Persuasion and Influence: What makes a successful persuader?

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Abstract

What makes people successful at influencing others? In this review, we focus on the role of the persuader (i.e., person who attempts to influence a recipient), drawing from findings in neuroscience to highlight key drivers that contribute to persuaders' decisions to share information, and variables that distinguish successful persuaders from those who are less successful. We review evidence that people's motivations to share are guided in the brain by value-based decision making, with self-relevance and social-relevance as two key motivational inputs to the value computation. We then argue that persuaders who exhibit higher awareness of social considerations and increased recruitment of the brain's mentalizing system are more successful. We conclude by suggesting that approaches integrating social and neural networks can productively advance knowledge in this field.

Highlights:

- People share information with others because it is valuable, both for themselves and others.
- Decisions to share involves the brain's subjective valuation system.
- Successful persuaders are better at considering other people's mental states.
- Successful persuaders show increased activity in the brain's mentalizing system.
- Successful persuaders are socially flexible, able to change strategies depending on context.

Introduction

What makes certain people more effective than others at promoting their ideas (i.e., successful at getting the recipient to adopt their view)? We draw from findings across disciplines, with a focus on contributions from neuroscience, to highlight key drivers behind people's decisions to share information, as well as variables that distinguish successful persuaders from those who are less successful. We first review evidence that across diverse contexts, people's motivations to share information with recipients are guided by the value that they expect to derive from sharing. We draw from a neural model of valuation in which brain activity in ventral striatum (VS) and ventromedial prefrontal cortex (VMPFC) integrate bottom up stimulus inputs with top down motivations to assess the value of stimuli [1]; within this framework, we highlight that self-relevance (tracked particularly by activity within subregions of medial prefrontal cortex (MPFC) and posterior cingulate (PCC) [2]) and social-relevance (tracked particularly by activity within the brain's so-called "mentalizing system" in subregions of temporoparietal junction (TPJ), dorsomedial prefrontal cortex (DMPFC), precuneus (PC), and right superior temporal sulcus (rSTS) [3]) are two key inputs to the computation of the subjective value of sharing [4]. Next, we review evidence that variation across people in how much weight they place on the social dimension distinguishes successful from unsuccessful persuaders. Across diverse contexts, persuaders who exhibit higher social awareness and engagement of the brain's mentalizing system [5,6], thereby making the value of the information clearer to the recipient, are more likely to be successful influencers. We conclude by highlighting new research that integrates brain responses and social network properties as one productive avenue to advance knowledge of the factors that lead a persuader to be successful.

The Role of Valuation in Motivations to Share and Influence

Recent evidence from communication, psychology, and neuroscience demonstrates that people find opportunities to share information to be valuable [4]; for example, participants are willing to give up money to share information, and sharing information engages the brain's positive valuation system [7,8]. The process of positive valuation most consistently engages the brain's VMPFC and VS [9]. This valuation system is implicated in converting the subjective value of disparate stimuli onto a single common scale, allowing people to make choices between things that aren't inherently comparable (e.g., should I spend money on a chocolate bar or a salad or save the money for retirement?) [9,10], and is guided by higher-level motivations and goals (e.g., when the goal to eat healthy is salient, subjective value of the salad is likely to be higher than when one is feeling indulgent) [11]. Decisions to share information constitute a specific form of value-based decision making [4,12]. Accordingly, activity in the neural valuation system, including meta-analytically defined subregions of VS and VMPFC known to track value of stimuli [9], increases during exposure to news articles that people want to share relative to articles they do not want to share [8,13], and scales with enthusiasm for sharing messages [14].

Two key inputs to the overall calculation of the subjective value of sharing information are self-related and social considerations [4,12]; people share information because they believe that sharing will lead to valuable outcomes for themselves [8,15,16], for the receiver [16–18], or for the relationship between them [4]. Sharing information can benefit the sharer by making them look good, by appearing knowledgeable, relevant, or helpful [15,16]. Indeed, neural regions associated with self-related processing, consisting of portions of MPFC and PCC identified in a meta-analysis to track judgements of self-relevance [2], are robustly engaged when participants consider information to share [8]. Further, activity in these regions scales with participants' preferences and enthusiasm to spread the information [8,14]. Further, sharing information is an

inherently social process and requires sharers to understand what content will be valuable to others [16]. Accordingly, neural regions associated with mentalizing, including portions of the MPFC, PC, TPJ, and rSTS identified to be engaged during theory-of-mind tasks in a large study [3], are activated during decisions to share information [8], and people are more likely to share information with higher perceived utilitarian value [19,20]. In these ways, sharing information supports fundamental human desires to promote and uphold a positive self-image (i.e., self-presentation motives) [21], and to socially belong and bond through receiving affirmation [16,22]. This parsimonious model of value-based sharing, with self and social considerations as key inputs, is derived from brain-based models of valuation highlighting the role of VS and VMPFC as a "final common pathway" in comparing the subjective value of different stimuli, such as potentially shareworthy ideas [1]. Observing the brain in real-time as people are exposed to ideas and make decisions about sharing has offered new insight into the key processes that unfold. In addition, brain activity in response to news articles in small groups of people within the three brain systems predicts large-scale virality of the news articles above and beyond self-reported sharing intentions [1], highlighting an additional benefit of measuring neural responses.

Extant neuroscience evidence does not explicitly address distinctions between specific motivations that people may have in sharing information, but suggests that people broadly engage a domain-general subjective value system when considering sharing information, and brain activity consistent with self and social considerations are two key inputs to this subjective value calculation [4]. People may be motivated to share information for various reasons, such as to appear knowledgeable, bond with friends, or persuade others [16]. In the following section, we focus on one of these motivations, reviewing evidence on what makes someone successful at persuading and influencing others. We review evidence suggesting that successful persuaders are

marked by a greater focus on the social input to the valuation system, and that social motivations engage the mentalizing system and guide input to the overall valuation signal.

Considering Social Relevance Distinguishes Successful Persuaders

Given the decision to share an idea or argument, what makes certain people more effective at persuading and influencing others? Successful persuaders show higher engagement of the brain's mentalizing system, particularly within the TPJ, during initial exposure to ideas [6] and story-listening tasks [5]. Further, successful persuaders are better at understanding others' mental states [23], more socially flexible [24–26], able to adapt strategies based on the situation and receiver characteristics. This increased social awareness may allow people who are more effective at persuading to present information to maximize the value of the information for the receiver.

Supporting this notion, successful professional salespeople show high levels of emotional intelligence, or ability to understand how customers *feel*, so that they can effectively frame their pitches to meet customers' needs [25–28]. Relatedly, successful salespeople are skilled at adapting strategies depending on customers' changing needs, with the ability to react to different stages of customers' decision processes [23–25,28,29]. These findings emphasize the importance of social awareness to being an effective persuader, and that the ability to mentalize is key to making the value salient to the receiver of influence.

Neural evidence extends these findings, suggesting that greater focus on social factors distinguishes successful persuaders from unsuccessful persuaders [6,5]. For example, successful salespeople (e.g., top performers in sales and maintaining customer relationships) scored higher on paper-and-pencil measure of interpersonal mentalizing and showed greater recruitment of

regions within the brains's mentalizing system (TPJ, MPFC) during story-listening tasks that required mentalizing to understand the characters [5]. Incorporation of neuroimaging methods in this study helped validate a new theory-driven interpersonal mentalizing scale, highlighting the role of neuroscience in advancing theories on persuasion and social influence [5].

Greater mentalizing also characterizes successful persuaders who are not professional salespeople [6]. In one study, a first set of participants imagined being "interns" at a television studio, and a second set were "producers". The "interns" were shown numerous TV show ideas, and then created messages to persuade "producers" to either accept or reject a show idea. "Interns" who were more successful at persuading "producers" to appreciate their preferred show ideas showed greater activations in the brain's mentalizing system (TPJ) when first considering their preferred ideas that led to successful influence. This finding highlights advantages of neuroimaging, in that activity was measured in 'real-time' as participants actively considered ideas, without relying on people's limited ability to introspect and identify their internal states [30]. Specifically, this finding suggests that successful persuaders not only show greater social awareness while creating persuasive messages but are also marked by greater activity within one key region of the mentalizing system during initial idea exposure, which may better position them to craft messages later on. Further, these increased social motivations (i.e., reflected through activations in the mentalizing system) may guide input to subjective valuation calculations of sharing the idea.

Evidence from non-human primates also supports links between individual differences in engagement of brain regions associated with social processing and successful influence. Monkeys and chimpanzees have brain systems dedicated to processing social interactions, including parts of the PFC and mid superior temporal sulcus [31,32], that are analogous to the

human mentalizing system. Further, gray matter volume and functional activity of brain regions implicated in social processing (PFC, temporal sulcus), in macaque monkeys are correlated with social statuses of individual monkeys [33]. Together, these findings suggest that socially influential individuals are marked by stronger recruitment of brain activity that supports understanding others' minds.

Successful persuaders also tend to have personality traits and social positions that promote a more socially-oriented perspective. For instance, high self-monitors are especially attuned to social expectations and interpersonal feedback, frequently adapting their behavior to match the appropriate social context [34]. In turn, individuals high in self-monitoring are more successful in persuading others, selling products, and achieving promotions [35–39]. Individuals high in self-monitoring also tend to occupy social network positions in which more people rely on them to communicate with others (i.e., they span more structural holes within their social networks, meaning that their contacts are less connected with one another), and hence potentially greater exposure to multiple perspectives [38,40–42]. Although such findings in humans are correlational, research from non-human primates show a causal link between social network structure and brain structure and activity [43]. In one study where social network sizes of macaque monkeys were manipulated, larger social networks led to increases in gray matter and functional coupling in neural areas associated with social processing (PFC) [43].

Indeed, being a connecting agent for different social groups leads individuals to develop the intellectual and emotional skills that make them successful at getting others to adopt their ideas [44,45]. In turn, this effect is manifested through higher work performance, faster promotions, and larger pay [45]. Neuroscientific evidence provides additional insights to this account, suggesting that effective persuaders may be placed in strategic network positions and

use their brains differently during exposure to ideas that go on to be successfully transmitted. For example, teens in brokerage positions within their Facebook networks (i.e., having ego-networks with fewer friends being connected with one another, meaning that the individual "brokers" more information between friends) showed greater activity in brain regions associated with mentalizing (MPFC, PC, TPJ), when making decisions about what products to recommend to others [46]. In sum, successful persuaders are often information brokers in their social networks [45], and may use their brains to favor social considerations in promoting the value of an idea to receivers. Similarly, individuals' dynamic neural responses (e.g., functional connectivity within subregions of the mentalizing system) during social interactions are associated with the shape of their social networks [47,48].

More broadly, human brain structure and activity are associated with the shape of an individuals' social environment and contexts, including their social network position [46,47]. The brain implicitly tracks other people's social network positions and characteristics [49–51]. In one study, participants saw photographs of members of their student organization while brain activity was measured [50]. Activity in the brain's mentalizing (DMPFC, PC, TPJ) and value (VMPFC, VS, amygdala) systems scaled with target popularity, such that there was increased activation in both systems when participants saw photographs of popular peers [50]. Further, socially successful individuals showed stronger links between activity in the valuation system and others' social network positions, and an increased awareness of their own network position [50]. This finding suggests that social motivations, as reflected in the brain's mentalizing system, guide input to the value system that puts various decisions on a common scale (i.e., value of engaging with popular individuals), and that successful influencers may have heightened engagement of such systems. These findings further highlight the value of incorporating

neuroimaging techniques and social network analysis to advance the study of communication, persuasion, and social influence. Additional research exploring relationships between social networks and brain responses during idea exposure and sharing is a promising avenue to further elucidate the psychological underpinnings of successful persuasion and influence [48].

Conclusions

Findings highlight the role of value-based decision making in driving people's decisions to share information, with self- and socially-focused considerations as key inputs when computing the neural value of sharing. Further, social considerations are particularly important in distinguishing whether individuals will be successful in obtaining desired consequences from sharing. Recent developments in neuroscience and computational social sciences have begun to investigate how the brain interacts with outside social networks to represent and form human behavior [46,47,49]. In parallel, scholars have begun to explore how interactions between personality traits and social network positions may lead to career success [41]. Leveraging developments across neuroscience, network sciences, and social sciences is promising to advancing knowledge of what makes a successful persuader. In parallel, to the extent that successful persuaders are marked by higher social awareness and ability to adapt strategies in response to changing contexts, testing strategies to encourage higher levels of social awareness and strategic use of mentalizing in less successful individuals may also be fruitful.

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