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Stand By or Stand Up: Exploring the Biology of the Bystander Effect

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On March 27, 1964, New Yorkers awoke to news of a horrific event. As the headline story in the *New York Times* began: “For more than half an hour, 38 respectable, law-abiding citizens in Queens watched a killer stalk and stab a woman in three separate attacks in Kew Gardens.” The victim was Kitty Genovese. A long-time resident of Queens, Genovese had been making her way home from work when she was attacked. She ultimately collapsed bleeding in a doorway and died. Over the ensuing weeks, a media frenzy fixated on the shocking details of the case, painting a grim picture of urban life. What once seemed familiar and safe now appeared fraught with danger—any stranger a potential murderer, any neighbor ready to turn a blind eye (1).

When Genovese’s murder blasted the headlines, Bibb Latane had just completed his Ph.D. and John Darley was still a graduate student. Spurred by her story, these young psychologists teamed up to make sense of this unsettling collective inaction. To do so, they enrolled NYU students in a study and gave them the innocuous prompt to talk about their college experience thus far. During the ensuing conversation, something unexpected happened: a research associate, posing as a student, appeared to have a seizure. The participants’ reactions were striking. When students believed that they were the sole witness, they reported the emergency 85% of time. When they believed that others had also observed the seizure, that number dropped to a shocking 31% (2). Their conclusion: the more people present at the scene of an emergency, the less likely any one individual is to intervene. But why? Latane and Darley identified three processes that they believed contributed to bystander inaction: diffusion of responsibility (individuals divide responsibility among those present), evaluation apprehension (fear that one’s actions will be judged when in the presence of others), and pluralistic ignorance (the tendency to look to the inaction of others present as evidence that intervention is not necessary). The authors challenged the

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sinister idea that people are apathetic or indifferent. Rather, they argued, most individuals are thoughtful humans caught within a matrix of indecision (2).

Over the last 60 years, scores of researchers have spent their careers exploring the neurobiology of this complex matrix. One of the first major breakthroughs came from an unlikely source (rats) and an almost equally unlikely hero. At the time of Genovese's murder, Jaak Panksepp was working as a night orderly in a psychiatric hospital. Fascinated by the patients he observed, the Estonian immigrant went on to pursue a doctoral degree in psychology, using animal models to explore the biological basis of behavior. But when he implanted electrodes into the brains of rats, he witnessed something unexpected: brain stimulation led not just to behavior; it also seemed to cause an *emotional response*. This extraordinary discovery—that animals could experience emotions—was swiftly rejected by both his mentors and the scientific community at large (the prevailing wisdom at the time was that emotion was unique to humans) (3).

Nevertheless, Panksepp persisted. He went on to describe seven core emotional centers in rodents—rage, fear, lust, seeking, care, panic, and play—all localized to ancient areas of the brain. (Among his many discoveries, he discovered that rodents "laugh" when tickled—thus earning his nickname "rat tickler.") Equally revolutionary was his later demonstration that these centers were activated not only by the rats' own experiences but also by simply *witnessing* the experience of other rats (4). Panksepp had discovered *affective empathy*—what we might now think of as emotional mirroring. But this was only part of the story.

Affective empathy is present in all of us from birth. Imagine a nursery: one baby cries and before long they all join in. At this developmental stage, babies cannot tell which emotions are their own, let alone regulate them. Over time, they learn. By six years of age, children are able to distinguish their own emotions from others. They also begin to recognize the distinct intentions, motivations, and perspectives of others. This skill—most commonly referred to as theory of mind or mentalization—is foundational to *cognitive empathy*: the ability to appreciate the experience of others without necessarily experiencing the corresponding emotions. [Recent work suggests that cognitive empathy relies on a network that includes the prefrontal cortex and the temporoparietal junction (5).]

So how do these systems work together in our daily lives? More specifically, thinking back to the bystander's experience: when we're forced to confront suffering, to what extent do our reactions stem from affective empathy, cognitive empathy, or something else entirely? What motivates an individual to act or not to act?

To better understand this question, Feldman-Hall and colleagues designed a fascinating experiment, echoing the infamous Milgram experiment on obedience. Their team recruited 19 participants and gave each of them a small pot of money. The subjects were then asked to choose: watch innocent people get shocked or spend the money to reduce or prevent these shocks. The participants' baseline personal distress (a proxy for affective empathy) and cognitive empathy were measured prior to and during the experiment. Researchers assumed that participants would spend money to prevent innocent people from being harmed, but which attribute would best predict altruistic behavior? The results were clear: the more

baseline cognitive empathy, the more money participants gave up. Affective empathy did not correlate with their choices *at all*. The more surprising—and far darker—result of the study was that the average participant retained 60% of the money while they watched people suffer. Not a single person gave up all of their money to prevent the shocks (6).

While the above study set out to define how and why people intervene, they unintentionally highlighted the alternative (they don't). This phenomenon appears to be largely driven by *empathy avoidance*, the instinct to suppress thoughts and feelings that are unpleasant. Empathy avoidance is incredibly common in our day-to-day experiences: from walking by a homeless person to scrolling past headlines of the most recent mass shooting. Recent imaging has shown that this avoidance is correlated with downregulation of the medial prefrontal cortex (7). And it's important to recognize that this process can be highly adaptive. Consider an oncologist rounding in the medical ICU: without emotional control, it would be impossible for them to do their job.

While we often focus on individual-level factors in the bystander effect, no one exists in a vacuum. The entire decision-making process is filtered through a myriad of social factors including individual and group dynamics, social context, and setting (7) (see Figure 1).

On a societal level, the problem is that too often individuals don't intervene. So how can we use our understanding of bystander behavior to promote intervention? One of the first programs to attempt this was Green Dot (seeking to prevent sexual violence). Their approach was to educate, train, and actively promote culture change by leveraging two major strategies: identifying socially influential individuals to model the targeted behaviors and increasing feelings of individual efficacy. Over the past 10 years, many other organizations have created initiatives that follow the Green Dot model (e.g., *Hollaback!, STEP Up!*, and *It's on Us*) (8).

The data show that these types of programs work. For example, *Take Care* recently demonstrated that even a 20-minute online class (taken for extra credit) can increase bystander intervention. Other research looking at racial ingroup/out-group effects showed that simply being part of a multiracial team increased bystander intervention (9). Successful programs target social factors and increase cognitive empathy (8). And when bystander interventions have been studied in conjunction with functional imaging (7,10), results have confirmed what we know must be true: people's brains change along with their behavior.

On that fateful night 60 years ago, Kitty Genovese was, in fact, brutally murdered outside of her New York City apartment. But the headlines didn't tell the full story. The truth is that Genovese was murdered at 3 o'clock in the morning (while most people were asleep), some onlookers described uncertainty in what they saw (i.e., they did not believe Genovese was in danger), and the final attack that led to her death was in a stairwell, blocked from the view of potential onlookers. Not only this, several people *did* try to intervene: both by calling the police and by yelling at the attacker. Meanwhile, Genovese's friend and neighbor ran to her side, holding her in her arms as she died (1). The original story of the murder is told as a parable on the intrinsic apathy and indifference of humanity, but the truth is much more complicated. Neuroscience and history show us that the ability to be an upstander is

within us, deeply rooted in our limbic circuitry. Now, more than ever, we need to make the deliberate choice—as both individuals and as part of our collective culture—to engage it.

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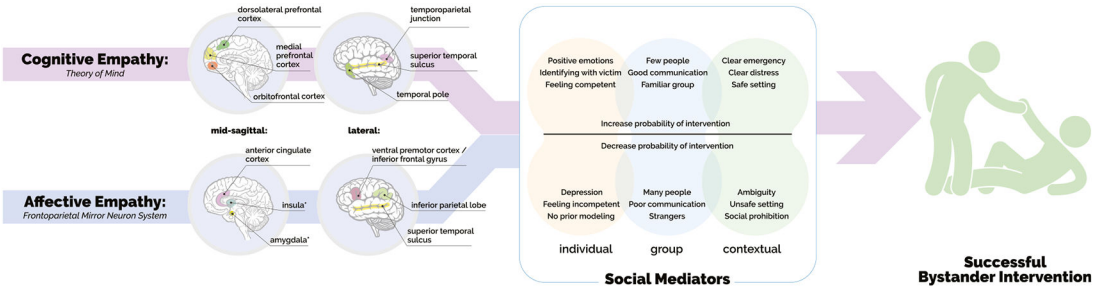

Figure 1.

Key factors influencing bystander intervention. Affective empathy is a process in which humans directly experience the emotional state of another. Key brain areas implicated in affective empathy include the amygdala, insula, anterior cingulate cortex, and frontoparietal mirror neuron system (superior temporal sulcus, inferior parietal lobe, and the ventral premotor cortex). Cognitive empathy is the process of identifying with another person's perspective and is thought to involve the medial prefrontal cortex, orbitofrontal cortex, dorsolateral prefrontal cortex, temporoparietal junction, superior temporal sulcus, and temporal pole (5,6). Cognitive empathy appears to be most important for bystander intervention (6,7). This process is influenced by individual, group, and contextual factors. At the individual level, witnesses are more likely to offer aid when they are in a positive emotional state, have watched other people model helping behavior, and believe themselves competent to assist (8,9). Identification with the victim also leads to more helping behaviors [and appears to directly relate to the degree of cognitive empathy (10)]. Group dynamics that increase the probability of intervention include when there are fewer people present, when the potential bystander is among friends (believed to be secondary to less fear of negative social appraisal), and when there is good communication between bystanders. Situational factors that increase intervention include a high degree of emergency and clear signals of victims' distress. The setting of the emergency also plays a role. Individuals are more likely to intervene in places where they feel comfortable and where it is perceived to be safe (both physically and emotionally). Together, these social factors modulate intervention through the cognitive and affective empathy circuits described above (7).