



*Experimental studies on the psychology of property rights*

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## Summary

Property rights determine who owns what. Trade is very difficult if it is unclear who owns what or if property rights are not enforced. For this reason scholars argue that property rights and their enforcement are essential to economic prosperity. A distinction can be made between a legal and psychological approach to property rights. A legal approach to property rights considers how the rules of property rights are codified in law while a psychological approach focuses on how humans tend to think about property rights intuitively.

The two approaches seem to diverge if more unconventional goods are considered. These goods are defined in this thesis as being intangible or non-rivalrous. A nonrivalrous good means that the good can be used by more than one person at the same time. Information goods, such as music and texts, are examples of nonrivalrous goods. This thesis consists of four studies that investigate how consumers perceive unconventional goods in different contexts. The aim of these four studies combined is to gain a better understanding of consumers' perception of property rights, which not only furthers relevant theories but also provides practical recommendations to policy-makers and managers.

Chapter 2 and 3 focus on consumers' perception of digital piracy. Digital piracy, or simply piracy, is defined as the unauthorized use or sale of copyrighted content. With the rise and expansion of the internet, it became very easy to commit piracy. In most countries piracy is a punishable offence because it deprives copyright holders of potential revenue and, for this reason, it is often equated with theft. However, previous studies strongly suggest that consumers have a lenient attitude towards piracy while theft is universally morally abhorred.

Chapter 2 investigates to what extent a moral distinction exists between theft and piracy, and what might explain this distinction. We argue that extending the theory of loss aversion provides a novel explanation to why consumers have a different attitude towards piracy and, as a result, are more likely to commit piracy than theft. Loss aversion is the tendency to give more weight to losses than to gains in decision-making. Accordingly, losing one dollar has more impact on one's happiness than finding one dollar. Traditionally, the study of loss aversion focuses primarily on the impact decisions have on the decision-makers themselves. We extend loss aversion to include second-persons. These are persons who are directly affected as a result of the choices these decision-makers make. For example, stealing a dollar implies someone else, the second-person, is losing a dollar. In the case of piracy, however, the loss caused to the victim consists of foregone gains, which is more abstract than immediately experienced losses. Chapter 2 presents four experiments that together provide evidence in support of this theory.

Chapter 3 builds on the findings of Chapter 2 and consists of two incentivized economic experiments. Participants in these experiments could either steal or pirate from other participants, which had real monetary consequences for the participants involved. In the second experiment we also manipulated the price at which the good can be bought legally to make the option of stealing or pirating more or

less attractive. The findings of both experiments show that consumers are more likely to pirate than to steal, which is in line with the findings of Chapter 2. We also find that higher prices increase the attractiveness of piracy more than it does for theft. Together, the findings of Chapter 2 and Chapter 3 strongly suggest that the moral distinction between theft and piracy is psychological and, thus, difficult to undo. This also explains why the widespread use of public service announcements to fight piracy has been ineffective.

Chapter 4 presents a study on how framing possessions can affect decision-making. Theoretically, there are two ways to steal value: (1) taking away possessions or (2) diluting the value of these possessions. Although taking and diluting results in the same economic outcome, earlier studies suggest that consumers are more sensitive to taking than to dilution. We show in an incentivized economic experiment that participants behave more selfishly if they can appropriate value through dilution. The observed effect is called the dilution illusion because diluting someone gives the illusion that the other person is not disadvantaged. The findings suggest that the dilution illusion is a psychological bias and, thus, not the result of deliberate considerations. We argue that the dilution illusion results from our intuitive perceptions of property rights, which tend to be based on how possessions are divided nominally.

Chapter 5 considers to what extent the introduction of property rights in queues affect decision-making. Queues are well known to be an inefficient allocation mechanism. Unfortunately, in many contexts queues are inevitable due to practical, ethical or legal reasons. Chapter 5 investigates the possibility to allow consumers waiting in a queue to trade places. Theoretically, trading places is expected to improve queue efficiency, which results in a better customer waiting experience overall. In a laboratory experiment two auction mechanisms are compared: (1) the server-initiated auction mechanism and (2) the customer-initiated auction mechanism. In both mechanisms consumers are always compensated if they move backwards in the queue. The main difference between two auction mechanisms is that in the customer-initiated auction mechanism consumers have the right to refuse to trade places. The experimental findings show that both mechanisms are equally effective in making queues more efficient. However, biases associated with property ownership are more pronounced in the customer-initiated auction than in the server-initiated auction. We argue that trading places in queues is a promising yet unexplored context to study perceptions of property rights. Practically, providing the ability to trade places in queues or waiting lists can improve the waiting experience considerably for all parties involved. To this end, we recommend managers to consider implementing solutions that would facilitate exchange in a queue or waiting list.