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論文題目	Social Practices and E-waste: Challenging Individualized Interventions (社会慣習と電子廃棄物：個別介入への挑戦)		
Summary (論文内容の要旨) This doctoral dissertation investigates how to design efficient interventions to foster pro-environmental behaviors in waste electrical and electronic equipment (WEEE or e-waste) contexts. Despite extensive research and multiple interventions, global e-waste recycling rates have stagnated at approximately 20% since 2010, indicating that current approaches inadequately address this wicked problem. The thesis argues that causal frameworks such as the Theory of Planned Behavior are insufficient for addressing the systemic complexity of e-waste, and instead adopts Social Practice Theory (SPT), specifically its Elemental Approach, as the guiding theoretical framework. The research employs a mixed-methods approach comprising two interconnected components. First, a comprehensive systematic review analyzed 7,610 research articles (1973-2023) using bibliometric analysis, keyword clustering, and thematic analysis to map the structure and evolution of the e-waste research landscape. Second, an empirical case study investigated the constellation of mobile phone practices through an online survey (139 responses), two focus groups (including e-waste specialists), and 27 semi-structured interviews. Chapter 1: The Introduction establishes the research context by organizing the motivating thesis rationale into its core elements of environment, behavior, and intervention design. It identifies e-waste as a wicked problem and introduces SPT as an alternative to causal frameworks, selecting mobile phones as the case study due to their widespread adoption, accessibility, and short lifespans. Chapter 2: The Literature Review provides a comprehensive systematic analysis revealing that e-waste research is organized around four main themes: environmental and human health impacts, e-waste management systems, innovations to avoid e-waste, and recovery of metals from e-waste. The study identifies significant research gaps, particularly insufficient cross-thematic integration and Western-centric orientation of existing theoretical frameworks. Chapter 3: Critical Perspectives demonstrates that pro-environmental behavior is fundamentally intertwined with human interests and values, being more accurately conceptualized as pro-human behavior. Technology-based solutions (e.g., smart systems) are shown to paradoxically contribute to rather than solve common e-waste problems. A rigorous mathematical model of the Electrical and Electronic Equipment (EEE) system illustrates that maximizing recycling efficiency alone does not guarantee environmental protection.			

Chapter 4: The Case Study applies SPT to identify and characterize five mobile phone practices: using, repairing, upgrading, storing, and recycling. Key findings reveal that it is practice elements (materials, competences, meanings) and not individual motivations that serve as primary determinants of practice performance. The study demonstrates a strong correlation between perceived normality (everyone does it) and practice adoption ($r = 0.968$), while showing no direct relationship between responsibility attribution (for recycling) and recruitment rates (practice adoption).

Chapter 5: The Discussion and Conclusion synthesize findings to theorize mobile phone use as a dominant project within the EEE practice constellation, sustained by logics of value maximization. The thesis concludes that individualized behavioral interventions cannot adequately address current e-waste challenges, emphasizing instead the need for societal-level intervention designs that account for the interconnected nature of practice constellations and the complexity of the EEE system.

Results of Thesis Review (論文審査の結果の要旨)

(1) Research Significance and Novelty

This research addresses a significant gap in e-waste scholarship by introducing Social Practice Theory as an alternative analytical framework to dominant causal approaches such as the Theory of Planned Behavior. The novelty lies in applying the Elemental Approach of SPT to WEEE-related behaviors, an approach largely unexplored in environmental research on electronic waste. By grounding the research in both a comprehensive systematic review of 7,610 articles and empirical fieldwork involving surveys, focus groups, and semi-structured interviews, the study bridges the theoretical and practical dimensions of intervention design. The development of rigorous quantitative indicators to operationalize SPT concepts in real-world scenarios represents a new methodological contribution to the field of e-waste research.

(2) Contributions to the Field

The thesis makes several significant contributions: (a) illuminating the limitations of individualized behavioral interventions for addressing e-waste challenges by demonstrating that practice elements and not individual intentions shape practice performance; (b) providing a comprehensive mapping of the e-waste research landscape across four thematic clusters while identifying critical gaps in cross-thematic integration; (c) constructing a mathematical model of the Electrical and Electronic Equipment (EEE) system that demonstrates why maximizing recycling efficiency alone cannot guarantee environmental protection; (d) theorizing mobile phone use as a dominant project within the EEE practice constellation, revealing how value maximization narratives sustain current consumption patterns; (e) developing operational tools for SPT research, including coherence metrics and trajectory indicators, were validated against empirical observations.

(3) Practical Applications and Implications

The research has practical value for environmental educators, policymakers, and stakeholders seeking alternatives to individualized interventions for e-waste management. Key implications include: designing interventions that engage all relevant stakeholders rather than focusing solely on citizens; considering the interconnected nature of practice constellations when targeting specific behaviors; recognizing that element provision serves as a non-functional requirement for practice engagement; accounting for product-specific nuances when tailoring interventions; and understanding that digital solutions may paradoxically intensify the problems they aim to address. The study demonstrates how the persistent intention-behavior gap may reflect systematic misalignment between policy design and practice realities rather than citizen failure.

Concluding Remarks

This thesis makes valuable contributions to scholarly understanding how Social Practice Theory can inform interventions addressing the complex challenges of e-waste in contemporary society. By theorizing the EEE system as a practice constellation and demonstrating the limitations of individualized approaches, the study provides both theoretical foundations and practical orientations for reimagining e-waste management beyond its current constraints rooted in causal frameworks.

よって本論文は博士（地球環境学）の学位論文として価値あるものと認める。また、令和8年2月5日、論文内容とそれに関連した事項について試問を行った結果、合格と認めた。

なお、本論文は、京都大学学位規程第14条第2項に該当するものと判断し、公表に際しては、（当面の間）当該論文の全文に代えてその内容を要約したものとすることを認める。

要旨公開可能日： 年 月 日以降