Sense of Acceptance: Key Factor of Social Learning

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Abstract

In addition to individual learning abilities, the social learning abilities of modern humans likely played a key role in the replacement of Neanderthals by modern humans. In terms of social learning, acceptance from skilled members might facilitate the promotion of social learning processes. Accordingly, a sense of acceptance is one of major functions of social abilities underlying social learning. Thus, a sense of acceptance should be investigated for clarifying neural mechanisms underlying social learning. We propose two viewpoints for investigating the neural correlates underlying the sense of acceptance. Because a sense of acceptance promotes social behaviors, including social learning, through emotional changes, the neural correlates underlying the link between a sense of acceptance and the enhancement of social behavior and between a sense of acceptance and psychological effects should be explored.

Keywords

Sense of acceptance • Social learning

25.1 Introduction

Cognitive and behavioral capabilities of modern humans, such as creativity, likely played a key role in the demise of Neanderthals. Both individual and social learning contribute to this creativity. For instance, in regards to individual learning, humans acquire new skills through trial and error processes; thus, this learning ability facilitates the invention of new skills and technologies. In social learning, on the other hand, humans acquire new skills by observing (Bandura 1965) and imitating (Field and Walden 1982) the behaviors of others. Social learning ability thus promotes the spread of the new skills and technologies invented by individual learning.

Modern humans have enhanced social abilities compared with other animal species (Dunbar 1998); indeed, the capacity for social learning is one of the major characteristics of modern humans. There are four necessary conditions of social learning processes: paying attention to a target, the retention and reproduction of a target's behavior, and motivation for imitation (Badura 1977). Acceptance from others, i.e., approval, enhances the motivation to imitate behaviors (Badura 1977). Thus, sensing acceptance from others might facilitate processes of social learning. Because they can perceive a sense of acceptance, modern humans might tend to spread new skills in comparison to Neanderthals. In this sense, the spread of new skills, motivated by sense of acceptance, could play a key role in the replacement of Neanderthals by modern humans.

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Recent advances of neuroimaging techniques, such as functional magnetic resonance imaging (fMRI), have revealed the neural correlates underlying a wide range of social abilities, including a sense of acceptance. In this paper, we will review research related to the sense of acceptance, including the modulation of brain activation. Finally, we will introduce our future experimental plan.

25.2 Sense of Acceptance

Sociometer theory has suggested that social acceptance from other people enhances self-esteem (Leary et al. 1995), and furthermore, self-esteem is a consequence of the degree to which people receive acceptance from other people. As proposed in person-centered therapy, a sense of acceptance can influence social behaviors through psychological contact (Rogers 1957). Congruence, unconditional positive regard, and an empathic attitude of the therapist are the most important factors in person-centered therapy. Within successful therapy, the client has changed his/her way of thinking. This change in thinking promotes new social behaviors. Thus, perceiving a sense of acceptance contributes to new social behaviors through changes in mindset.

Functional MRI studies have shown that acceptance (praise) from others activates the striatum, which is part of the reward system (Izuma et al. 2008). On the other hand, rejection from others shows activation in the dorsal anterior cingulate cortex (ACC), part of the pain matrix (Eisenberger et al. 2003), and is accompanied by a self-esteem decrease (Eisenberger et al. 2011a). Interestingly, social support has been shown to decrease psychological pain-related activation in the ACC during social exclusion (Onoda et al. 2009). Thus, social acceptance from others modulates brain activation in two ways: enhancement for reward-related activation and attenuation for pain-related activation.

Humans can also perceive a sense of acceptance even without the explicit words of others (Rogers 1957), which likely stems from their nonverbal attitude. Perceived social support can come in the form of interpersonal touch (Coan et al. 2006). For instance, hand-holding with a spouse or stranger decreases the neural response to pain threat in the right anterior insula, superior frontal gyrus, and hypothalamus, including the affective pain matrix (Coan et al. 2006). In addition, a photo of romantic partner also decreases pain-related responses (Eisenberger et al. 2011b). Therefore, a sense of acceptance stemming from the nonverbal and verbal behaviors of others can modulate emotion-related responses during social behaviors.

25.3 Suggested Experiment for the Sense of Acceptance and Social Learning

25.3.1 Missing Link Between Social Behavior and Sense of Acceptance

Despite the progress in research on the sense of acceptance, there are still issues that need to be resolved. First, as mentioned in the introduction, a sense of acceptance enhances social behavior. However, the neural correlates underlying the link between the sense of acceptance and the enhancement of social behavior is unresolved. Second, the motives for social behavior mainly consist of psychological factors; i.e., the enhancement of social behavior might be caused by emotional changes elicited by a sense of acceptance. Thus, the link between negative feelings stemming from psychological factors and a sense of acceptance warrants further investigation (Fig. 25.1).

25.3.2 Example of Experimental Design

In this article, we suggest a potential experimental design regarding the link between negative feelings stemming from psychological factors and a sense of acceptance. In this type of experiment, empathic pain, the negative feeling aroused by seeing others in pain (Singer et al. 2004), can be treated as psychological pain. Other conditions in the

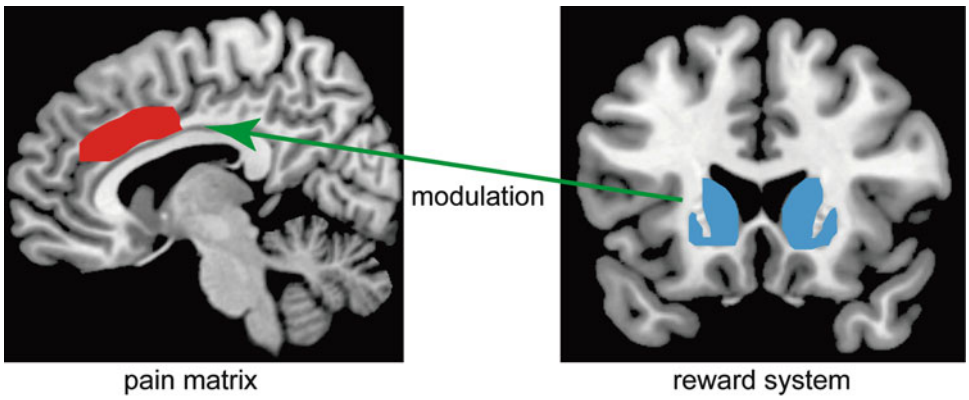

Fig. 25.1 Time chart example of visual stimuli presentation. In the stimulus presentation, two types of stimuli (painful and no painful) are presented

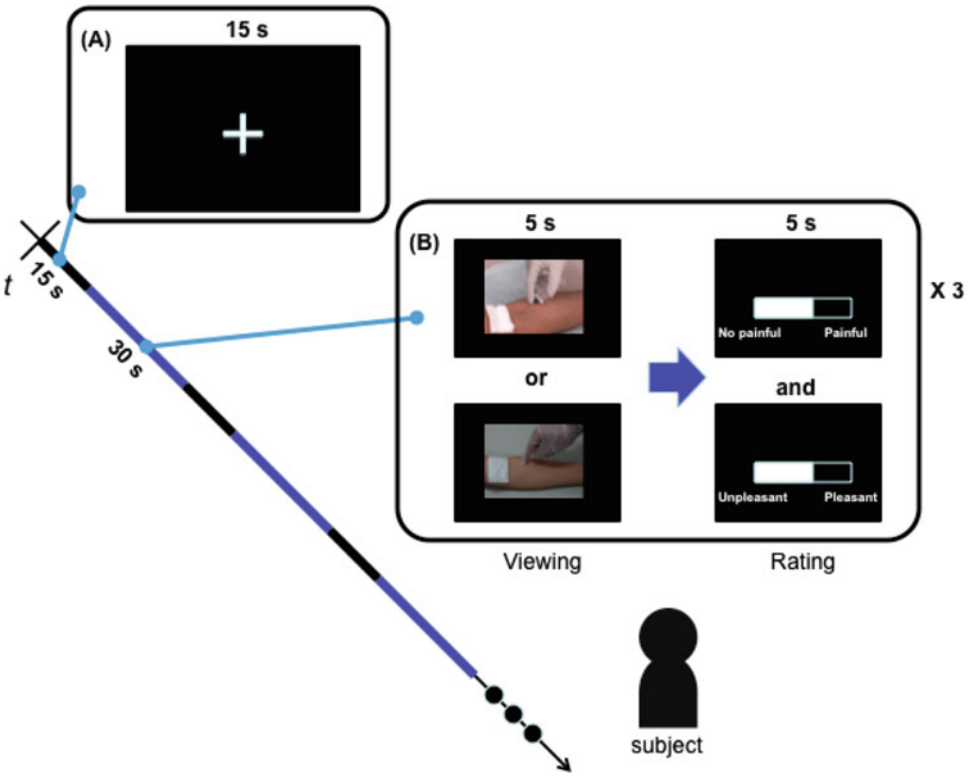

Fig. 25.2 Potential neural correlates underlying sense of acceptance

experiment include supportive words or hand holding as a sense of acceptance. For this experiment, each subject observes painful or non-painful visual stimuli throughout the session. They then evaluate the stimuli while the left hand of a familiar person is placed on their hand (human hand condition). Alternatively, the control condition is when a non-human (e.g., rubber) hand or no hand (non-hand condition) is used.

As hand holding is a gesture that imparts a sense of acceptance, we anticipate that hand holding will be perceived as reward. Thus, we expect that activation of the reward circuit, including ventral striatum, will be enhanced by hand holding. Furthermore, reward system activation is expected to modulate pain-related activation aroused by painful stimuli (Fig. 25.2).

25.4 Conclusion

In this paper, we have indicated the importance of a sense of acceptance for promoting social learning. The sense of acceptance has been investigated in wide range of studies including its underlying neural mechanisms in regards to social behavior or psychological factor effects. However, there is a missing link at the mechanistic level among social behavior, psychological factors, and sense of acceptance. Our proposed experiment may help clarify the neural mechanisms underlying social learning.

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