

論文 / 著書情報
Article / Book Information

題目(和文)	
Title(English)	Beyond Smiles: Cooperativeness as the Key Determinant of Cooperative Behavior
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出典(和文)	学位:博士(理学), 学位授与機関:東京科学大学, 報告番号:甲第253号, 授与年月日:2025年3月26日, 学位の種別:課程博士, 審査員:三宅 美博,山村 雅幸,小野 功,瀧ノ上 正浩,吉村 奈津江
Citation(English)	Degree:Doctor (Science), Conferring organization: Institute of Science Tokyo, Report number:甲第253号, Conferred date:2025/3/26, Degree Type:Course doctor, Examiner:,,,,
学位種別(和文)	博士論文
Category(English)	Doctoral Thesis
種別(和文)	論文要旨
Type(English)	Summary

論文要旨

THESIS SUMMARY

系・コース： Department of, Graduate major in	知能情報 コース	系	申請学位 (専攻分野)：博士 Academic Degree Requested Doctor of	(理学)
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要旨 (英文 800 語程度)

Thesis Summary (approx.800 English Words)

This study explored the role of Duchenne smiles in promoting cooperative behavior, aiming to fill the gap in the existing research by considering the influence of cooperativeness, a key personality trait. While previous studies have shown that smiles can facilitate cooperation, the mechanisms behind this effect are not fully understood. By using a multifaceted approach that combines behavioral and neurophysiological analyses, this research clarifies how nonverbal cues, particularly Duchenne smiles and smile synchrony, interact with cooperativeness to influence cooperative outcomes in social contexts. This study contributes to understanding how these factors work together to promote cooperation. Chapter 1 introduces the topic of cooperation and establishes the theoretical background for this study. The central research question explores how cooperativeness and nonverbal cues, particularly Duchenne smiles (genuine smiles that involve both the mouth and eyes, signaling true happiness and trust), contribute to cooperative behavior. This chapter reviews the role of facial expressions, especially smiles, in promoting prosocial behavior based on prior literature. It emphasizes the need to explore the causal relationships between these factors and introduces the study's methodology, which integrates behavioral measures with neurophysiological techniques to provide a deeper understanding of cooperation. This sets the stage for the following chapters, which aim to explore how cooperativeness and Duchenne smiles affect cooperative behavior in social contexts, particularly focusing on understanding the causal mechanisms and predictive relationships that drive these interactions. Chapter 2 examines the relationship between cooperativeness, Duchenne smiles, and cooperative behavior at both individual and dyadic levels. Ninety participants were randomly paired into dyads, filmed during a ten-minute unstructured conversation, and then played a prisoner's dilemma game to assess cooperative behavior. Smiles were categorized as Duchenne or non-Duchenne, and cooperativeness was measured through an anonymous pre-conversation prisoner's dilemma game. Linear regression analyses revealed a positive correlation between Duchenne smiles and individual cooperative behavior, consistent with prior studies. However, mediation analyses showed that Duchenne smiles and smile synchrony did not mediate the relationship between cooperativeness and cooperation. These results suggest that human cooperative behavior is primarily influenced by cooperativeness, rather than smiles and its synchrony. Chapter 3 builds on the findings from Chapter 2 by incorporating gaze while smiling and inter-brain synchrony (IBS) as additional factors that may influence cooperation. A pretest-posttest design was employed to investigate whether Duchenne smiles combined with gaze and IBS during conversation mediated the relationship between cooperativeness and cooperative behavior. The study hypothesized that Duchenne smiles with gaze would mediate the effect of cooperativeness on cooperative behavior, with IBS in the left prefrontal region expected to influence cooperative behavior. However, the results indicated that cooperativeness significantly predicted both Duchenne smiles with gaze and cooperative behavior, but Duchenne smiles with gaze did not mediate the relationship between cooperativeness and cooperative behavior. Additionally, IBS during the conversation did not predict subsequent cooperative behavior. These findings suggest that dispositional factors, such as cooperativeness, play a more significant role than nonverbal cues or neural synchrony in shaping cooperative behavior in naturalistic, unstructured communication settings. Chapter 4, the general discussion, summarizes the study's key findings, reinforcing that
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cooperativeness is the central driver of cooperative behavior. Duchenne smiles and IBS, while contributing to the process, did not act as direct mediators. The discussion connects these findings to theories of one-shot cooperation and animal signal theory, suggesting that contextual and cultural factors would shape the role of nonverbal cues in cooperation. The limitations of the study, such as the lack of sample diversity, experimental constraints, and challenges in interpreting neural data, are addressed. The chapter emphasizes the need for future research that explores the integration of other nonverbal behaviors, such as body language or gestures, and examines how dynamic social contexts, such as team-based tasks or decision-making scenarios, influence cooperation.

Chapter 5 presents the conclusions and future works. The study concludes that cooperativeness is a key determinant of cooperative behavior, with Duchenne smiles and IBS playing more nuanced, supporting roles rather than acting as direct mediators. These findings suggest that cooperative behavior is more strongly influenced by dispositional traits, such as cooperativeness, than by momentary nonverbal cues. For future research, the study recommends broadening the sample to include participants from diverse cultural backgrounds to improve the generalizability of the findings. The use of multi-channel fNIRS or other neuroimaging techniques could offer a more comprehensive understanding of the neural correlates of cooperation. Additionally, future studies should explore a wider range of nonverbal behaviors and incorporate real-world cooperative tasks to provide a more nuanced understanding of how cooperation functions in dynamic and complex social contexts. Finally, the study highlights the importance of fostering cooperativeness in social settings to enhance collaboration and improve cooperative outcomes.

In conclusion, this research contributes to the understanding of how personality traits like cooperativeness and nonverbal cues such as Duchenne smiles influence cooperative behavior. By investigating the interplay between these factors, the study provides valuable insights into the mechanisms driving cooperation. The findings suggest that cooperativeness plays a central role in shaping cooperative behavior, while nonverbal cues like Duchenne smiles and neural synchrony act as complementary influences. The study offers a foundation for future research that could further investigate the role of other nonverbal behaviors, expand the diversity of the sample, and incorporate more dynamic social contexts to provide a more comprehensive understanding of cooperation in various social environments.

備考：論文要旨は、和文 2000 字と英文 300 語を 1 部ずつ提出するか、もしくは英文 800 語を 1 部提出してください。

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