

An Extension of Somatic Marker Hypothesis to Moral Decision-Making

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Introduction

Emotion and decision-making

In recent years, **the process of the brain system underlying a behavioral choice** is revealed, and then two things become clear.

- ① Decision-making is strongly **influenced by implicit process**.
- ② The emotion that is sometimes regarded as irrational is in fact **essential to rational decision-making**.

In this presentation

- ① I explain the role of emotion based on **the somatic marker hypothesis proposed by A. R. Damasio**, according to which emotion is an essential factor in **any** decision-making.
- ② I point out a problem that we will encounter when extending the “somatic marker” framework to **moral decision-making**.



Results of the Iowa Gambling Task

The **normal participants** generate somatic responses when they try to take a card from bad decks but do not yet take it.



But the **patients with damage to the ventromedial prefrontal cortex** do not generate somatic responses and thus take a card from bad decks.

- ① In the case of the patients, **the prospect of being “disadvantageous in the future” does not play a role in controlled immediate choice**.
- ② “Damage to ventromedial cortices acts by precluding access to a particular kind of record of previous and related individual experience.”
The information of the somatic state plays a role of “cautionary signal”.

Can we extend the “somatic marker” framework to moral decision-making?

Trolley Dilemma



Situation (1)

A trolley is hurtling down a track toward 5 people. You can divert it onto a separate track. But on this track, there is a single man. Should you flip the switch?

Situation (2)

In the same situation, you can stop the trolley by pushing a single large man from a bridge over a track. In that case, the man would be killed, but the others would be saved. Should you push the single man to save the others?

⇒ There are **two incompatible norms**. One is “to save someone’s life”, and the other is “not to kill anyone”. Are these reactive tendencies, which respond to each situation, universal or culturally relative?

We must consider the cultural dependency of emotion, particularly, in the case of moral decision. This is because the same somatic state may represent different contents or directions of bias.

Emotion: The important factor of decision-making

The somatic marker hypothesis emphasizes the importance of **emotion** in decision-making.

(1) A plane or a car, which one is safer as a means of transportation?

According to a rational calculation of risk, a plane is safer than a car. **But**, people choose a car and fear flying more than driving, **even if they know the above calculating result!**



(2) The tendencies in market

Individuals tend to be “**risk averse**” or “**risk seeking**”, depending on whether the prospect is a sure gain or a sure loss.

⇒ A. R. Damasio claims that daily behavioral tendencies can be explained if we focus on **the biasing effect of pre-existing emotions**, according to which decision-making is modulated by pre-existing somatic states.

Decision-making= ①ability of rational inference
+
②acquisition of appropriate information
+
③**emotion**

Claims of the “somatic-marker hypothesis”

- (1) Whenever we make a decision, “emotion” plays a biasing role.
- (2) The components of “emotion” are the information of development of somatic states induced by stimuli.

But, are all moral norms really culturally dependent?

Evolutionary ethicists say —

Some moral norms are **products of natural selection** and have authority over historically or culturally constructed values.



Prinz says —

Culture shapes all norms. ... We can draw no inference from the existence of an evolved norm to either its falsity or its truth.

Further Prinz says —

“Natural selection has probably furnished us with a variety of behavioral and affective dispositions that contribute to the emergence of moral values”. The evidence for having “ought-thought” in non-human primates is still weak, and “morality may be a uniquely human capacity”.

I accept Prinz’s opinion, because I think that an innate neural circuit for a moral sense does not exist.

Conclusion

① The extension of the “somatic marker” framework to moral decision is not easy, because it is difficult to **discriminate between physiological parameters corresponding to the contents of emotions**. The content of emotion is determined by past experiences of behavior in similar situations.

② **The purposes people try to achieve in given situations differ depending on their cultural situations in which they have grown up**. The “meaning” of the changes of their bodily states is not uniform in mankind.

③ The extension of the “somatic marker” framework to moral decision needs to keep in close contact with **sociopsychological studies**.



References

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