way to better calibrate people's expectations is to give them more experience with acting prosocially towards others. When a person finds out that their sociality is met with more grins than shrugs, this could encourage subsequent social engagement. Experts in marketing are sometimes quick to jump to "push"-like solutions in order to motivate consumers to do something without fully understanding the psychological processes that need to be addressed. We believe considering the barriers that might keep people from engaging in rewarding ways with others highlights the importance of reducing those barriers to encourage behavior that consumers would ultimately be happier with, such as conversation cards that might help people learn something new or engage with others more deeply. If, as some of our experiments suggest, awkwardness is a barrier to connecting with others, then marketers can more effectively provide solutions that could help consumers make the most of opportunities to enhance wellbeing. Greeting card websites might have campaigns along the lines of "Gratitude Day" in order to reduce fears associated with anticipated awkwardness about sending a note of appreciation. In a similar vein, businesses could market products like "getting to know each other" prompts that focused on asking deeper rather than shallower questions. Note that testimonial-oriented campaigns could be a successful way to encourage people to buy social

products like these, especially if this word-of-mouth focuses on the product speaking to a barrier. Perhaps one of the best ways to get over concerns about competency is to hear another consumer say that a card helped them know what to talk about.

Indeed, we think this area of inquiry has implications for marketers, designers at firms, and consumers themselves. Marketers can devote more energy and attention to helping do good for the consumers they serve. They could do this by thinking about how to reduce the barriers that might make people reluctant to engage with others in positive ways, and also thinking about whether there are ways to enable experience first, thereby potentially uprooting people's expectations about social interactions.

Companies may also design contexts within their organization with sociality in mind as well. People may not always think about the importance of social connections with others, or may not believe that opportunities to connect will matter much. Even the architectural design of meeting spaces, for instance, could remove barriers to engagement by creating spaces where seats face each other in small groups, or wider hallways that enable easier conversation. An organization could offer discounts during coffee breaks or lunch to sit at a community table to talk with colleagues, create social recognition programs that enable easy and public expressions of gratitude, or provide funding that rotates across employees to sponsor random acts of kindness in the organization.

Importantly, we believe our research has implications not just for people marketing products to consumers, but also to consumers looking to maximize their own and others' welfare. We believe it suggests how consumers might make their own consumption choices more wisely. Consumers may not always make decisions with wellbeing in mind, but understanding the surprisingly positive outcomes of sociality might encourage consumers to focus on ways to connect with others more routinely and easily, from deciding not to buy that fence for their yard that would create separation with a neighbor to removing apps from a cell phone that might use one's attention less satisfyingly than being more directly engaged with strangers or friends nearby. Everyday life provides people with routine consumption decisions about how to invest their money, time, and energy—decisions that involve both themselves and others. Wiser consumption would likely involve engaging in experiences that create positive connections with others, with consumer wellbeing likely increasing from overcoming undersociality.

Consumer behavior researchers are generally aware that people have approach and avoidance motivations, but our research program suggests that the inputs to people's decision calculus make them overly avoidant in ways that can make them appear more self-interested in the presence of others than they might really be, and keep them from optimizing their own and others' wellbeing. We believe that undersociality is an important

psychological phenomenon, but we also believe that creating tools to address these barriers could be a more applied marketing issue. More broadly, we think consumer behavior researchers interested in advancing consumer wellbeing could devote considerably more attention to interpersonal decisions given the importance of social connections to wellbeing, in line with Bazerman's (2001) call for "consumer research for consumers." Wise marketing of social engagement has the potential, we believe, to help people make wiser social decisions.

OPEN QUESTIONS

The research we have reviewed indicates that people can underestimate how positively others will react to their prosocial actions, but the second generation of research in this area will likely investigate the factors that moderate miscalibration. One critical issue is understanding how the strength of one's relationship with a recipient might moderate miscalibration. Because people are likely to have more experience engaging with close others than with distant others, and know that close others are likely to be interested in engaging with them but are more uncertain about distant others, people's expectations about social interactions with more distant others may be more miscalibrated than with closer others. Research on social support reviewed earlier indicated that people expected a more positive response to their expression of support from a close other than from a more distant other, even though the expression was valued equally positively by recipients (Dungan et al., 2022). Similar results emerged when people anticipated the outcome of a relatively deep conversation, expecting a more positive experience with a close other than with a stranger even though the actual experience was similarly positive (Kardas et al., 2022a). Strangers can become friends, after all, through conversation. People underestimate how positively both close others (Zhao & Epley, 2021a) and strangers (Boothby & Bohns, 2021) respond to compliments, but the extent to which expectations are miscalibrated across relationship contexts has not been examined. The existing research thus far suggests that people may be especially surprised at the positive outcomes of expanding their social network to engage with more distant others. It would be very interesting for further research to investigate the possibility that potential prosociality towards and social engagement with acquaintances and strangers represents a relatively untapped source of wellbeing in daily life. People have many opportunities in their everyday lives to expand the reach of their prosociality, opportunities that, if taken, would likely enhance both their own and others' wellbeing.

Also interesting is the extent to which undervaluing sociality is moderated by stable differences across people, either at the individual or cultural level. This moderation could emerge either through stable differences in

people's expectations about the outcomes of social behavior, or through stable differences in people's actual experiences of social behavior. For instance, research reviewed earlier indicates that both extroverts and introverts experience more positive affect when acting extroverted. However, when asked to predict their experience, extroverts expect to feel more positive when acting extroverted while introverts expect to feel less positive, meaning that introverts tend to be especially likely to underestimate the positive experience of sociality (Zelenski et al., 2013). Personality traits related to sociality may therefore moderate people's expectations about social interaction more than their actual experiences in social interaction. Differences in social behavior between extroverts and introverts may therefore stem from differences in their expectations rather than from differences in their experiences. Similar patterns may also emerge across cultures, such that differences in cultural norms related to sociality may be driven by differences in expectations about the outcomes of social interactions more strongly than by differences in the actual experience of social interaction.

The mechanism that may explain why people undervalue sociality based on a perspective gap in attention paid to warmth versus competency also predicts moderation in the types of social engagement that will be most likely to be undervalued: those that most clearly express warmth to another person. Many of the results reviewed above involve direct in-person engagement with another person. These are the kinds of intimate contexts that are most likely to express warmth and create strong social connections. Less intimate prosocial actions, such as anonymous charitable giving, or obligatory prosocial actions, such as sending a seemingly required or forced thank-you note after receiving a gift, are perhaps less likely to convey the same degree of positive intent, liking, friendliness, and warmth. To the extent that those performing these positive social acts are relatively less attentive to the warmth conveyed by their act, as they seem to be with the media through which they connect with another person (Kumar & Epley, 2021) or the positive intent underlying an act of kindness (Kumar & Epley, in press), then we would expect more calibrated expectations for seemingly prosocial actions that may not seem as prosocial to recipients.

If people fail to appreciate how positive their prosociality will impact a recipient, then they may also underestimate the negative impact that their antisocial behavior may have as well. When an act is characterized by its relative lack of warmth—rather than by its presence—this might hurt others more than antisocial actors anticipate. A seemingly minor insult or rude comment may sting more than the commenter or insulter expects, and may not be forgotten as quickly by a recipient as expected (Cooney et al., 2022). Although we have focused this program of research on positive social behavior partly because of an interest in understanding barriers

to maximizing wellbeing, it could well be worth examining whether similar effects emerge in the domain of antisocial acts, thereby creating more antisocial behavior than might be optimal.

Finally, our findings focus on dyadic interactions, but we believe it would be quite important to extend work on these perspective-based asymmetries to group or collective interactions. For instance, intergroup conflict can be created by prosocial rather than antisocial intent (Brewer, 1999), with aggression towards outgroups driven by a desire to protect one's ingroup rather than by a desire to harm the outgroup. Those in the midst of conflict tend to recognize those prosocial motives in the aggressive actions of their own ingroup, but infer that aggression by the outgroup is driven by antisocial motives of hatred or a desire to inflict harm (Waytz et al., 2014). A better understanding of other people's perspectives in group contexts could help suggest solutions to seemingly intractable conflicts.

CONCLUDING THOUGHTS

Sociality may be a defining feature of humanity recognized since the time of Aristotle (Dunbar, 1993; Frith & Frith, 2005; Herrmann et al., 2007), but this does necessitate that people be optimally social in their daily lives. Because of differing perspectives on a social action, uncertainty about another's interest in engaging, and an inability to learn from social actions that are avoided (Epley, Kardas et al., 2022), accurately anticipating the full impact of our own positive social behavior on another person is challenging. Indeed, from expressing gratitude to giving compliments to performing acts of kindness to requesting help to engaging in deep conversations, the experiments we have reviewed suggest a tendency for people to undervalue the positive impact that their social behavior will have on others. Undersociality can keep people from maximizing their own and others' wellbeing in everyday life. Some reluctance to reach out and connect with others need not reflect a beastly or godly disconnect from social life as Aristotle articulated, or an "unnatural" level of ingratitude as Hume suggested, but rather may reflect miscalibrated social cognition. Consuming time, effort, and money wisely requires understanding the consequences of our actions. Failing to recognize the positive impact of sociality could unwisely keep the most social of all primates from being social *enough* for their own good.

CONFLICT OF INTEREST
The authors declare no conflicts of interest with this research.

ORCID
Amit Kumar https://orcid.org/0000-0002-1025-1335
Nicholas Epley https://orcid.org/0000-0003-2722-9799

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