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Chapter 1

Introduction

In the last two decades, emotions have become a major area of scientific study in psychology with, by now, a coherent body of theory and data. It appears that emotions play an important role in many psychological processes, for example in learning, attention, and memory (Izard et al., 1984). Recent neuroscientific research even suggests that emotions are essential for rational decision-making (Damasio, 1994; Picard, 1997). Although emotions and feelings are often considered as the most idiosyncratic part of human psychology, Frijda (1988) argues that simple, universal forces (emotion laws) operate behind the complex movements of feelings.

Given the upsurge of interest and progress in emotion research in psychology, it is surprising that contemporary economists pay so little attention to emotions. Not only do emotions shape our preferences (almost all human satisfaction comes in the form of emotional experiences), they also have the power to affect the process of rational decision-making itself (Elster, 1996, 1998). Classical economists, most notably Adam Smith and Jeremy Bentham, were much more aware of the importance of emotions for well-being and economic behavior than their contemporaries. For example, in his book *The Theory of Moral Sentiments*, Smith (1790) warns for the danger of seriously overrating certain situations as a result of one's emotions:

The great source of both the misery and disorders of human life, seems to arise from over-rating the difference between one permanent situation and another. Avarice over-rates the difference between poverty and riches: ambition, that between a private and a public station: vain-glory, that between obscurity and extensive reputation. The person under the influence of any of those extravagant passions, is not only miserable in his actual situation, but is often disposed to disturb the peace of society, in order to arrive at that which he so foolishly admires (p. 149).

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According to Loewenstein (2000) contemporary economists have left emotions out of their analyses because their influence is perceived as either transient or too unpredictable and complex to be amenable to formal modeling. Elster (1998, p.47) hypothesizes that the neglect of emotions in economics may have to do with the different explananda of psychology and economics: "Whereas economists mainly try to explain behavior, emotion theorists try to explain emotions. By and large, psychological studies of the emotions have not focused on how emotions generate behavior".

Recently there appears to be some growing interest in the role of emotions on economic decision-making.¹ Frank (1988) and Hirshleifer (1987) argue that emotions can be advantageous when dealing with commitment problems. Threats and promises can be credible if they are made by an (emotional) agent who is willing to disregard material self-interest in order to punish or reward others. For example, Frank shows that in a prisoner's dilemma game players endowed with the emotion guilt can sustain the cooperative (efficient) outcome.² In his view emotions can be seen as additional arguments in the utility function, reflecting some psychological benefit and cost:

The rationalists speak of tastes, not emotions, but for analytical purposes the two play exactly parallel roles. Thus, for example, a person who is motivated to avoid the emotion of guilt may be equivalently described as someone with a "taste" for honest behavior (Frank, 1988, p. 15).

Loewenstein (1996, 2000) argues that by treating emotions as part of the utility function important features are neglected. In particular, when the intensity of an emotion is high, it may progressively seize command over behavior. In other words, emotions influence people's immediate behavior more than they think is normatively justified. In addition, Loewenstein argues that people typically tend to underestimate the impact of future emotional factors on their own behavior and on the behavior of others (the so-called "hot-cold empathy gap").

¹ For reviews on the psychology of emotion and its relation with economics, see Elster (1998) and Pieters & van Raaij (1988).

² Frank (1988) assumes that people give signals about their emotional commitments or dispositions (for example, via facial expression or the pitch of the voice) that are difficult to simulate. In his prisoner's dilemma model these signals are somewhat perturbed and players only know the probability of cooperation by another player.

The goal of this thesis is to investigate how emotions generate behavior in a series of laboratory experiments. Emotion theory and self-reports of experienced emotion are used as instruments. In each experiment, participants play a game that models in a simple, abstract, but fundamental way an important economic decision problem. Taxation, bargaining, investment, and bidding in auctions are the type of decision problems covered by this thesis. Because in each experiment participants are paid according to their own decisions and, on average, earn their opportunity cost of time, each experiment constitutes a real economic situation.³

Given the potential relevance of emotions for economics (as suggested by the psychological literature), why study them in a laboratory and not in the field? A first reason is that in a laboratory the experimenter can carefully control the environment. Because emotions are complex and, theoretically, may affect thought and behavior in different, presumably delicate, ways, it makes sense to start investigating their economic significance in very clean and controlled environments. For example, in a private value auction experiment one can investigate the relation between an emotional variable and bidding behavior easier than in the field because the private value of each bidder, the number of bidders, and the bidders' information are under control of the experimenter. In addition, one can control for strategic considerations by, for example, using computerized rivals who are known to bid according to a fixed bidding strategy. A second reason for doing experiments concerns the measurement of emotion. In the field, there are simply no reliable data on experienced emotions available. In a laboratory, we can in principle measure emotions at any stage of a decision-making process, given the limits of the particular measurement instrument used.

Outline of this thesis

Chapter 2 gives a short review of relevant psychological literature. First, the question 'What are emotions?' is addressed. Subsequently, some important aspects of emotions are discussed. Finally, it is discussed how emotions can be measured and why self-reports have been chosen as a measurement instrument in this thesis.

³ For an introduction into the methodology of experimental economics, see Davis & Holt (1993), Friedman & Sunder (1994), or Kagel & Roth (1995).

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Chapter 3 discusses three experiments based on the so-called power-to-take game. This two-player game captures important aspects of taxation, principal-agents relationships, and monopoly pricing. In the first experiment, each participant must first earn her or his endowment by doing a real effort task before the power-to-take game is played. In the second experiment, the endowment is simply given to participants as 'manna from heaven'. In the last experiment, groups instead of individuals play the power-to-take game. An important feature of this experiment is that transcripts of group discussions are analyzed.

Chapter 4 deals with two experiments on the relation between emotions and risk taking. In the first experiment, it is investigated how emotions influence investment behavior when there is global risk – i.e. risk independent of an agent's investment decision (like political risk). In the second experiment, it is investigated how emotions, generated by a random economic shock, affect bidding behavior in a first-price sealed bid auction.

Chapter 5 investigates in the context of a bargaining experiment whether emotions and their behavioral effects are robust with respect to time. In other words, does it matter when bargainers have the possibility to cool off before they make a decision?

Chapter 6 evaluates the results of the experiments. First, a short summary of chapter 1-5 is given. Second, the experimental results are evaluated. In particular, the question is addressed which set of ingredients would provide a better account of the role of emotions in economic behavior. Finally, some suggestions for future (experimental) research are given.