

**Social Value Orientation and Anticipated Emotions in  
Resource Allocation Decisions**

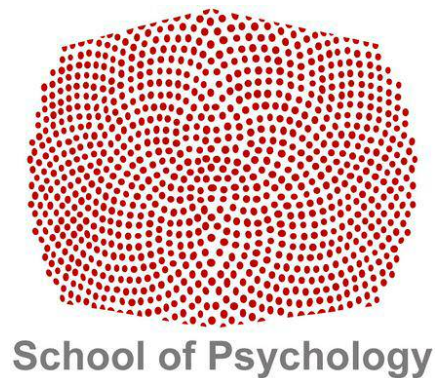
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A thesis submitted for the degree of Doctor of Philosophy

School of Psychology, Cardiff University

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## Summary of the Thesis

The aim of the research reported in this thesis was to enhance our understanding of why individuals differ in their so-called social value orientation (SVO), i.e., their preferences for allocating resources equally or unequally between themselves and another person. By comparison with ‘proself’ individuals, ‘prosocials’ prefer to allocate resources equally. This has been linked to their greater sympathy with or empathy for other people. In the current research I propose that the anticipation of cooperative or competitive emotions may underlie these different preferences. To measure anticipated emotions about allocating resources fairly or unfairly, I developed a reliable and valid measure, as reported in Chapter 2. This measure was used to investigate whether anticipated emotions mediate the relation between SVO and allocation behaviour. I found that anticipated emotions did account (at least in part) for the relationship between SVO and allocation behaviour. This pattern of mediation was consistent in two cultural settings: Western European (UK, reported in Chapter 3) and Asian (Malaysia, reported in Chapter 4). I also examined whether participants’ allocation behaviour would differ as a function of whether the receiver was a member of the allocator’s ingroup or outgroup. Surprisingly, no such differences were found. Nevertheless, there was some evidence that individual differences in social dominance orientation are related to participants’ allocation behaviour, with anticipated emotion again mediating the relation. In Chapter 5, I experimentally manipulated anticipated emotion in an effort to show that this proposed mediator has a causal impact on allocation behaviour. Two experimental studies yielded evidence that manipulating anticipated emotion had a significant impact on allocation behaviour, and that the normally observed relation between SVO and allocation behaviour was eliminated by this manipulation. Overall, this thesis provides compelling evidence that anticipated emotion is a key psychological mechanism that helps to explain individual differences in allocation behaviour.

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## **1 Chapter 1: General Introduction**

### **1.1 Social Value Orientation in Decision Making**

Imagine you have a cookie and you have to divide the cookie between yourself and a random stranger. How would you divide this cookie? A cooperative or generous person would divide it equally or even give more to the stranger. An individualistic or selfish person would give the stranger less or perhaps retain the entire cookie for him/herself. This example illustrates the role that individual differences can play in decision making.

Individual differences in attitudes to being cooperative or individualistic in allocation behaviour are commonly referred to as social preferences, social motives, other-regarding preferences, welfare trade-off ratios, or social value orientation (SVO) (Murphy, Ackermann, & Handgraaf, 2011). Hereafter, I will use SVO to refer to individual differences in allocation preference. I will now introduce the construct of SVO and discuss its role in decision making, particularly in the context of resource allocation behaviour between oneself and another person.

### **1.2 Social Value Orientation (SVO)**

Early researchers investigating SVO argued that it reflects the motives underlying allocation behaviour in social dilemmas (Messick & McClintock, 1968). Messick and McClintock (1968) developed a measure that would reflect people's social motives. They created a decomposed game in which participants had to choose between different amounts of tokens allocated to oneself and to an anonymous other. From the participants' choices, the researchers were able to identify that individuals have different motivational orientations when it comes to allocating payoffs in economic games. The first motivational orientation is the individualistic approach, whereby the allocator seeks a higher amount of payoffs for him/herself and allocates little or nothing at all to the receiver (own gain). The second category of motivational orientation is one in which the allocator seeks to maximise both

their own payoff and the receiver's payoff (joint gain). The third motivational orientation is one in which the allocator aims to maximise the difference between his/her payoff and that of the receiver (relative gain). As research on SVO developed, individuals in these three motivational orientations came to be classified as individualists, prosocials, and competitors, respectively (Van Lange, De Bruin, Otten, & Joireman, 1997). However, because individualists and competitors tend to exhibit small differences in behaviour, they are commonly combined and labelled as proselfs (Balliet, Parks, & Joireman, 2009). Also, researchers have found that in the general population, there are only a few individuals who are categorised as competitors (Au & Kwong, 2004). More specifically, Au and Kwong (2004) reported that people were mostly categorised as prosocials (46%), followed by individualists (38%), with the remaining group of competitors (12%) being much smaller. Unlike proselfs, prosocials are co-operators by nature and seek equality or maximisation of joint outcomes (Van Lange, De Cremer, Van Dijk, & Van Vugt, 2007).

### **1.2.1 SVO as a Stable Personal Preference**

SVO has been defined as a stable preference for certain divisions between oneself and another person (Messick & McClintock, 1968). Given that there are differences in these personal preferences in resource allocation decisions, it seems reasonable to ask why this is the case. Through genetic architecture research on prosocial behaviour, researchers have argued that SVO can be linked to biological and environmental influences. Researchers found that in a population of twins aged 2 to 9 year olds from a non-western sample 55% of the variance in the children's prosocial behaviour was due to heritability (Hur & Rushton, 2007). In the same study, when researchers studied twins raised in a non-shared environment, whereby one twin is raised in a different family and environment from their other twin, 45% of the variance in the children's prosocial behaviour was influenced by non-shared environment factors (Hur & Rushton, 2007). These percentages presented here are based on a

non-western sample which are reportedly within the same range as twin studies done on a western population sample (Hur & Rushton, 2007). This suggests that prosocial behaviour of both non-western and western population is influenced by both genetics and environmental factors.

Although twin studies suggest that genetic influences are a greater influence than environmental factors in prosocial behaviour, the percentage of variance in twins' prosocial behaviour attributable to environmental factors is substantial and cannot be dismissed (Knafo & Israel, 2009; Plomin, 2001). Researchers have suggested that SVO is shaped by social interactions throughout life (Van Lange et al., 1997). Research findings suggest that children who have secure rather than insecure attachment with their primary caregiver during their childhood develop a sense of interdependence. This then leads to an increase in trust and cooperative behaviour that is linked to prosociality (Van Lange et al., 1997). Another finding is that prosociality increases with age (Knafo & Israel, 2009; Van Lange et al., 1997). Bogaert, Boone and Declerck (2008) suggested that older people are more prosocially orientated because they have achieved accomplishments and have fewer needs in life as compared to younger people. Thus, older people perhaps do not find the need to compete and therefore are more cooperative towards other people.

Van Lange and colleagues (1997) also found that prosocials reported having more siblings than did individualist and competitors. These authors argued that larger families will face many conflicts and may learn how to overcome this by having prosocial attitudes. This is also in line with research showing that individuals from cultures with high levels of collectivism, as compared to individualistic cultures, have a stronger tendency to behave in a prosocial manner (de Guzman, Do, & Kok, 2014; Rao & Stewart, 1999). Together, these results provide important insights into how SVO is shaped by genes and social environment.

### **1.2.2 SVO in Real Life Dilemmas**

Field studies have shown that SVO relates to behaviour in everyday social dilemmas. For example, in a study investigating commuting decisions, prosocials preferred to commute by public transport and were more concerned about the impact on the environment, as compared to proselfs (Van Vugt, Meertens, & Van Lange, 1995). The impact on the environment can be viewed as a type of collective outcome of the commuting decision made, suggesting that prosocials are more considerate and cooperative towards protecting or preserving the environment as compared to proselfs.

In another study, SVO was measured to examine its utility in predicting donation behaviour (Van Lange, Bekkers, Schuyt, & Van Vugt, 2007). Van Lange and colleagues (2007) asked participants to complete a questionnaire about their past and future donation behaviour, and found that prosocials were more involved than proselfs in different types of donation activities, such as buying lottery tickets for a good cause, donating used goods to charity shops, and buying goods from charity events or “third world shops”. Their participants were also asked to indicate to what kind of organisations they would make donations to. This revealed that prosocials support a wider range of good causes than proselfs. Van Lange and colleagues (2007) suggest that the various forms of prosocial behaviour can be explained by two underlying goals in that prosocials try not only to enhance other people’s outcome but also to enhance equality in the outcomes. For example, prosocials are more likely to make donations not only to help others (e.g., the poor and the ill) in need but also to reduce the difference in outcomes between themselves and others. These goals are mainly the ultimate difference between prosocials and proselfs.

### **1.2.3 The Role of Dispositions in Prosocial Behaviour**

There are different theoretical perspectives that could account for individual differences in prosocial behaviour, including the Big Two (Bakan, 1966), Schwartz’s model



of values (Schwartz & Huisman, 1995), and work on narcissism (Kohut, 1966). The Big Two distinguishes two ways of processing social information: the perspective of the self (agency) and the consideration of other (communion) (Bakan, 1966). Agency can be described as having individualistic, self-maximizing and dominance characteristics in pursuing goals (Abele & Wojciszke, 2007). Communion, on the other hand, describes a disposition that takes into account the well-being and interests of others in the process of goal attainment (Abele & Wojciszke, 2007). Research has shown that those high in communion act in a more prosocial manner, whereas those high in agency act in a more proself manner (Bakan, 1966; Gebauer, Sedikides, & Lüdtkke, 2014; Wiggins, 1991).

The Schwartz model of values (Schwartz & Huisman, 1995) integrates different types of values (e.g., power, achievement, benevolence) into a single model that consists of two dimensions. The dimension that is particularly relevant here is the self-transcendent versus self-enhancement dimension. The self-transcendent pole of this dimension comprises universalism and benevolence values which are related to consideration for the community, and this dimension has been shown to predict prosocial behaviour (Lönnqvist, Verkasalo, Wichardt, & Walkowitz, 2013). The self-enhancement pole of this dimension, on the other hand, comprises values that prioritise achievement and power, and is related to characteristics associated with proself motivations (Lönnqvist et al., 2013). These values have been found to have explanatory power on allocation behaviour in economic games (Chuah, 2010).

Turning to narcissism, prosociality is (negatively) correlated with this construct (Sakalaki & Sotiriou, 2012). Generally, narcissists are individuals who are self-absorbed and oblivious to the needs of others (Caligor, Levy, & Yeomans, 2015). Narcissists' opportunistic behaviour has also been found to be related to a higher level of creativity in order to achieve a desired goal (Liu, Chiang, Fehr, Xu, & Wang, 2017). For example, narcissists may act in a

cooperative way, in contrast to their more usual “competitive” behaviour, as a strategy to achieve a desired goal (Liu et al., 2017).

As noted above, there is evidence that the Big Two and certain values in Schwartz’s model are relevant to prosocial behaviour (Gebauer et al., 2014; Lönnqvist et al., 2013). Similar to SVO, they both describe dispositions that lead to more prosocial or more proself behaviour. The narcissistic personality type, on the other hand, is only relevant to greater proself behaviour. This makes narcissism a less relevant construct for the purposes of my research. Although I could have elected to use agency versus communion or self-transcendent versus self-enhancement values for my research, I chose to focus on individual differences in SVO because SVO is directly related to preferences for outcomes, whereas the Big Two and Schwartz’s model of values are more general models that describe a wider range of behavioural tendencies. Focusing on SVO would therefore strengthen the argument that anticipated emotions are a proximal predictor of allocation behaviour, without invoking more distal processes.

#### **1.2.4 SVO and Social Dilemmas**

Over time, researchers have used different social dilemmas to investigate the link between SVO and cooperation. Individual differences in SVO have commonly been demonstrated to affect behaviour in experimental social dilemmas like the prisoner’s dilemma, the public goods dilemma and the common goods dilemma (Balliet et al., 2009). Since prosocials tend to choose options that maximise the joint outcome of themselves and others, they cooperate more with one another than proselfs in a social dilemma. However, proselfs tend to choose outcomes that benefit themselves and thus are more attracted in not cooperating in a social dilemma. Balliet and colleagues (2009) proposed that the influence of SVO on behaviour in social dilemmas is moderated by several factors. One of these factors

that is relevant for the current topic is whether the social dilemma is a give-some or take-some dilemma which I discuss below.

Among the studies using the prisoner's dilemma, public goods dilemma and/or common goods dilemma that Balliet and colleagues (2009) reviewed, the relation between SVO and allocation behaviour was stronger in the prisoner's dilemma and the public goods dilemma than it was in the common goods dilemma. The prisoner's dilemma and the public goods dilemma are give-some dilemmas, which are loss-framed dilemmas. For example, in the public goods dilemma, the participants/allocators are given a specific amount of tokens/resources and they are asked to contribute to a common resource pool. The accumulated resources in the pool is then multiplied by a certain factor and divided equally among the players. The dilemma is loss-framed because the player has to give up some of his or her resources in order to make a potential gain. However, the common goods dilemma is a take-some dilemma that has a gain frame. Participants in this dilemma are given the chance to harvest or consume as much as they want from a shared resource until there are no resources left. Balliet and colleagues (2009) argued that differences in the effect of SVO on cooperative choices between these two kinds of dilemma can be explained as individuals being more sensitive to losses than gains. The difference in prosocial and proself allocation behaviour is seen more distinctively in a loss frame than in a gain frame because the equality norm is less salient in a give-some dilemma (loss framed) than in a take-some dilemma (gain framed). In dilemmas where equality norms are less salient SVO becomes more predictive of allocation behaviour (de Kwaadsteniet, van Dijk, Wit, & de Cremer, 2006).

Other economic games that have loss frames and have been used to investigate the relation between SVO and allocation behaviour are the Ultimatum Game (UG; Güth, Schmittberger, & Schwarze, 1982) and the Dictator Game (DG; Kahneman, Knetsch, & Thaler, 1986). The UG and DG are similar types of economic games that involve two players

who have distinct roles. One is the allocator who has to make an allocation between him/herself and another person (the receiver). What differs between the two games is the role of the receiver: in the UG, the receiver can either accept or reject the allocation. If the receiver accepts the allocation, both allocator and receiver end up with the allocation as proposed. However, if the receiver rejects the proposed allocation, both the allocator and the receiver end up with nothing. In the UG, the allocation therefore contains a strategic component. The allocator has to estimate the level at which his or her offer might be rejected by the receiver. In the DG, on the other hand, the receiver has no choice and simply has to accept the allocation made by the allocator. The DG is therefore considered to be a ‘purer’ measure of fairness in allocation behaviour, because no strategic component is involved and it is therefore assumed that allocators behave in accordance with their allocation preferences, without fear of an offer being rejected.

Researchers have found that it is common for allocators to divide their allocation equally (50:50) in both the UG and the DG (Camerer, 2011). Because of the strategic component that is present in the UG, it is interesting to see how this affects the behaviour of allocators. According to research by E. Van Dijk, De Cremer, and Handgraaf (2004), the ‘fair’ allocation made by allocators in the UG may reflect a selfish self-interest, driven by fear of rejection, or it could be a reflection of “true fairness”. E. Van Dijk and colleagues (2004) manipulated the amount that both the allocator would get if the receiver rejected the allocation in a UG. In the first condition, both the allocator and receiver would get nothing if the receiver rejected the allocations and so participants would experience ‘fear of rejection’. In the second condition, allocators and receivers would get 10% less than what the allocator had proposed if the offer was rejected and so the cost of rejection was lower. The researchers found that prosocials and proselves differed more in the condition where the cost of rejection was lower. The results suggest that making “strategically” fair allocations, based on self-

interest, applied to proselves but not to prosocials (E. Van Dijk et al., 2004). It was reasoned that proselves were acting “fairly” in order to avoid rejection and in a way that would best serve their own interests (E. Van Dijk et al., 2004).

On the basis of the research described above, social motives (e.g., prosocial versus proself orientations) can be teased apart using different social dilemmas. There is good evidence that these social motives underlie the decisions how to allocate resources between self and other. More specifically, prosocials tend to be cooperative when allocating resources. This cooperative behaviour sets apart prosocials from proselves, in that proselves tend to behave in a more individualistic and competitive manner.

As discussed above, SVO is a stable preference that is shaped by both genetic and environmental factors. Regardless of whether differences between prosocials and proselves have their origins in genetic and/or environmental factors, my concern in the current thesis is with the psychological correlates of these differences. If prosocials are more concerned about the interests of the other person (the receiver) than proselves, it seems likely that this concern will be manifested in emotions. It is quite common to hear someone say, “I help others because seeing them suffer upsets me and if I do not help them, I might feel guilty or regretful.” To what extent do prosocials and proselves use emotions to guide their behaviour when making resource allocations between themselves and others? What role do emotions play in deciding an individual’s prosocial behaviour? In the example just cited, we see a prosocial individual’s behaviour is shaped by his or her emotions. His or her sympathy for the plight of a needy other and the anticipation of future negative emotions appear to motivate the helping behaviour. In the next section of this chapter, I will turn to another central construct related to my main research question, namely anticipated emotion and its role in decision making and allocation behaviour.

### **1.3 Anticipated Emotions in Decision Making**

Setting SVO to one side, I will discuss the role of emotions in decision making by specifically focusing on anticipated emotions. Referring back to the cookie example that was given at the start of this chapter, think about the emotions that come into play in the process of deciding how to split a cookie between yourself and another person. In relation to this example, individuals might anticipate feeling proud if they were to split the cookie equally but they might also anticipate regret about not keeping more for themselves. Here I would like to advance another central construct of my thesis, namely anticipated emotions and their role in decision making – particularly in resource allocation behaviour. I will identify theoretical perspectives that are relevant to this construct and also seek to pinpoint the specific anticipated emotions that are relevant to resource allocation decisions, namely anticipated pride, regret and guilt.

Common sense and evolutionary logic suggest that our current emotional states direct the way we behave (DeWall, Baumeister, Chester, & Bushman, 2016). The ‘fight or flight’ concept coined by Walter Cannon (1915) is a commonly cited example of behaviour being caused by current emotional states that influence our motor responses. According to the fight or flight concept, when we are faced with danger, we can either confront the source of danger (fight) or run away from it (flight) (Cannon, 1915). Anger would typically cause one to fight and fear would typically cause one to flee (Russell, 2003, 2009). These scenarios are examples of how emotions can have a direct influence on behaviour. However, if one were to encounter an animal but does not yet know whether it is dangerous, it is less clear what emotions the individual would experience and how the fight or flight system would respond.

Baumeister, Vohs, De Wall and Zhang (2007) proposed a dual-process model in which they distinguish between “conscious emotion,” which functions when an individual is aware of his/her emotional state, and “automatic affect,” which functions without intention

and unawareness. The “conscious emotion” often occurs after an action has been undertaken and triggers cognitive processing of the action, which leads to physiological changes that then activate motor responses. “Automatic affect,” on the other hand, is based on past emotional experiences that are stored in memory. Unlike “conscious emotion,” “automatic affect” informs subsequent behaviour very rapidly because past emotional situations, physiological changes and motor responses are already associated and connected in our brains. The current affect combined with past emotional experiences would allow individuals to anticipate emotional outcomes in order to make decisions. In a fast-changing situation, automatic affect provides an effective way to survive.

#### **1.4 Theoretical Perspectives on Emotions and Behaviour**

From the above discussion, it follows that there are two kinds of links between emotions and behaviour. According to the emotion-as-direction perspective, current emotions guide behaviour directly (DeWall et al., 2016). This perspective has been studied extensively, but may not be applicable to all situations. Take for example, the scenario where anger causes people to fight and fear causes an individual to flee. If an individual is faced with a bully in school, s/he might experience fear, which may cause him/her to flee, or s/he may feel angry about being bullied, which may cause him/her to stay and confront the bully. In these examples, current emotion shapes subsequent behaviour. However, if s/he stopped to consider the consequences of fighting, such as both parties getting hurt, s/he might be less likely to confront the bully; likewise, s/he might anticipate feeling regret if s/he were to be teased for running away from the bully, and this might make her less likely to flee. Thus anger may lead someone to aggress and fear may lead someone to flee, but the anticipation of future emotions, such as regret, may also play a role in shaping behaviour. According to Baumeister and colleagues (2007), emotions may induce behavioural tendencies but it may

not always translate into actual behaviour. This brings us to the second theoretical perspective, namely the emotion-as-feedback perspective (DeWall et al., 2016).

The emotion-as-feedback-perspective describes how anticipated emotions guide behaviour (DeWall et al., 2016). For example, if a student were to cheat during an exam and got caught, s/he would presumably experience regret about having cheated. However, if s/he had anticipated feeling this regret before actually engaging in the cheating, s/he may not have cheated in the first place in order to avoid experiencing this regret. The emotions that were anticipated in relation to the potential consequences of cheating would have changed the behaviour of the student. This assumes a cognitive process whereby the conscious emotions that were experienced as a result of an earlier action (or inaction) are stored in memory and provide information when a similar situation arises in the future. This information is then used to guide future behaviour.

The emotion-as-feedback perspective is compatible with the view that emotions arise from cognitive appraisals, whereby individuals' evaluations (or appraisals) of specific events give rise to certain emotions (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). According to appraisal theory emotions are based on individual interpretations of current situations and/or how the immediate environment affects the individual (Ellsworth & Scherer, 2003). This helps to explain why different individuals can experience different emotions when exposed to the same set of circumstances. This is relevant to individual differences in SVO because we can assume that individuals who differ in SVO also differ in how they appraise a given situation, which in turn will give rise to different emotions and thereby to different behaviours.

Of the two perspectives discussed above (the emotion-as-direction and emotion-as-feedback perspective), the latter is the more relevant one for the purposes of this thesis. Indeed, it has been argued that anticipated emotions have a stronger effect on behaviour than



currently felt emotions (Lerner, Li, Valdesolo, & Kassam, 2015; Mellers & McGraw, 2001). A recent meta-analysis found that although the emotion-as-direction perspective has been investigated more than the emotion-as-feedback perspective, a significant influence on behaviour was found in only 22% of the emotion-as-direction perspective studies, whereas 87% of the emotion-as-feedback studies found a significant influence (DeWall et al., 2016). This suggests that individuals routinely use anticipated emotions to guide their behaviour, seeking to avoid negative emotions (e.g., regret, disappointment and guilt) and to increase positive emotions (e.g., pride, satisfied and pleased) (Van Der Schalk, Bruder, & Manstead, 2012).

Emotions can be categorised as positive or negative in valence (Russell, 2003). However, Pfister and Böhm (2008) argued that the structure of emotions may be more complex than this and that it might not be possible to group them in this way. For example, for someone who is angry, the anger may represent hostility and therefore be classed as negative, but at the same time, the anger may be felt as pleasurable as it makes the individual feel strong (Pfister & Böhm, 2008). Thus the positive and negative aspects of emotions are not always mutually exclusive, and it may therefore be unduly simplistic to distinguish emotions on the basis of their positive or the negative valence (Lerner & Keltner, 2000; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). Instead, individual emotions have distinct features and functions. In the current thesis, I will focus on distinct anticipated emotions, namely anticipated pride, regret and guilt that are deemed relevant emotions in the context of resource allocation behaviour.

To study psychological factors in resource allocation behaviour, economic games such as the UG (Güth et al., 1982) and DG (Kahneman et al., 1986) are commonly used. According to Kahneman and Tversky (1974), decision makers rely on heuristics to make their decisions. A heuristic is a rule of thumb that facilitates the decision making process,

when the decision may involve several options and it would be effortful (or in some complex cases even impossible) to work out all of the possible permutations. The psychological game theory (Geanakoplos, Pearce, & Stacchetti, 1989) uses mathematical models to explain the strategies available to an individual according to the payoffs available to him/herself and the game opponent. In this decision process, participants may be influenced by the emotions they anticipate when behaving one way or another, as a result of cognitive appraisals about the options available (see also Chang & Smith, 2015). These anticipated emotions can be regarded as heuristics that shape future decisions.

In the next section, I will review decision-related emotions (pride, regret and guilt) and discuss how these emotions are relevant to resource allocation decisions.

#### **1.4.1 Decision-Related Emotions**

*Pride.* Pride is often considered to be a pleasant emotion that is related to positive behaviour (Van Osch, Zeelenberg, & Breugelmans, 2018). People who experience pride tend to describe themselves using positive adjectives, such as accomplished, confident, and fulfilled (Van Osch et al., 2018). The nonverbal expression of pride (“small, non-Duchenne smile, head tilted slightly back, a visibly expanded posture, and arms either raised above the head with hands in fists or at sides with hands placed firmly on the hips” (Tracy, Robins, & Lagattuta, 2005, p. 251)) is recognized cross-culturally by children and adults (Tracy & Robins, 2008; Tracy et al., 2005; Van Osch, Breugelmans, Zeelenberg, & Fontaine, 2013). Pride is a “self-conscious” emotion which requires self-evaluation (Tracy, Shariff, & Cheng, 2010); it involves both the “I” to evaluate the self and also the “me” that is evaluated. Pride can be distinguished into two distinct forms: *authentic pride* that results from internal, unstable and controllable causes (e.g., I got first place in the test because I practised hard), and *hubristic pride* that results from internal, stable and uncontrollable causes (e.g., I got first place because I am the best in everything I do) (Tracy & Robins, 2007). Tracy and Robins

(2007) argue that pride serves two primary social functions. First, *authentic pride* can reinforce prosocial behaviour, for example people who experience *authentic pride* attribute positive outcomes to their own efforts and this could motivate the goal to become better at something (Tracy & Robins, 2007). Second, *hubristic pride* enhances social status by informing the individual and others of the individual's success. In this case, a feeling that results from an event that could trigger authentic pride develops into something more boastful (Tracy & Robins, 2007). Although the expression of hubristic pride can enhance someone's social standing in some observers' eyes, it is less likely than its authentic counterpart to generate prosocial outcomes.

One group of researchers (Dorfman, Eyal, & Bereby-Meyer, 2014) investigated whether pride led to prosocial behaviour, although they did not distinguish between authentic and hubristic pride. Participants were asked to write about an event that would be a source of pride or joy before playing an economic game. In the control condition participants skipped this writing task and proceeded to the economic game immediately. This was a social dilemma task in which participants played a fishing game with another virtual player. On a computer screen, participants were told how many fish they had caught in each trial (there were 60 trials) and they were asked to return some (any amount of) fish to the lake. The rule of the game was that the number of fish in the lake should not be lower than 70. To make the game believable, participants were prompted with a message that the fish in the lake were reaching the cut-off amount of 70 fish after a certain number of trials. Participants in the pride condition behaved more cooperatively by returning more fish to the lake than participants in the joy and control conditions. This suggests that prosocial behaviour is more likely when the concept of pride has been activated.

The study by Dorfman and colleagues' (2014) shows that experienced pride can increase prosocial behaviour. Other research has shown that the anticipation of pride also

leads to more prosocial behaviour in the context of pro-environmental behaviour (Onwezen, Antonides, & Bartels, 2013; Rezvani, Jansson, & Bodin, 2015) and in volunteer recruitment (Boezeman & Ellemers, 2008). However, the study by Dorfman and colleagues did not manipulate the source of pride or what it was that the participants were proud about. People can be proud about prosocial behaviour, but it is equally conceivable that they can be proud about competitive achievements. Van Der Schalk, Bruder and Manstead (2012) indeed showed that participants who anticipated pride about being fair were more likely to act fairly towards an anonymous other in an UG, but participants who anticipated pride about being unfair acted less fairly towards the anonymous other. These studies reveal that pride is a relevant emotion in the context of both fair and unfair allocation decisions and in the current thesis I therefore investigate the effect of anticipated pride on decision making in economic games.

*Regret.* Regret is a negative emotion that we experience when “realizing or imagining that our present situation would have been better, had we decided differently” (Zeelenberg & Pieters, 2007). Along similar lines, Kahneman and Tversky (1982) defined regret as a special form of frustration that is felt when one imagines making a decision that would produce a more desirable outcome than the one resulting from the actual decision made. Savage (1951) proposed the ‘minimax’ regret principle which states that, in decision making, an individual will compute the maximum regret that they would experience for each option and then choose the option that would evoke the minimum amount of regret. Within the field of economics, it is proposed first that people experience both regret and rejoicing, and second that people try to anticipate these experiences of regret and rejoicing when making decisions under uncertainty (Loomes & Sugden, 1982). Research on regret in decision making has since expanded into many different fields beyond economics and psychology. For example, in the field of medicine, the role of regret has encouraged patients to think more elaborately

on future risks and non-risks if they do not proceed with breast surgical treatment (Speck, Neuman, Resnick, Mellers, & Fleisher, 2016; S. Van Dijk, Van Roosmalen, Otten, & Stalmeier, 2008) and in relation to nutrition, the anticipation of regret reduces the consumption of processed meat (Carfora, Caso, & Conner, 2017).

In the current research, we focus on the role of anticipating regret in decision making. The fear of future regrets influences decision makers' behaviour (Janis & Mann, 1977). Several studies have shown that people tend to avoid regret by modifying their choices (Van de Ven & Zeelenberg, 2011; Van Der Schalk et al., 2012). In these studies, anticipated regret refers to the difference between the outcome chosen and the alternative outcomes that could have been chosen. For example, by comparing how much regret one would feel when acting unfairly with the regret that one would feel when behaving fairly. Because individuals try to avoid feeling regret they should be more likely to treat other individuals fairly if they believe that the regret they would experience when acting unfairly would be greater than the regret they would experience when acting fairly. On the other hand, they should be more likely to treat another person unfairly if they anticipate that the regret from acting fairly would be greater than the regret from acting unfairly. The tendency to avoid feeling regretful is known as regret aversion (Van de Ven & Zeelenberg, 2011).

*Guilt.* Guilt is a feeling that occurs when you believe that you have done something bad (Niedenthal, Tangney, & Gavanski, 1994) or when you think that you have violated social norms and/or your own moral values (Berndsen & Manstead, 2007; Kugler & Jones, 1992). Emotions that are related to guilt are sometimes treated as interchangeable with shame (Haidt, 2003) and embarrassment (Tangney, Miller, Flicker, & Barlow, 1996). Tangney and colleagues (2005) argued that shame results from a negative behaviour that is attributed to a *bad self*, whereas guilt results from negative behaviour that is attributed to something more specific and circumstantial. Embarrassment and shame are similar in the sense that when

people experience these emotions, they will tend to hide from other (Tangney et al., 2005). However, because these emotions are experienced after engaging in a wrongdoing or is anticipated when contemplating engaging in a wrongdoing, for the purposes of the research reported in this thesis I grouped guilt, shame and embarrassment together as *guilt*. My concern is with how anticipated guilt alters behaviour, specifically allocation behaviour in economic games.

Research has shown that when individuals experience guilt, they alter their behaviour and become more prosocial in the future in order to avoid feeling guilty again (Baumeister, Stillwell, & Heatherton, 1994; Maitner, Mackie, & Smith, 2006). However, what happens when an individual anticipates guilt upon a future action? According to Massi Lindsey and colleagues (2007), anticipated guilt can be activated by imagining a potential wrongdoing (or failing to act in a righteous way), and individuals can avoid this future guilt through altering their future behaviour. For example, in a study that investigated whether guilt proneness would decrease re-offending in a prisoner population, Tangney and colleagues (2014) first interviewed prisoners shortly after being incarcerated and had a follow-up interview one year after they were released into the community. In the first interview, the prisoners completed measures of shame- and guilt proneness and externalization of blame using the Test of Self-Conscious Affect (Socially Deviant Version) (TOSCA-SD; Hanson & Tangney, 1996). At the follow-up interview, participants were asked what type of offences they had committed and charged for (if any) and offence records were also used. As predicted, it was found that prisoners with higher guilt proneness were less likely to reoffend compared to their less guilt prone counterparts (Tangney et al., 2014). This suggests that thinking of the guilt that would be aroused from reoffending prevented convicted criminals from reoffending.

As guilt is a moral emotion (Malti & Krettenauer, 2013) and is linked to empathy, it can be argued that it enhances the likelihood of engaging in prosocial behaviour (Kochanska

& Aksan, 2006). Research has shown that anticipated guilt is indeed a strong predictor of prosocial behaviour. For example, anticipation of guilt increases the intention to register as an organ donor (Wang, 2011) and it also increases pro-environmental behaviour (Schneider, Zaval, Weber, & Markowitz, 2017).

*Emotions in decision making.* The decision-related emotions discussed above, all have relevance to prosocial behaviour. I also reviewed research showing that the relation between emotion and behaviour is well explained by the emotion-as-feedback perspective. This perspective argues that previous experiences of emotion are stored in memory and are then activated when similar situations are encountered in the future, allowing individuals to anticipate how they would feel if they were to act the same way. This enables individuals to modify their behaviour in order to pursue or to avoid certain emotional experiences (Maitner et al., 2006; Van Der Schalk et al., 2012). It could be argued that the influence of anticipated emotion allows a more reasonable decision to be reached (Baumeister et al., 2007). This demonstrates how anticipated pride, regret and guilt guide behaviours and the importance of considering anticipated emotion in decision making.

### **1.5 Mediating Role of Anticipated Emotions**

As discussed in the above individual differences in SVO influence allocation behaviour (Balliet et al., 2009; Messick & McClintock, 1968). Although the relationship between SVO and allocation behaviour is well established, SVO is commonly measured by asking participants to choose a preferred division of resources between themselves and an anonymous other. These measures are therefore very similar in form to the decisions that have to be made in economic games, where an individual is asked to divide resources between him/herself and another person. In some sense, SVO and resource allocation decisions in an economic game can both be seen as an expression of the individual's preferences. It could be argued that the SVO measures commonly used in the literature do not

shed much light on the psychological processes that are responsible for differences in allocation behaviour. It has been proposed that the greater tendency of prosocials to engage in cooperative or prosocial behaviour is due to sympathy and/or empathy (Eggum et al., 2011; Van Kleef & Van Lange, 2008). This raises the question of whether prosocials and proselfs make different use of anticipated emotions to guide their behaviour. Although (as discussed above) there is evidence that anticipated emotions influence allocation behaviour (Mellers & McGraw, 2001; Van Kleef & Van Lange, 2008), to my knowledge the relation between SVO and allocation behaviour and the relation between anticipated emotions and allocation behaviour have thus far been studied independently. If both SVO and anticipated emotions predict allocation behaviour, what is the relation between these two constructs, and how do they jointly determine allocation behaviour? It seems plausible that the psychological mechanism underlying differences in the preference for allocations of prosocials and proselfs is differences in anticipated emotion (Chapter 3 discusses this topic more comprehensively). The central research question in this thesis is whether anticipated emotions mediate the relationship between SVO and allocation behaviour. Below, I provide an overview of how the subsequent chapters in this thesis address this main research question.

## **1.6 Overview of Subsequent Chapters**

### **1.6.1 Chapter 2**

Previous studies have shown that SVO is predictive of the extent to which people engage in cooperative or competitive behaviour in social dilemmas (Mellers & McGraw, 2001; Van Der Schalk et al., 2012). The current measures of social value orientation (SVO) involve choosing between different options regarding how a certain amount of resource is to be divided between the self and another person. Use of these measures has demonstrated that SVO is a stable individual difference that captures preferences in social decision making (Messick & McClintock, 1968) and that there is a relation between SVO and emotional



processes in decision making (Messick & McClintock, 1968; Murphy et al., 2011; Van Lange et al., 1997). However, these SVO measures do not provide any real insight into the different psychological motivations underlying decision making. The aim of the studies reported in Chapter 2 was to develop a measure that would reliably and validly measure anticipated emotions about fair and unfair allocations, so that I could then go on to examine how this measure, which I call the Index of Cooperative and Competitive Emotions (ICE) measure, is related to SVO and to allocation behaviour. Chapter 2 provides a detailed discussion of the development of the new measure, including evidence of its psychometric properties.

### **1.6.2 Chapter 3**

In Chapter 3, I addressed my main research question, namely does anticipated emotion mediate the relationship between SVO and allocation behaviour? The aim of the studies reported in Chapter 3 was to investigate whether individual differences in allocation behaviour can be explained in terms of anticipated emotions. In these studies I measured participants' anticipated emotions using the newly developed ICE measure discussed in Chapter 2, participants' SVO using the SVO Slider Measure (Murphy et al., 2011) and allocation behaviour using economic games (the UG and the DG). The mediating effect of anticipated emotions on the relation between SVO and allocation behaviour was tested in two different populations (psychology students and business students).

### **1.6.3 Chapter 4**

According to Social Identity Theory (Tajfel & Turner, 1979), individuals derive part of their identity from the groups they belong to and in order to feel positively about themselves, they will search for attributes that positively distinguish their ingroup from other groups. This search for positive ingroup distinctiveness should be especially evident in an intergroup setting, where individuals are more keenly aware of their group membership (Tajfel & Turner, 1979). Consistent with this reasoning, researchers have found that

participants are more generous to ingroup members than to outgroup members when allocating resources, reflecting ingroup favouritism (Ben-Ner, McCall, Stephane, & Wang, 2009). In the studies reported in Chapter 3, participants were asked to allocate tokens between themselves and an anonymous other whose group identity was unknown. However, in the studies reported in Chapter 4, the receivers' ethnic identity was systematically varied in a cultural context where ethnic identity is a salient social issue. My aim was to see whether allocation behaviour would differ as a function of the match or mismatch between allocator and receiver ethnic identity. Malaysian participants were recruited for these studies due to the multi-ethnic composition of the Malaysian population, which creates an ideal platform for the investigation of intergroup effects on resource allocation behaviour. Additionally, the aim of the studies in Chapter 4 was to see if the findings of Chapter 3 would replicate in a non-western sample.

#### **1.6.4 Chapter 5**

The findings reported in Chapters 3 and 4 showed that anticipated emotions played a mediating role in the relationship between SVO and allocation behaviour (as predicted). In particular, I found that participants who are high in SVO (and therefore prosocial), anticipate more cooperative than competitive emotions and that this (at least in part) can account for the fact that they give more tokens to others than participants low in SVO (proselfs). However, to what extent do these anticipated emotions causally influence allocation behaviour? Although the evidence from the mediation analyses reported in Chapter 3 is consistent with the view that allocation behaviour is influenced by anticipated emotions, the story would be more compelling if anticipated emotions could be experimentally manipulated and differences in allocation behaviour would result from it. This was the central aim of the two studies reported in Chapter 5. Participants were instructed to down-regulate or up-regulate their anticipated emotions prior to taking part in resource allocation. The studies aimed to show

that participants would allocate less tokens in the down-regulation condition and allocate more tokens in the up-regulation condition than in the control condition. The studies also aimed to examine whether emotion regulation moderates the influence of SVO on allocation behaviour. It is expected that findings would show that prosocials would become less prosocial when asked to down-regulate their emotions, while proselves would become more prosocial when asked to up-regulate their emotions.

### **1.6.5 Chapter 6**

To conclude the thesis, in Chapter 6 I summarize the findings of the studies reported in the earlier chapters and discuss the theoretical and practical implications of these findings. Every study has its limitations, and here I discuss the key limitations in terms of methodological and theoretical issues of the studies reported in the previous chapters. Finally, I discuss how future research could build on the current findings.

## **2 Chapter 2: Development of the Index of Cooperative and Competitive Emotion (ICE) Measure**

### **2.1 Introduction**

Anticipated emotion plays an important role in resource allocation behaviour. Researchers have shown that when people face an allocation decision they consider the extent to which the outcome of the decision will make them feel positive or negative (Van Der Schalk et al., 2012). When considering these emotional consequences of their decisions, these anticipated emotions motivate them to behave either fairly or unfairly to another person. This shows that individuals strive to feel positive rather than negative when making a decision and that this is reflected in their decision making. Here, I propose that differences in social value orientation (SVO) may be related to the extent to which individuals anticipate positive and negative emotions about fair or unfair decisions.

#### **2.1.1 The development of SVO measure**

Previous studies have shown that SVO is a stable preference in allocation behaviour (Messick & McClintock, 1968). Different researchers have developed well-known measures to determine an individual's SVO, for example, the decomposed game (Messick & McClintock, 1968), the Triple Dominance Measure (TDM) (Van Lange et al., 1997) and the SVO Slider Measure (SVO-SM) (Murphy et al., 2011). Use of these measures reveals that SVO is an underlying motivation of cooperative and competitive behaviours in resource allocation and social dilemmas. However, none of these measures takes into account the proposed anticipated emotion as a psychological mechanism that reflects these differences in preferences and mediates their impact on decision making. Here, the nature of each of these measures is discussed, followed by an explanation of the development of a new measure that focuses on anticipated emotions as a psychological construct that may be responsible for individual differences for prosocial and competitive motivations in resource allocation.

Early studies done by Messick and McClintock (1968) showed that SVO is an important motivation underlying cooperative and competitive behaviour in social dilemmas. Messick and McClintock (1968) demonstrated the three motivational orientations: individualist (focus on own gain), prosocial (focus on joint gain) and competitive (focus on relative gain) by using decomposed games (devised by Pruitt, 1967). Participants played the decomposed game consisting of 80 different two-choice matrices that depicted divisions between self and an imaginary 'other' person. Those completing the measure were told that they would not meet or interact with the 'other' person. With the different configurations of the 80 different two-choice matrices depicting six classes (calculated using an algebraic permutation of the three motives outcome), Messick and McClintock (1968) manipulated the information given to the participants after each condition. There were three conditions, whereby participants received their own cumulative score, the joint cumulative score of both players, or the difference between their own and the other's cumulative scores in the game. This was done to isolate the social motives underlying allocation behaviour. The researchers demonstrated that these decomposed games can assess individual motivational orientations and these orientations are affected when certain information is given to the participants. For example, when participants were given information on the relative score achieved, they tended to maximise the difference between themselves and the other player's scores, compared to participants who were only given information about their own cumulative score or the joint cumulative score.

In later research, SVO was also measured using a similar decomposed game but here the game was modified into a more concise measure referred to as the Triple Dominance Measure (TDM) (Van Lange et al., 1997). Van Lange and colleagues (1997) reduced Messick and McClintock's (1968) decomposed games to nine items and simplified the choices provided in each item. In the TDM each item involves the allocation of a number of

points between the responder and an imaginary ‘other’ person. The three options represent a competitive choice (which maximizes the difference between the responder and the ‘other’), an individualistic choice (which maximizes the individual gain for the responder) or a prosocial choice (which involves an equal distribution of points and maximizes the joint gain). In this way, the researchers framed the options in such a way that each item represented one SVO. They recruited participants on campuses (e.g., in cafeterias and libraries). Participants were classified as prosocial, individualist, or competitor if at least six of their responses were consistent in terms of preference. They identified 248 participants as prosocial, 164 as individualistic, 46 as competitors, and 115 participants could not be classified. Although this measure is a simplified and concise measure as compared to Messick and McClintock’s (1968) measure of SVO, the TDM is not capable of identifying everyone’s SVO, because as we have just seen, 20% of participants were left unidentified.

A measure that addresses some of the shortcomings of the TDM is the SVO-Slider Measure (SVO-SM) developed by Murphy and colleagues (2011). This measure consists of 15 items and each item has 9 options. Across the 9 options, a continuum of joint payoff is presented to the participants whereby they are able to indicate which allocation they prefer. Unlike the decomposed games and the TDM, the SVO-SM treats SVO as a continuous rather than categorical variable. The SVO-SM is scored in such a way that a single index of a person’s SVO is computed by taking the mean allocation for self and the mean allocation for the other, which is converted to an SVO ‘angle’. Thus, this measure is more sensitive to subtle individual differences, because it measures SVO on a continuous scale rather than as a categorical division. This makes use of information that would be lost when converting a continuous variable to a categorical variable.

The three measures discussed above capture SVO in terms of choices between different options regarding how resources should be divided between self and another person.

These measures have demonstrated that SVO is a stable individual difference that captures preferences in social decision making. Another line of research has demonstrated that there is a relation between SVO and emotional processes in decision making (Zeelenberg et al., 2008). In a study by Nelissen and Dijkers (2007), it was found that the induction of fear only affected prosocials, leading them to behave less cooperatively in the Prisoner's Dilemma (a type of social dilemma). The researchers noted that fear is related to avoiding risk or loss in a social dilemma context. By inducing fear, they argued that individuals would behave less cooperatively in order to avoid losses. However, this should only affect individuals who are not already motivated to not cooperate. This explains why it was only prosocials who were affected by the fear induction. By contrast, the induction of guilt only affected prosocials, such that they behaved more cooperatively in the Prisoner's Dilemma. Nelissen and Dijkers (2007) argued that a guilt induction would lead participants to take the other person's interests into account. However, prosocials already have a dispositional tendency to cooperate, so inducing guilt would not increase prosocials' cooperation. Because prosocials do not have a tendency to cooperate in social dilemmas, inducing guilt should trigger prosocials to think about the other player and behave more cooperatively. This example shows that emotions interact with dispositional preferences in social dilemma situations. More specifically, the induction of fear and guilt before making a decision leads the individual to consider features of the decision (the possibility of loss, or the interests of the other person) that they might not normally take into account.

### **2.1.2 Measuring anticipated emotion as a psychological mechanism of the differences in SVO**

The anticipated emotions that I will focus on in my thesis in relation to resource allocation decision making are pride, regret and guilt. Anticipating feeling proud about being fair can lead people to share more resources with another person, whereas anticipating feeling

proud about being unfair can lead people to share less of their resources (Van Der Schalk et al., 2012). Research has also shown that there is a link between the consideration of pride and cooperative behaviour in social dilemmas (Dorfman et al., 2014). Anticipated regret and guilt about being fair can lead people to share fewer resources, whereas anticipated regret and guilt about being unfair can lead people to share more resources (Ketelaar & Tung Au, 2003; Van Der Schalk et al., 2012). These results show that anticipated emotions can both increase and decrease cooperative and competitive behaviours.

The literature reviewed above shows that anticipated emotions can be predictive of cooperative and competitive behaviour. Anticipated pride about being fair and anticipated guilt and regret about being unfair could be classified as cooperative emotions. Similarly, anticipated pride about being unfair and anticipated guilt and regret about being fair can be classified as competitive emotions. The aim of the studies reported in this chapter is to develop a measure that captures the anticipated emotions relevant to decision making in a single measure. Such a measure should be able to capture the psychological motivation underlying decision making that is not captured by SVO measures. I will refer to this measure as the Index of Cooperative and competitive Emotions (ICE) measure. This index is specifically designed to capture the cooperative and competitive emotions that are anticipated by an individual when this person considers making a fair or unfair division of resources.

In previous research, anticipated emotions have normally been evaluated by asking participants to rate the emotions that they expect to feel in a certain imaginary situation on a scale running from 1, *not at all*, to a higher number indicating *very much* (C. M. Brown & McConnell, 2011; Van Der Schalk et al., 2012). For example, in the studies by Van Der Schalk and colleagues (2012), anticipated emotions were measured by providing participants with allocation scenarios and asking participants how would they feel in each of two scenarios, one in which they divided the allocation equally and another in which they divided



it unequally favouring themselves. Participants rated the extent to which they would feel either *proud* or *regretful* in each scenario on a scale of 1 (not at all) to 5 (very much).

In this chapter, a detailed discussion of the new measure is provided, along with evidence of its psychometric properties. The aim of Study 1 was to develop a reliable and valid ICE measure. In Study 2, I was interested in the stability of the ICE measure by examining the correlation between SVO and ICE measure when the measurement of SVO and ICE took place at two different time-points. In Study 3, the test-retest reliability of the ICE measure was examined by examining the correlation between two ICE measures that were administered at different time-points. Studies 2 and 3 draw on data from studies that will be discussed further in Chapter 5.

## **2.2 Study 1**

Study 1 was conducted to develop the ICE measure. The study used two different samples, psychology and business school students, with a view to exploring whether there are any differences between the two groups in anticipated cooperative and competitive emotions in relation to resource allocation behaviour. According to Van Lange, Schippers and Balliet (2011), there are more prosocials than individualists among psychology students and there are more individualists than prosocials among business students. Thus, I predicted there would be differences in the amount of cooperative and competitive emotions anticipated between these populations.

### **2.2.1 Method**

#### **2.2.1.1 Design and participants**

Sixty students from Cardiff University were recruited to participate in a study in exchange for £3. In addition, there was a lottery in which four participants could win up to a maximum of £30 in Amazon vouchers. The lottery is further explained in the Method section

(under Allocation Behaviour). Of the 60 students (43 females, 17 males;  $M_{age} = 22.03$ ,  $SD = 6.16$ ), 30 were psychology students and 30 were business students. The questionnaire was administered online using Qualtrics.

### 2.2.1.2 Materials

**Index of Cooperative and Competitive Emotions (ICE) Measure.** Participants were presented with six scenarios in each of which they had to imagine that they had made a division of tokens between themselves and an anonymous other (see Appendix A for details of how an item from the ICE measure was presented to participants). It was explained that the tokens were to be converted to points according to different exchange rates (1:1, 2:1 and 1:2), but the other person was not aware of these exchange rates. In this way, we created scenarios that differed in the level of fairness of the allocation: one altruistic (the receiver receiving twice as much as the participant), two fair (equal outcomes for both players), two unfair (the participant receiving twice as much as the other person), and one very unfair (participant receiving four times as much as the other person). The fair allocation conditions had two exchange rates: 1) 1:1, whereby a division of  $18_{\text{allocator}}:18_{\text{recipient}}$  remained the same after applying the exchange rate; and 2) 1:2, whereby an allocation of  $24_{\text{allocator}}:12_{\text{recipient}}$  resulted in an outcome of  $24_{\text{allocator}}:24_{\text{recipient}}$  after applying the exchange rate. The unfair allocation conditions also had two exchange rates: 1) 1:1, whereby an allocation of  $24_{\text{allocator}}:12_{\text{recipient}}$  remained the same after applying the exchange rate; and 2) 2:1, whereby an allocation of  $18_{\text{allocator}}:18_{\text{recipient}}$  resulted in an outcome of  $36_{\text{allocator}}:18_{\text{recipient}}$  after applying the exchange rate. The very fair allocation condition applied an exchange rate of 1:2 to a division of  $18_{\text{allocator}}:18_{\text{recipient}}$  which resulted in an outcome of  $18_{\text{allocator}}:36_{\text{recipient}}$ . The very unfair allocation condition applied an exchange rate of 2:1 to a division of  $24_{\text{allocator}}:12_{\text{recipient}}$  which resulted in an outcome  $48_{\text{allocator}}:12_{\text{recipient}}$ .

An example from the ICE measure is a scenario in which participants are asked to imagine that there are 36 tokens at stake, and the participant proposes taking 24 tokens for him/herself and giving 12 tokens to the anonymous other. With an exchange rate of 2:1, the participant would receive 48 points and the anonymous other would receive 12 points. This depicts the very unfair allocation scenario.

Participants are then asked to rate how they would feel about the allocation in the scenario, using a scale of 1 (not at all) to 5 (very much). The ten emotions that were measured were *pleased*, *proud*, *satisfied*, *regretful*, *sorry*, *disappointed*, *embarrassed*, *foolish*, *guilty*, and *ashamed*. Theoretically, these ten emotions were chosen to capture three emotion constructs: pride, regret and guilt. The terms *pleased*, *proud* and *satisfied* were expected to cluster together and index **pride**; the terms *regretful*, *sorry*, and *disappointed* were expected to cluster together and index **regret**; and the terms *embarrassed*, *foolish*, *guilty*, and *ashamed* were expected to cluster together and index **guilt**. These expectations were based on the shared positive valence of the terms *pleased*, *proud* and *satisfied* (Tracy & Robins, 2007; Van Osch et al., 2018); the shared counterfactual character of *regretful*, *sorry*, and *disappointed* (where the person experiencing the emotion can imagine a better state of affairs if he or she had acted or chosen differently) (Zeelenberg & Pieters, 2007); and the shared self-blame character of the terms *embarrassed*, *foolish*, *guilty* and *ashamed* (where the person appears to feel that he or she is responsible for bringing about an unwanted state of affairs) (Haidt, 2003; Niedenthal et al., 1994).

**Social Value Orientation.** Participants' SVO was assessed using the SVO-SM (Murphy et al., 2011). As noted above, the SVO-SM consists of 15 items and each item involves 9 allocation options. Participants are expected to choose the most preferred allocation between themselves and the recipient (an anonymous other). From participants' choices, an SVO 'angle' can be computed. Larger angles reflect greater prosociality.

Specifically, altruists would have an angle greater than  $57.15^\circ$ ; prosocials would score angles between  $22.45^\circ$  and  $57.15^\circ$ ; individualists would have angles between  $-12.4^\circ$  and  $22.45^\circ$ ; and competitive individuals would have an angle less than  $-12.04^\circ$ . In this study, I treat the SVO angle score as a continuous variable.

**Allocation behaviour.** The Dictator Game (DG; Kahneman et al., 1986) and the Ultimatum Game (UG; Güth et al., 1982) were used to measure allocation behaviour. In both games, the participant played the role of allocator and was given a total of 30 tokens to divide between him/herself and an anonymous other. Participants were also asked to state the minimum offer that they would accept if they were in the role of the recipient in the UG. The participants were told that the tokens had real monetary value, in the sense that at the end of the study, two pairs of participants would be randomly selected and would be paid out according to the allocation made in the economic games. For the pair of participants chosen under the DG, the payout would simply be based on the allocator's proposal. For the pair of participants chosen under the UG, the minimum that the player would accept as a recipient was used to determine the outcome of the UG. For example, if the participant selected as the allocator had proposed  $20_{\text{allocator}}:10_{\text{recipient}}$ , and the minimum acceptable offer indicated by the recipient was  $15_{\text{allocator}}:15_{\text{recipient}}$ , then the pair would receive nothing, but if the minimum acceptable offer indicated by the recipient was  $25_{\text{allocator}}:5_{\text{recipient}}$  then the pair would receive the amount of money proposed by the allocator.

### 2.2.1.3 Procedure

Participants first completed a consent form. Next, they completed a demographic questionnaire (assessing age, gender, self-reported fluency in English, university course and year of study). Participants then completed the ICE measure, reporting their anticipated emotions for the six different allocation scenarios, which were presented in a randomized order. Then they made their own allocations in each of two economic games, the DG and the

UG, which were presented in a counter-balanced order. Next, participants responded to an attention check that tested whether participants were actually paying attention to the content of the questionnaire. Specifically, the attention check asked them to skip a question and move onto the next phase of the questionnaire. If participants clicked on any of the response options, it would show that they had not read the full question carefully and they would fail the attention check. Participants then completed the SVO-SM, followed by the TDM. Participants were next asked to state the minimum offer that they would accept if they were the recipient rather than the allocator. Next, participants were asked if they had taken their participation in the study seriously. Finally, participants were thanked, debriefed and received their reward.

## 2.2.2 Results

### 2.2.2.1 Data treatment

Out of 60 participants (28 Psychology students and 27 Economics students), data from 55 participants ( $M_{age} = 21.64$ ,  $SD = 5.15$ ) were retained for analysis. There were 15 Males and 40 Females. Data from participants who admitted that they had not been serious in answering the questionnaire ( $N = 1$ ) and from those who took longer than 2.5 times the median response time ( $Mdn = 20.42$ ,  $N = 4$ ) to complete the study were dropped.

### 2.2.2.2 Factor analysis

Principal component analysis was used to group emotion items of the different ICE scenarios into factors. We conducted six exploratory factor analyses with Varimax (orthogonal) rotation, one for each of the scenarios. For example, in one factor analysis we included the emotion items of the fair allocation scenario with an exchange rate of 1:1, and in another factor analysis we included the emotion items of the fair allocation scenario with an exchange rate of 1:2.

For all factor analyses, a three-factor solution was specified, in accordance with the theoretical arguments given above. It was also the case that the ‘elbow’ in the scree plots tended to occur after the first three factors. The items *satisfied*, *proud* and *pleased* loaded consistently on one factor in all six analyses (see Tables 2.1 – 2.6). This factor was labelled *pride*. The ways in which the remaining items loaded on the other two factors suggested that these could be labelled as *guilt* and *regret*. However, the item loadings for these two factors were less consistent than they were for the pride factor. For factor labelled guilt, the emotions that loaded consistently on this factor were *guilty*, *ashamed* and *embarrassed*. For the factor labelled regret, the emotion that loaded consistently on this factor was *disappointed*. *Regretful*, *foolish* and *sorry* were the three emotion items that did not consistently load on the same factors in the different analyses. Therefore, I excluded *foolish* and *sorry* from the ICE measure. *Regretful* was retained in the measure on theoretical grounds, given that it represents one of the key emotions that I was aiming to assess. In order to arrive at a balanced number of items (2) for each factor, I also decided to eliminate *satisfied* from the pride cluster and *embarrassed* from the guilt cluster. This left *pleased* and *proud* as the items capturing pride, *regretful* and *disappointed* as the items capturing regret, and *guilty* and *ashamed* as the items capturing guilt.

Because the ICE measure was developed to predict behaviour in DG and UG, the very fair and very unfair scenarios from the ICE measure were not included in further analyses. This was because it was felt that the exchange rates in the ICE measure should reflect those used in the DG and UG. Also, the use of different exchange rates increased the complexity of the ICE measure. Furthermore, the variation in exchange rates appeared to be redundant according to the factor analyses because it is evident that the factor structure remained broadly consistent across all allocation condition scenarios. Thus, there was no added benefit of using the different exchange rates.

For each of the three resulting factors, internal consistency was investigated by calculating Cronbach's alpha. The resulting values for each cluster in the ICE measure were as follows: *anticipated pride* (pleased and proud; fair,  $\alpha = .86$ ; unfair,  $\alpha = .81$ ), *anticipated regret* (regretful and disappointed; fair,  $\alpha = .73$ ; unfair,  $\alpha = .81$ ) and *anticipated guilt* (guilty and ashamed; fair,  $\alpha = .56$ ; unfair,  $\alpha = .92$ ).

Table 2.1. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the fair scenario with the exchange rate 1:1 ratio in Study 1 (N = 55)*

Item	Loadings			Communality
	Guilt	Pride	Regret	
Embarrassed	<b>.921</b>	-.164	.093	.884
Ashamed	<b>.921</b>	-.164	.093	.884
Guilty	<b>.875</b>	.015	.109	.778
Sorry	<b>.711</b>	.058	.169	.537
Pleased	-.087	<b>.912</b>	-.192	.876
Satisfied	-.031	<b>.903</b>	-.290	.900
Proud	-.064	<b>.900</b>	.128	.830
Regretful	.173	-.125	<b>.857</b>	.780
Disappointed	-.023	-.128	<b>.757</b>	.590
Foolish	.291	-.011	<b>.746</b>	.642
Eigenvalue	3.824	2.319	1.558	
% of Total Variance	38.243	23.191	15.576	
Total Variance			<b>77.011%</b>	

Table 2.2. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the unfair scenario with the exchange rate 1:1 ratio in Study 1 (N = 55)*

Item	Loadings			Communality
	Guilt	Pride	Regret	
Sorry	<b>.878</b>	-.177	.233	.857
Ashamed	<b>.874</b>	-.106	.262	.843
Regretful	<b>.847</b>	-.208	.110	.774
Guilty	<b>.829</b>	-.281	.317	.866
Embarrassed	<b>.824</b>	-.272	.336	.865
Pleased	-.250	<b>.840</b>	-.261	.835
Satisfied	-.107	<b>.802</b>	-.347	.775
Proud	-.213	<b>.795</b>	.221	.726
Foolish	.474	.026	<b>.744</b>	.779
Disappointed	.343	-.378	<b>.676</b>	.717
Eigenvalue	5.776	1.540	.722	
% of Total Variance	57.760	15.400	7.217	
Total Variance			<b>80.377%</b>	

Table 2.3. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the fair scenario with the exchange rate 1:2 ratio in Study 1 (N = 55)*

Item	Loadings			Communality
	Guilt	Pride	Regret	
Ashamed	<b>.910</b>	-.047	-.034	.832
Guilty	<b>.892</b>	.035	.109	.809
Foolish	<b>.716</b>	-.279	.019	.591
Embarrassed	<b>.685</b>	.094	.291	.563
Satisfied	.001	<b>.917</b>	-.231	.894
Pleased	-.118	<b>.882</b>	-.253	.857
Proud	-.053	<b>.845</b>	.009	.716
Regretful	.069	-.036	<b>.882</b>	.785
Disappointed	.071	-.355	<b>.636</b>	.535
Sorry	.330	-.137	.344	.246
Eigenvalue	3.423	2.306	1.100	
% of Total Variance	34.224	23.057	10.996	
Total Variance			<b>68.278%</b>	



Table 2.4. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the unfair scenario with the exchange rate 2:1 ratio in Study 1 (N = 55)*

Item	Loadings			Communality
	Guilt	Pride	Regret	
Guilty	<b>.899</b>	-.126	.233	.878
Sorry	<b>.896</b>	-.009	.148	.825
Ashamed	<b>.844</b>	-.198	.278	.829
Embarrassed	<b>.693</b>	-.098	.403	.653
Satisfied	-.185	<b>.828</b>	-.185	.754
Proud	.021	<b>.821</b>	.068	.679
Pleased	-.170	<b>.818</b>	-.235	.754
Foolish	.223	-.056	<b>.919</b>	.897
Disappointed	.474	-.224	<b>.629</b>	.670
Regretful	.494	-.192	<b>.553</b>	.587
Eigenvalue	4.959	1.763	.804	
% of Total Variance	49.590	17.627	8.045	
Total Variance			<b>75.262%</b>	

Table 2.5. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the very fair scenario with the exchange rate 1:2 ratio in Study 1 (N = 55)*

Item	Loadings			Communality
	Regret	Pride	Guilt	
Regretful	<b>.854</b>	-.044	-.153	.755
Disappointed	<b>.703</b>	-.378	.279	.715
Sorry	<b>.693</b>	.179	-.003	.512
Foolish	<b>.598</b>	-.276	.345	.553
Satisfied	-.146	<b>.865</b>	.012	.770
Pleased	-.260	<b>.864</b>	.028	.814
Proud	.239	<b>.695</b>	-.079	.546
Ashamed	.204	-.070	<b>.866</b>	.796
Guilty	-.158	.071	<b>.815</b>	.694
Embarrassed	.571	-.087	<b>.575</b>	.665
Eigenvalue	3.364	1.882	1.572	
% of Total Variance	33.644	18.821	15.721	
Total Variance			<b>68.185%</b>	

Table 2.6. *Factor loadings and communalities based on a principal components analysis with varimax rotation for 10 items of the very unfair scenario with the exchange rate 2:1 ratio in Study 1 (N = 55)*

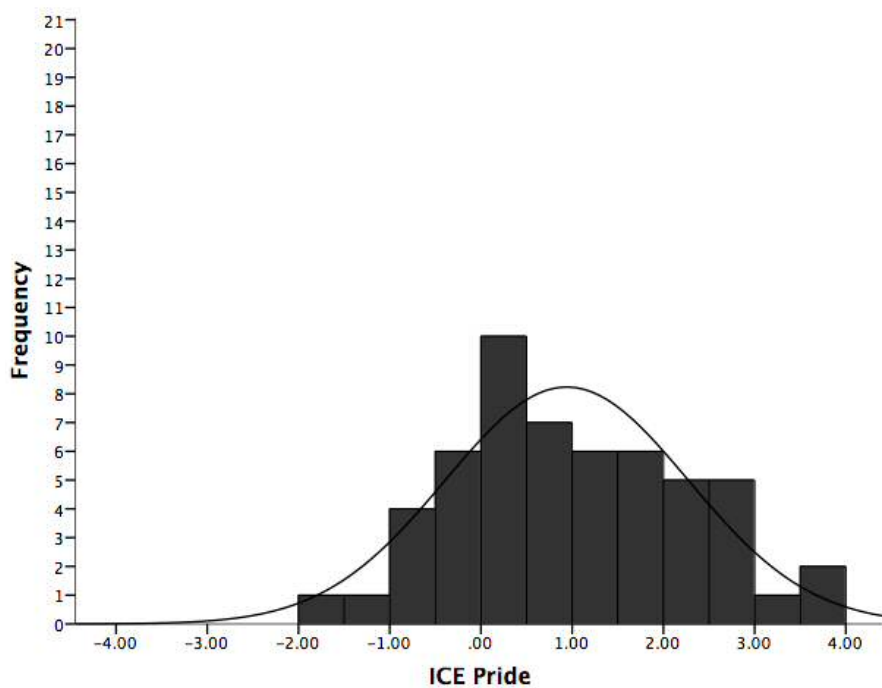
Item	Loadings			Communality
	Guilt	Pride	Regret	
Guilty	<b>.858</b>	-.296	.155	.848
Ashamed	<b>.850</b>	-.293	.259	.876
Sorry	<b>.836</b>	.041	.360	.831
Regretful	<b>.797</b>	-.266	.343	.824
Embarrassed	<b>.758</b>	-.376	.326	.823
Pleased	-.216	<b>.856</b>	-.251	.843
Satisfied	-.177	<b>.840</b>	-.376	.878
Proud	-.215	<b>.837</b>	.174	.778
Foolish	.393	-.062	<b>.788</b>	.779
Disappointed	.458	-.268	<b>.679</b>	.743
Eigenvalue	5.997	1.566	.657	
% of Total Variance	59.973	15.658	6.570	
Total Variance			<b>82.201%</b>	

### 2.2.2.3 The index of cooperative and competitive emotions (ICE)

I created index-scores for cooperative and competitive emotions (ICE scores) by calculating the difference between responses on items relating to the fair and the unfair scenarios, in such a way that higher scores always reflected more cooperative emotions. Specifically, to calculate ICE-pride, the score for anticipated pride about being unfair was subtracted from the score for anticipated pride about being fair, while for ICE-regret and ICE-guilt, the scores relating to fair scenarios were subtracted from the scores relating to unfair scenarios. These indices can be interpreted in such a way that a negative score means anticipating more competitive emotions, having a positive score means anticipating more cooperative emotions, with a zero indicating no difference in the anticipation of cooperative and competitive emotions.

Based on the distributions of each ICE as shown in Figures 2.1, 2.2 and 2.3, participants had on average a positive score on these indices on average. This suggests that

they generally anticipated more cooperative emotions than competitive emotions with respect to resource allocation behaviour. The distribution of ICE-pride appears to have a fairly normal distribution, as compared to ICE-regret and ICE-guilt. Scores for ICE-pride, ICE-regret and ICE-guilt were strongly and significantly correlated (see Table 2.7). This provided a rationale for averaging the three indices into a single ICE measure. Thus, an overall ICE score was computed, which will be referred to as ICE-PRG (see Figure 2.4 for the distribution of scores on this measure).



*Figure 2.1.* Distribution of ICE-Pride scores (Study 1).

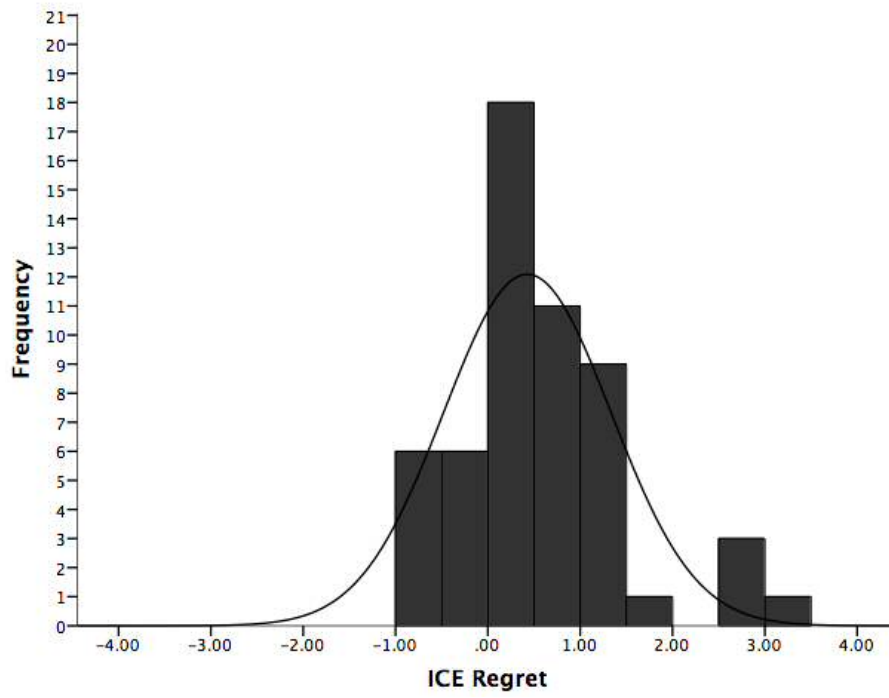


Figure 2.2. Distribution of ICE-Regret scores (Study 1).

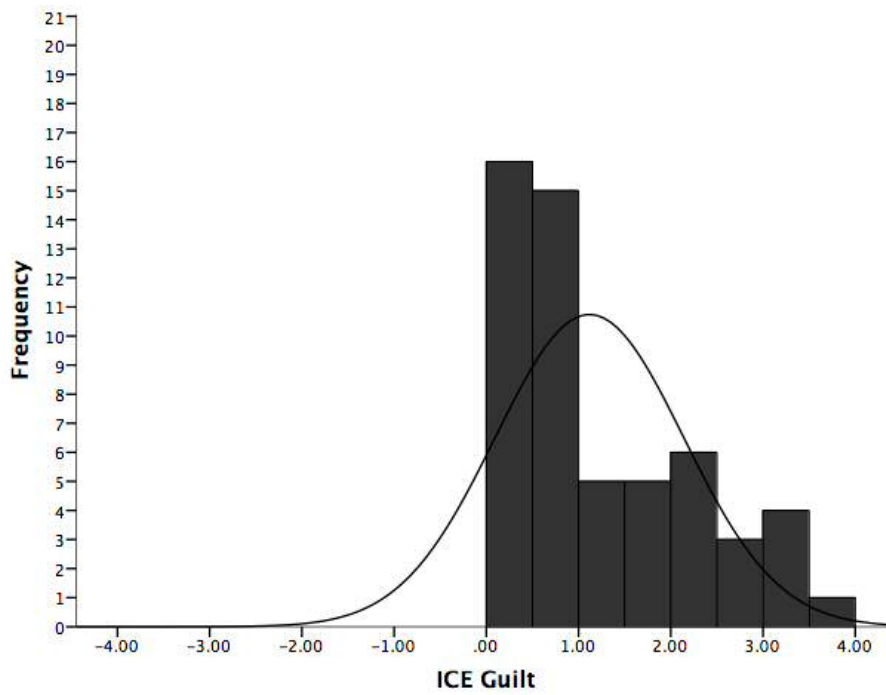


Figure 2.3. Distribution of ICE-Guilt scores (Study 1).

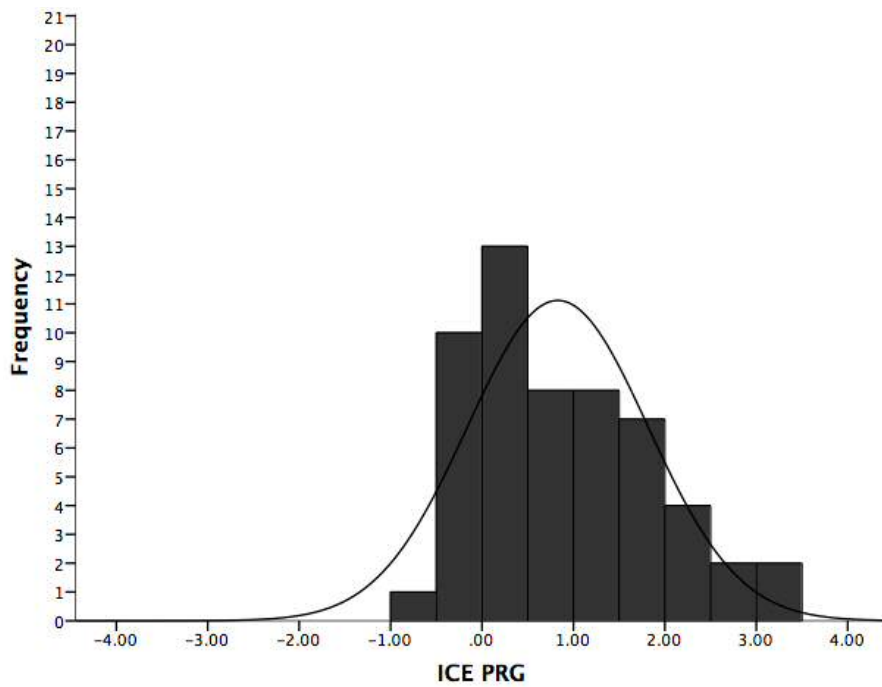


Figure 2.4. Distribution of ICE-PRG scores (Study 1).

Table 2.7 reveals that ICE-PRG is positively related to SVO and allocation behaviour in both DG and UG. This is also depicted in Figure 2.5. In line with my expectations, this suggests that the more prosocial someone is, the more this person anticipates experiencing cooperative emotions. Also, ICE-PRG and the tokens allocated to the receiver in both DG and UG are significantly positively correlated. This shows that people who anticipate cooperative emotions share more resources with another person. Both of these relationships are consistent with the theoretical rationale given in the introduction to this chapter. This suggests that the ICE measure exhibits reasonably good predictive validity. However, given

the correlational nature of these findings, causality cannot be inferred. These relationships will be further explored in Chapter 3.<sup>1</sup>

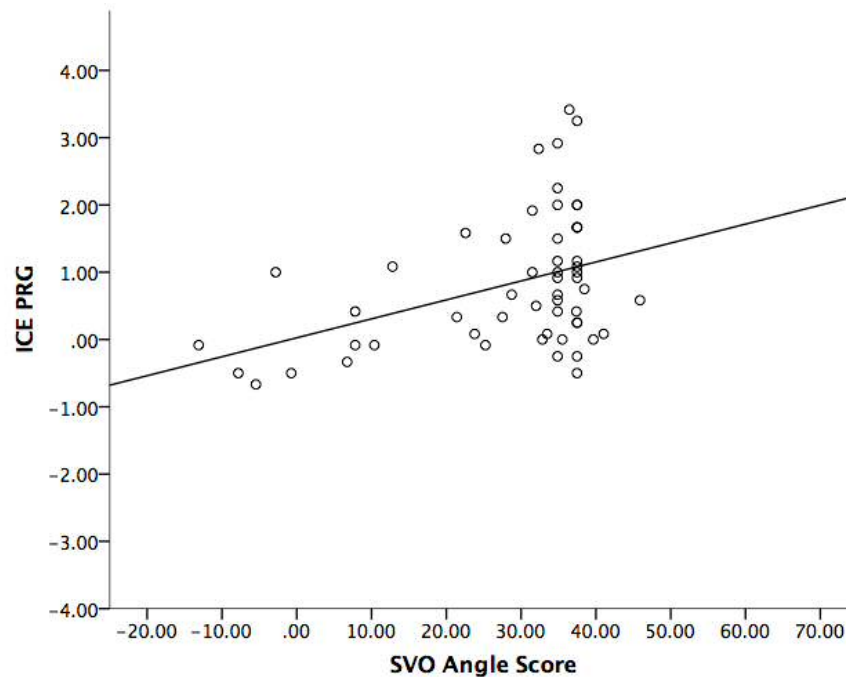


Figure 2.5. The significant positive correlation of SVO and ICE-PRG (Study 1).

#### 2.2.2.4 Psychology versus business students

To investigate whether psychology and business students differed in their anticipated emotions, we conducted a *t*-test. Psychology ( $M = .74$ ,  $SD = .97$ ) and business ( $M = .91$ ,  $SD =$

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<sup>1</sup> SVO was also assessed with the Triple Dominance Measure (TDM) (Van Lange et al., 1997). The TDM consists of nine items and each item involves a 3-options allocation that corresponds to prosocial, individualistic and competitive orientations. An individual needs to select at least six similar options in order to be classified into a particular category. A Pearson chi-square showed that there is a significant association between both SVO SM and TDM,  $\chi(2) = 15.652$ ,  $p < .001$ . This significant association shows that the SVO-SM and TDM classify participants' SVO in similar ways. For analysis purposes, I have decided to use SVO-SM instead of the TDM because the SVO-SM yields a continuous measure.

1.01) students did not differ in their anticipated emotions (ICE-PRG),  $t(53) = .65, p = .521$ . Furthermore, results showed that psychology ( $M = 29.59, SD = 14.16$ ) and business ( $M = 27.51, SD = 14.05$ ) students did not differ in SVO,  $t(53) = -.55, p = .587$ .

An exploration of the allocation behaviour data showed that the average number of tokens allocated to the receiver in both DG and UG were not normally distributed, Kolmogorov-Smirnov:  $D_{DG}(55) = .28, p < .001$  and  $D_{UG}(55) = .34, p < .001$ . Using a Mann Whitney test, the two groups of students, psychology ( $M_{DG} = 11.48, SD_{DG} = 5.87, Mdn_{DG} = 15.00; M_{UG} = 14.04, SD_{UG} = 4.78, Mdn_{UG} = 15.00$ ) and business students ( $M_{DG} = 9.64, SD_{DG} = 6.06, Mdn_{DG} = 15.00; M_{UG} = 12.82, SD_{UG} = 4.60, Mdn_{UG} = 15.00$ ) also did not differ in terms of their allocation behaviour towards others in the DG,  $U = 308.00, Z = -1.262, p = .207$ , or the UG,  $U = 355.00, Z = -.450, p = .653$ .

Table 2.7. Correlations, Means and Standard Deviations of Social Value Orientation (SVO) Angle, ICE-Pride, ICE-Regret, ICE-Guilt, ICE-PRG scores and Tokens Allocated to the Receiver in the Ultimatum Game and Dictator Game (Study 1)

	SVO angle score	ICE- Pride	ICE- Regret	ICE-Guilt	ICE-PRG	Tokens allocated to receiver in UG	Tokens allocated to receiver in DG
SVO angle score							
ICE- Pride	.269*	-					
ICE- Regret	.277*	.771***	-				
ICE- Guilt	.261	.670***	.667***	-			
ICE- PRG	.317*	.937***	.888***	.834***	-		
Token s allocat ed to receiv er in UG	.509***	.303*	.225	.137	.268*	-	
Token s allocat ed to receiv er in	.445**	.373**	.360**	.225	.375**	.559***	-



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DG							
<i>M</i>	28.51	.94	.43	1.12	.83	13.42	10.55
<i>SD</i>	15.01	1.33	.91	1.02	.99	4.68	5.99

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Note.  $N = 55$

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 2.2.3 Discussion

Anticipated emotions play a role in decision making. Thus, it was considered important to develop a measure that captures the anticipated emotions component that presumably drives individual differences in preference in resource allocation behaviour. In order to achieve this goal, the ICE measure was developed. Preliminary examination of the data suggested that the ICE measure could be adjusted to create a short and concise measure. Firstly, the number of emotions that were measured in each item of the ICE measure could be reduced. According to the factor analyses, *pleased*, *proud*, *regretful*, *disappointed*, *guilty*, and *ashamed* should be the emotions retained in the ICE measure. This is beneficial in terms of reducing the redundancy of measuring many similar items. Also, the extreme scenarios such as the very fair and very unfair allocation condition scenarios can be eliminated in order to reduce complexity. By reducing the number of items and also eliminating the extreme scenarios, I could produce a more concise measure that nevertheless captures what the ICE measure was intended to assess.

Furthermore, it was decided that because of the difference in the nature of the DG and UG, whereby the UG has a strategic component while the DG is thought to be a purer measure of fairness of allocation behaviour, the instructions in the scenarios of the ICE measure should reflect the type of game. For example, if the allocation behaviour is measured using the UG, the instructions in the scenarios of the ICE measure should point out that the allocation proposed could be rejected or accepted by the anonymous other. This would emulate the strategic component that the game has and could be reflected in the emotions anticipated by participants. In the same way, if the allocation behaviour is measured using a DG, the instructions in the scenarios of the ICE measure should reflect the DG, making it clear that the allocation has to be accepted by the anonymous other, regardless of the amount proposed. By adapting the instructions used in the ICE measure to reflect those used in the

game in which allocation behaviour is measured, the ICE measure should be a better measure of the anticipated emotion that would be experienced in the real economic games.

Although it was expected that psychology students would be more prosocial than business students, and would therefore anticipate more cooperative emotions and less competitive emotions, the results showed that there were no differences between the two groups in terms of their anticipated emotions. Results also showed that participants did not differ in their SVO angle or in their allocation behaviour to others in the DG and the UG. This suggests that the absence of a difference in ICE-PRG should be interpreted in light of the lack of difference in SVO and allocation behaviour between psychology and business students. Based on previous literature, psychology students are thought to have a tendency to behave cooperatively, whereas business students have a tendency to behave competitively, and this should be reflected in their allocation behaviour (Van Lange et al., 2011). However, this was not the case when comparing psychology and business students in this study in terms of SVO, ICE PRG and allocation behaviour. Given the modest number of participants recruited, it may be the case that the absence of differences is due to a lack of statistical power. The possibility that this lack of differences was due to a modest sample size is addressed in the next chapter, Chapter 3.

## **2.3 Study 2**

### **2.3.1 Introduction**

The aim of Study 2 was to assess the reliability and validity of the newly developed ICE measure. This study had two phases: Time 1 (T1) and Time 2 (T2). At T1, only SVO was measured. At T2, participants' anticipated emotions were measured using the newly developed ICE measure, along with their allocation behaviour using only the DG. The

instructions used for the scenarios of the ICE measure were consistent with the instructions used for the DG.

## 2.3.2 Method

### 2.3.2.1 Design and participants

At T1, 200 Cardiff University psychology students ( $M_{age} = 18.90$ ,  $SD = 1.55$ ), of whom 26 were males and 174 were females, were recruited. At T2, 203 Cardiff University psychology students ( $M_{age} = 18.92$ ,  $SD = .92$ ), of whom 21 were males and 181 were females, were recruited. Participants who had completed the survey at T1 were invited to take part in an online study at T2. Data were collected online using Qualtrics. All participants who participated at T1 and T2 were awarded course credits upon completing each phase. Additionally, participants who took part in T2 were entered into a lottery in which two pairs of participants were randomly chosen to win a voucher worth £30. Allocation of the vouchers between the lottery winners was carried out in the same way as described in Study 1.

### 2.3.2.2 Materials

At T1, SVO was measured using the SVO-SM. At T2, anticipated emotions were measured using the ICE measure and allocation behaviour was measured using the DG. In this study, the ICE measure was adjusted based on the factor analytic results of Study 1, as described below.

**Index of Cooperative and Competitive Emotions (ICE) Measure.** This ICE measure is an amended version of the ICE measure developed in Study 1. It consists of six items, in each of which participants are asked to imagine that they have made a division of a number of tokens between themselves and another anonymous person. In this version of the ICE measure, there was no variation in exchange rates. The proposed divisions between the allocator (participant) and the anonymous other in the scenarios represented fair (15:15; 18:18; 21:21) or unfair (20:10; 24:12; 28:14) allocations. Participants were asked to rate how

they would feel about the allocation in each scenario, using a rating scale running from 1 (not at all) to 5 (very much). The six emotions that were measured were *pleased*, *proud*, *regretful*, *disappointed*, *guilty*, and *ashamed*. In addition, the instructions for the ICE measure were adapted in such a way that they made it clear that the receiver could not reject the allocation in each scenario (see Appendix B for details of how an item from the ICE measure in its DG version was presented to participants).

### 2.3.2.3 Procedure

At T1, participants were given a unique code and completed the SVO-SM. At T2, which is in average five months later, participants completed the ICE measure and played the DG. At T2, participants were asked to report their demographics and also the unique code given to them previously at T1. This enabled me to match SVO angle scores at T1 with the data collected at T2 without breaking the anonymity of participants' data. T2 participants then completed the ICE measure and made DG allocations in three separate games, such that their allocation of tokens between themselves and an anonymous receiver was measured three times.<sup>2</sup> Participants were then asked if they had taken their participation in the study seriously. At the end of each phase, participants were thanked, debriefed and awarded course credits.

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<sup>2</sup> Please note that different conditions were used at T2 to measure the effects of an emotion regulation manipulation. To maintain the focus of the current chapter on the development and validation of the ICE measure, the fact that there were different conditions will be disregarded. The influence of these different conditions will be further discussed in Chapter 5. Also, in the present chapter allocations averaged across three DGs are used to assess allocation behaviour, in order to make the chapter more concise.

### 2.3.3 Results

#### 2.3.3.1 Data treatment

First, out of 203 participants that took part in T2, data from only 170 participants ( $M_{age} = 18.93$ ,  $SD = .93$ ) were retained. There were 19 males and 151 females. Participants who responded more slowly than 2.5 times the median response time ( $Mdn = 8.23$ ,  $N = 10$ ), had duplicated identification numbers ( $N = 21$ ), or who reported that they were not serious in answering the questionnaire ( $N = 2$ ) were eliminated from the data analyses. We then investigated how many of the remaining participants at T1 had also participated at T2. This was the case for 111 ( $M_{age}=18.79$ ,  $SD = .91$ ), of whom 15 were males.

The internal consistency of each emotion cluster was analysed using Cronbach's alpha. The three clusters are as follows: *anticipated pride* (pleased and proud; fair,  $\alpha = .91$ ; unfair,  $\alpha = .87$ ), *anticipated regret* (regretful and disappointed; fair,  $\alpha = .88$ ; unfair,  $\alpha = .93$ ) and *anticipated guilt* (guilty and ashamed; fair,  $\alpha = .90$ ; unfair,  $\alpha = .94$ ).

#### 2.3.3.2 The index of cooperative and competitive emotions (ICE)

As in Study 1, three different indices, ICE-pride, ICE-regret and ICE-guilt, were created from the anticipated emotion scores. This was again achieved by calculating the difference in ratings of each anticipated emotion between the fair and unfair scenarios. As shown in Table 2.8, ICE-pride, ICE-regret and ICE-guilt are significantly and positively correlated. The three indices were therefore averaged to form ICE-PRG.

Table 2.8. Correlations of ICE-Pride, ICE-Regret and ICE-Guilt,  $N = 170$  (Study 2)

	ICE-Pride	ICE-Regret	ICE-Guilt
ICE-Pride	-		
ICE-Regret	<b>.595**</b>	-	
ICE-Guilt	<b>.595**</b>	<b>.603**</b>	-
<i>M</i>	.98	.57	1.33
<i>SD</i>	1.32	1.02	1.03

\*\* $p < .01$

### 2.3.3.3 Correlations with SVO and allocation behaviour

Results showed that ICE-PRG and SVO scores are significantly correlated (see Table 2.9 and Figure 2.6), showing that there is a relationship between anticipated emotions and SVO measured in average five months earlier. Moreover, ICE-PRG scores are significantly correlated with participants' allocation behaviour (see Table 2.9 and Figure 2.7). This indicates that anticipated emotions are related to allocation behaviour in the DG.

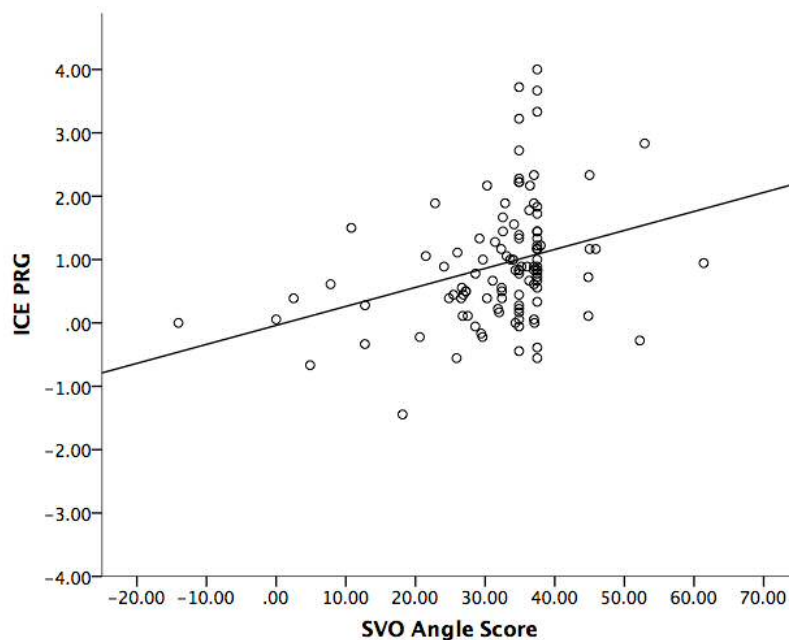


Figure 2.6. The significant positive correlation of SVO and ICE-PRG (Study 2).

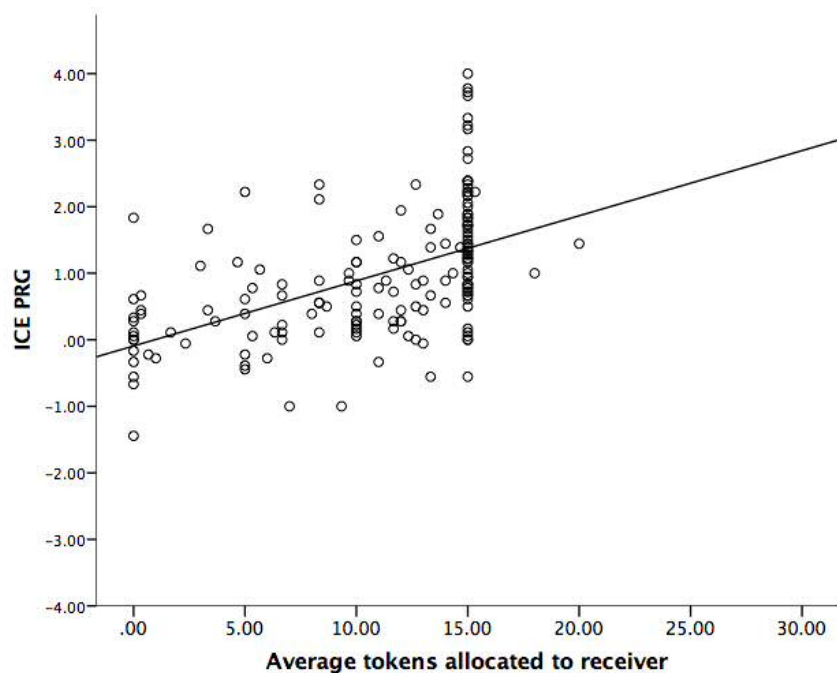


Figure 2.7. The significant positive correlation of ICE PRG and average tokens allocated to receiver (Study 2).

Table 2.9. Correlations of SVO Angle (T1), ICE-PRG scores (T2) and Average Tokens Allocated to the Receiver (T2) (Study 2)

	SVO angle score (T1) ( $n = 111$ )	ICE-PRG (T2) ( $N = 170$ )	Average tokens allocated to receiver (T2) ( $N = 170$ )
ICE-PRG (T2)	<b>.341*</b>	-	
Average tokens allocated to receiver (T2)	<b>.290**</b>	<b>.584**</b>	-
<i>M</i>	32.33	.96	10.76
<i>SD</i>	10.10	.98	5.12

\* $p < .05$ , \*\* $p < .01$



### 2.3.4 Discussion

The revised ICE measure showed that it had the same high level of internal consistency among the items in the measure as was observed in Study 1. In Study 1, anticipated emotions, SVO and allocation behaviour were collected at a single time-point. In the current study, SVO was measured at an earlier time-point than anticipated emotions and allocation behaviour. Despite this difference, the results of Study 2 were consistent with those of Study 1 in showing that anticipated emotions are significantly positively correlated with SVO. This suggests that shared variance between SVO and the ICE measure is stable across time, an issue that will be examined more closely in Study 3.

Despite the changes made to the initial ICE measure developed in Study 1, the results suggest that the ICE measure still has a predictive validity, in the sense that there was a significant relationship between anticipated emotion and allocations in the DG. There was also some evidence from this study that the individual differences captured by the ICE measure are relatively stable over time. This can be seen in the significant correlation between the ICE measure and SVO taken at two different time-points. Because SVO is a stable preference (Messick & McClintock, 1968), the fact that anticipated emotions were significantly correlated with SVO even when SVO was measured several months before the ICE measure points to the temporal stability of the underlying construct. As expected, the results showed that people who anticipate more cooperative emotions tend to have higher prosocial values, and also to make higher allocations to an anonymous other in the DG. These results are consistent with what was found in Study 1. This relationship indicates that people who anticipate feeling more cooperative emotions about resource allocation decisions tend to act more fairly or cooperatively than people who anticipate more competitive emotions about such decisions.

In order to examine the test-retest reliability of the ICE measure, in Study 3 I administered the ICE measure to the same participants at two different time-points. At T1, both SVO and anticipated emotions were measured using the SVO-SM and the ICE measure, respectively. At T2, participants' anticipated emotions and allocation behaviour were measured using the ICE measure and DG, respectively.

## 2.4 Study 3

### 2.4.1 Method

#### 2.4.1.1 Design and participants

Data collected at T1 came from 233 Cardiff University psychology students.<sup>3</sup> Data collected at T2 came from 240 Cardiff University psychology students ( $M_{age} = 18.78$ ,  $SD = .94$ ), of whom 32 were males and 206 were females. Participants who participated at T1 were invited to participate in the T2 study. At both time-points, the surveys were administered online using Qualtrics. Participants were awarded course credits upon completing each phase. Additionally, T2 participants recruited were entered into a lottery in which two pairs of participants had a chance to win Amazon vouchers worth up to £30. Allocation of the vouchers between the lottery winners was executed in the same way as in Studies 1 and 2.

#### 2.4.1.2 Materials

Materials used in this study were similar to those used in Study 2, and consisted of the ICE measure, the SVO-SM, and the DG.

#### 2.4.1.3 Procedure

At T1, participants were given a unique code and asked to complete demographic measures, the SVO-SM and the ICE measure. At T2, which was on average a month after T1, participants were asked to report their demographic data and their unique T1 code. As in

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<sup>3</sup> Participants' demographics (age and sex) were not collected at this time-point.

Study 2, this unique code was used to match T1 data with T2 data without compromising the anonymity of participants' data. Participants were then asked to complete the ICE measure. Then, participants made allocations in three consecutive DGs.<sup>4</sup> After that, participants were asked if they had taken their participation in the study seriously. At the end of each phase, participants were thanked, debriefed and received their reward.

## 2.4.2 Results

### 2.4.2.1 Data treatment

Participants at T2 who took shorter or longer than 2.5 times the median response time ( $Mdn = 9.74$ ,  $N = 23$ ), had duplicated identification numbers ( $N = 4$ ) or who reported not being serious in how they answered the questionnaire ( $N = 2$ ) were eliminated from further data analysis. Data from 211 participants ( $M_{age} = 18.77$ ,  $SD = .91$ ) were retained. Of these, there were 153 participants ( $M_{age} = 18.54$ ,  $SD = .87$ ; 21 males, 131 females, and 1 undisclosed) who had also taken part at T1.<sup>5</sup>

The internal consistency of each emotion cluster at T1 was analysed using Cronbach's alpha. The three clusters are as follows: *anticipated pride* (pleased and proud; fair,  $\alpha = .89$ ; unfair,  $\alpha = .90$ ), *anticipated regret* (regretful and disappointed; fair,  $\alpha = .92$ ; unfair,  $\alpha = .93$ ) and *anticipated guilt* (guilty and ashamed; fair,  $\alpha = .93$ ; unfair,  $\alpha = .94$ ).

For the ICE measure completed at T2, internal consistency was again analysed using Cronbach's alpha. The results were as follows: *anticipated pride* (pleased and proud; fair,  $\alpha =$

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<sup>4</sup> As in Study 2, different conditions were used in this study, as will be reported in Chapter 5. For the purposes of the current chapter, the influence of these conditions is disregarded, and allocation behaviour is assessed by averaging across the three games.

<sup>5</sup> Although 153 participants took part at both T1 and T2, data showed that 153 participants completed the SVO measure but only 147 out of 153 participants completed the ICE measure.

.90; unfair,  $\alpha = .89$ ), *anticipated regret* (regretful and disappointed; fair,  $\alpha = .83$ ; unfair,  $\alpha = .92$ ) and *anticipated guilt* (guilty and ashamed; fair,  $\alpha = .72$ ; unfair,  $\alpha = .96$ ).

#### 2.4.2.2 The index of cooperative and competitive emotions (ICE)

ICE-Pride, ICE-Regret, and ICE-Guilt indices were created in a similar manner to how they were formed in Studies 1 and 2. The correlations between these measures are reported in Tables 2.10 and 2.11. There it can be seen that the measures were significantly correlated with each other, as they were Studies 1 and 2. As in Studies 1 and 2, the three subscales were averaged to form a single variable, ICE-PRG.

Table 2.10. *Correlations of ICE-Pride, ICE-Regret and ICE-Guilt at T1 (Study 3)*

	ICE Pride	ICE Regret	ICE Guilt
ICE Pride	-		
ICE Regret	<b>.553***</b> ( <i>n</i> = 136)	-	
ICE Guilt	<b>.512***</b> ( <i>n</i> = 143)	<b>.667***</b> ( <i>n</i> = 140)	-
<i>M</i>	1.345	1.142	1.974
<i>SD</i>	1.258	1.148	1.139

\*\*\* $p < .001$

Table 2.11. *Intercorrelations of ICE-Pride, ICE-Regret and ICE-Guilt at T2, N = 211 (Study 3)*

	ICE Pride	ICE Regret	ICE Guilt
ICE Pride	-		
ICE Regret	<b>.609**</b>	-	
ICE Guilt	<b>.564**</b>	<b>.545**</b>	-
<i>M</i>	1.356	.908	1.741
<i>SD</i>	1.268	.958	1.095

\*\* $p < .01$

### 2.4.2.3 Correlations over time and with allocation behaviour

Table 2.12 shows the correlations between ICE and SVO measured at T1 and ICE and allocation behaviour measured at T2. There it can be seen that ICE and SVO assessed at T1 were significantly associated with allocation behaviour at T2. Moreover, for the 147 participants who completed the ICE measure both at T1 and at T2, there was a substantial correlation between their ICE scores, showing that the emotions that they anticipated experiencing when making resource allocation decisions remained stable over time (see Figure 2.8).

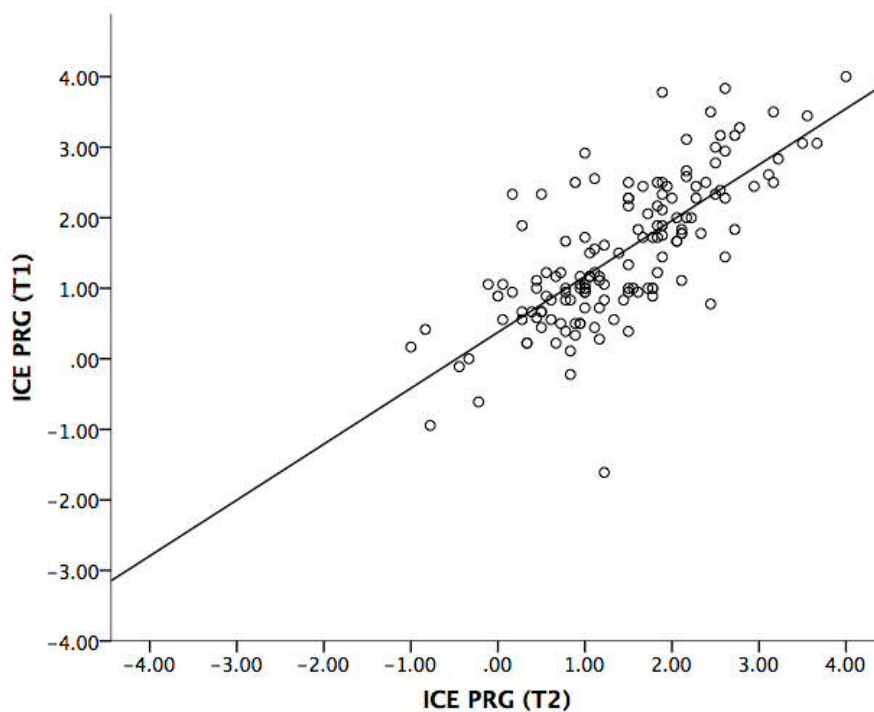


Figure 2.8. The significant positive correlation of ICE PRG taken at T1 and T2 (Study 3).

Table 2.12. Correlations of SVO Angle Score (T1) and ICE-PRG (T1), ICE-PRG (T2) scores and Average Tokens Allocated to the Receiver (T2) in Study 3

	SVO Angle Score (T1) ( <i>n</i> = 153)	ICE-PRG (T1) ( <i>n</i> = 147)	ICE-PRG (T2) ( <i>N</i> = 211)	Average Tokens to Receiver (T2) ( <i>N</i> = 211)
SVO Angle Score (T1)	-			
ICE-PRG (T1)	<b>.374***</b>	-		
ICE-PRG (T2)	<b>.356***</b>	<b>.735**</b>	-	
Average Tokens Allocated to Receiver (T2)	<b>.271**</b>	<b>.252**</b>	<b>.360***</b>	-
<i>M</i>	34.335	1.335	1.335	11.986
<i>SD</i>	8.052	.943	.943	3.993

\*\**p* < .01, \*\*\**p* < .001

## 2.5 General Discussion

The main purpose of the research reported in this chapter was to develop a measure of the emotions that individuals anticipate experiencing in social dilemmas involving the allocation of resources between self and other. The aim of Study 1 was to take initial steps in developing such a measure, which I called the Index of Cooperative and Competitive Emotions (ICE). The focus in Study 1 was on the internal structure of this measure, although I also examined the relationships between SVO, ICE, and actual allocation behaviour. The results showed that the ICE measure had satisfactory internal consistency, enabling me to create reliable indices of anticipated pride, regret, and guilt. It was also the case that these three indices were significantly interrelated, allowing me to create an overall index of cooperative and competitive emotions.

Furthermore, ICE scores and SVO scores were significantly related, suggesting that those who scored highly in prosociality as measured by SVO tend to also anticipate experiencing cooperative emotions when making resource allocation decisions. There was also a significant relationship between ICE and allocation behaviour, suggesting that the more cooperative emotions (e.g., pride about being fair and regret and guilt about being unfair) and the less competitive emotions (e.g., regret and guilt about being fair and pride about being unfair) individuals anticipate experiencing, the more tokens they allocate to others. On a broader level, this suggests that the kinds of emotion that people anticipate experiencing when making resource allocation decisions influences their allocation behaviour. This is in line with past studies showing that anticipated emotions guide behaviour (Baumeister et al., 2007).

On the basis of the results of Study 1, the ICE measure was refined and used in Study 2 to examine both its internal consistency and its relation to SVO and allocation behaviour. An additional feature of Study 2 was the fact that SVO was measured five months earlier on

average than the measures of ICE and allocation behaviour. The results of this study were consistent with those of Study 1 in showing good internal consistency of the ICE measure and significant relationships between ICE and SVO and between ICE and allocation behaviour. The fact that ICE was significantly related to SVO measured several months earlier suggests that the individual difference construct that is tapped by both SVO and ICE has reasonable temporal stability.

Study 3 directly examined the temporal stability of the ICE measure over an average of one-month period, as well as again examining its relationship with SVO and allocation behaviour. The fact that the ICE measure showed a high test-retest reliability is further evidence of the temporal stability of the underlying construct. The fact that the ICE scores significantly predicted allocation behaviour on average one month later is evidence of the predictive validity of the measure.

In summary, the ICE measure developed in the research reported in this chapter has been shown to be internally consistent and temporally stable; it was found to be significantly related to a conceptually related measure; and it was significantly related to behaviour measured at the same time or at a later point in time. This demonstrates the measure's reliability, construct validity, and predictive validity.

Although the results using the ICE measure were consistent across the three studies reported in this chapter, it should be noted that most of the participants in these studies were psychology undergraduate students (except for a few business students in the Study 1). Future studies should use the ICE measure to measure its validity using samples of participants with different background (e.g., non-student samples, or students with a different cultural background). These limitations are addressed in Chapters 3 and 4, where business students (Chapter 3) and Malaysians (both students and non-students; Chapter 4) completed the measure.



The main independent variable (IV), SVO, was defined as preferences for certain divisions of resources (Messick & McClintock, 1968) and was measured by the SVO-SM. The outcome or dependent variable (DV) was participants' actual allocation behaviour, which was measured using economic games. A possible limitation of using these two measures is that they are similar with respect to the type of behaviour that they assess. It could therefore be argued that there is a high degree of overlap between the IV and DV. However, the percentage of shared variance between SVO and allocation behaviour in this study was in fact quite low (25%). Thus, in practice there was not a large overlap between participants' SVO scores (IV) and allocation behaviour (DV) and there appears to be sufficient difference between preference for certain outcomes (as measured by SVO-SM) and actual allocation behaviour to reject the notion that the capacity of the SVO-SM measure to predict allocation behaviour is artificially inflated due to common method variance.

The choice of allocation behaviour in an economic game to assess prosocial behaviour was motivated by the fact that there is a sizeable body of previous research on the role of SVO and/or emotions in decision making using economic games (Balliet et al., 2009; Camerer, 2011; de Kwaadsteniet et al., 2006). Future research could examine other kinds of prosocial behaviour, such as measuring donations towards a charity organization (Van Lange, Bekkers, et al., 2007) or pro-environmental behaviours (Joireman, Lasane, Bennett, Richards, & Solaimani, 2001). In this way, such research could assess whether anticipated emotions mediate the relation between SVO and a wider range of prosocial behaviours, using more ecologically valid measures. Due to time constraints, I was not able to pursue this in the current thesis.

Past research has shown that SVO is a stable preference and that it predicts allocation behaviour (Messick & McClintock, 1968; Murphy et al., 2011; Van Lange et al., 1997). However, the SVO measures developed in the past (e.g. TDM and SVO-SM) took no account

of anticipated emotions. My argument is that anticipated emotions represent a psychological mechanism that can help to explain differences in preferences for resource allocation divisions. The ICE measure developed here supplements past SVO measures by taking anticipated cooperative and competitive emotions into account. Given that the ICE measure demonstrates good psychometric properties, later studies will examine more closely the relationship between SVO, anticipated emotions and allocation behaviour.

In sum, the fact that the ICE measure has good psychometric properties allows me to use the measure in subsequent studies to address the main research question of my thesis. In the next three empirical chapters, I used this measure to investigate whether anticipated emotions mediate the relation between SVO and allocation behaviour, and also to examine whether regulating these anticipated emotions moderates the relationship between SVO and allocation behaviour. In these later chapters, I will further explain how the ICE measure captures the relevance of anticipated cooperative and competitive emotions as the psychological mechanism underlying differences in SVO.

### 3 Chapter 3: Social Value Orientation and Anticipated Emotions in Resource Allocation Decisions

Previous studies have shown that individual differences in social value orientation (SVO) influence individuals' allocation behaviour (Balliet et al., 2009; Messick & McClintock, 1968). There is also a growing field of research on anticipated emotions and its influence on allocation behaviour (Mellers & McGraw, 2001; Van Der Schalk et al., 2012). For example, the more pride you anticipate about being fair, the more resources you share with another person; and the more pride you anticipate about being unfair, the less resources you share with another person (Van Der Schalk et al., 2012). To my knowledge, the influences of SVO and anticipated emotions on allocation behaviour have thus far been studied separately. If both SVO and anticipated emotions predict allocation behaviour, what is the relation between these two constructs, and how do they jointly determine allocation behaviour? In this chapter, I address how individual differences in allocation behaviour can be explained in terms of anticipated emotions.

According to Messick and McClintock (1968), SVO refers to stable individual preferences in allocating resources between oneself and another person. Van Lange et al. (1997) proposed a measure of SVO and argued that it could be used to classify people into one of three orientations: prosocial, individualistic and competitive. *Prosocials* prefer to minimize the difference in outcomes between themselves and others (*'inequality averse' prosocials*) or to maximize both their own and others' outcomes (*'joint gain maximizer' prosocials*). *Individualists* prefer to maximize their own payoff. *Competitive* individuals prefer to maximize the difference between their own and others' outcomes by having a higher payoff than the other person.

Previous research has established that SVO plays an important role in predicting allocation behaviour. For example, prosocials have been found to be more cooperative than

proselfs in a public goods dilemma (De Cremer & Van Lange, 2001). SVO has also been shown to predict whether individuals donate to environmental organizations as a pro-environmental initiative (Joireman et al., 2001).

According to Baumeister, Vohs, DeWall and Zhang (2007), it is the *anticipation* of emotional outcomes that shapes an individual's decision making, in such a way that when an individual anticipates a negative emotion after a particular decision, he or she is likely to make a different decision in order to avoid this anticipated negative emotion (Baumeister et al., 2007). Loewenstein and Lerner (2003) have also argued that the predicted emotional consequences of decisions shape decision making because people choose outcomes that will increase the ratio of positive to negative feelings. Consistent with this argument, Kruger, Wirtz, and Miller (2005) found that students were likely to avoid changing their answers in a multiple choice test in order to avoid experiencing regret when discovering that their initial answer was correct. This was the case even when changing an answer would have increased the probability of getting it correct. Students anticipated that they would experience more regret if they changed their initial answer to an incorrect one than if they did not change their answer and their initial answer proved to be wrong.

In the context of resource allocation decisions, Van Der Schalk and colleagues (2012) found that people who anticipated pride about acting fairly allocated more resources to another person. Similarly, people who anticipated regret about acting unfairly allocated more resources to another person. In both cases, the anticipation of emotion seems to have shaped the decision about resource allocation, with individuals acting in a way that increased pride and reduced regret. Consistent with Baumeister and colleagues' (2007) argument, it is the anticipation of emotional outcomes that appears to have shaped decision making.

The literature reviewed in Chapter 1 and discussed above shows that the relation between SVO and allocation behaviour is well-established, but because SVO is often simply

measured by having participants choose between different divisions of resources, there is little insight into the psychological processes that are responsible for differences in these preferences (see the introduction to Chapter 2). SVO has been shown to be linked with emotions. For example, prosociality is positively related to empathy and sympathy (Eggum et al., 2011; Eisenberg & Miller, 1987). Furthermore, prosocials have been found to be more concerned about others and to have a higher attachment to others, which suggests that – to some degree – feelings such as empathy and concern for others may be reflected in their preference for being equal in resource allocation (Van Kleef & Van Lange, 2008). This suggests that prosocials are more likely than proselves to experience ‘cooperative’ emotions such as pride when dividing resources equally, and regret and guilt when dividing resources unequally. It also suggests that the differential anticipation of such emotions may be the reason why prosocials and proselves make different resource allocation decisions.

At the same time, it has been shown that anticipated emotions are related to allocation behaviour in such a way that cooperative emotions (e.g., pride about being fair; regret and guilt about being unfair) increase fairness, whereas competitive emotions (e.g., pride about being unfair; regret and guilt about being fair) decrease fairness. The studies reported in this chapter are designed to test the proposition that anticipated emotions are a psychological mechanism that drives these differences between prosocials and proselves in allocation behaviour.

In order to investigate this proposition, I investigated the relation between SVO, anticipated emotions and allocation behaviour. The fact that previous research has shown that prosocials have greater concern for others led me to predict that prosocials would anticipate more cooperative emotions (pride about acting fairly and regret and guilt about acting unfairly) and less competitive emotions (pride about being unfair and regret and guilt about being fair). Proselfs, on the other hand, would anticipate more competitive emotions and less

cooperative emotions. I also hypothesized that the anticipated emotions would mediate the relation between SVO and allocation behaviour. In particular, prosocials would anticipate more cooperative emotions and less competitive emotions, which would likely lead to a fairer distribution of tokens. On the other hand, proselves would anticipate less cooperative emotions and more competitive emotions, which would likely lead to a less fair distribution of tokens.

To test the above hypotheses, two studies were conducted, both of which were approved by the Ethics Committee of Cardiff University's School of Psychology. In the first of these studies, participants were Psychology students. The second study was a replication of Study 1 conducted in another population in order to investigate the robustness of the findings. In each of the two studies reported below, I measured SVO using the 'slider' measure (Murphy et al., 2011), anticipated emotions using the ICE measure as described in Chapter 2; and resource allocation decisions were assessed using the Ultimatum Game (UG) (Güth et al., 1982) and the Dictator Game (DG) (Kahneman et al., 1986). Both games entail dividing resources (e.g., tokens or money) between self (allocator) and another person (recipient). The key difference is that the UG involves a strategic component because the recipient can reject the division proposed by the allocator, whereas in the DG, the recipient has to accept the division proposed by the allocator.

### **3.1 Study 1**

#### **3.1.1 Method**

##### **3.1.1.1 Design and participants**

In Study 1, participants were 128 students (114 female, 14 male;  $M_{age} = 18.95$ ,  $SD = 2.15$ ) recruited from the School of Psychology, Cardiff University. In exchange for their participation, participants were given two course credits and were automatically included in a lottery worth up to a maximum of £30 in Amazon vouchers. The lottery of £30 reflected their

allocation made in either the DG or the UG. Further explanation of how these lotteries were conducted is given below. Data were collected online using Qualtrics.

### 3.1.1.2 Materials

**Index of Cooperative and Competitive Emotions (ICE) Measure.** This measure is the same as the one that was developed in Chapter 2 (see Appendices B). There were two versions of the measure, one reflecting the DG and the other reflecting the UG. In the items reflecting the UG, respondents are reminded that the recipient is able to reject the allocations made in the scenario, which would leave both allocator and recipient with no tokens. If the recipient accepts the proposed allocation, then both the allocator and recipient will get the tokens allocated in the scenario. For the items reflecting the DG, respondents are told that the receivers cannot reject the allocations made, and have to accept the allocation regardless of the amount allocated. For both the UG and DG versions, the measure consists of six allocation scenarios representing fair (15:15; 18:18; 21:21) and unfair (20:10; 24:12; 28:14) divisions of tokens. Participants were asked to imagine that they had made a specific division of tokens between themselves and another anonymous person. For example, in one item participants were asked to imagine that there are 30 tokens at stake, and that the participant keeps 20 tokens for him/herself and give 10 tokens to the anonymous person. Participants were asked to rate how they would feel about the allocation in each scenario, using a scale of 1 (not at all) to 5 (very much). The six emotions that were assessed were *pleased*, *proud*, *regretful*, *guilty*, *ashamed* and *disappointed*. These emotions were chosen to capture three emotion constructs: pride, regret and guilt. The shared positive valence of the terms *pleased* and *proud* were clustered together and index **pride** (Tracy & Robins, 2007; Van Osch et al., 2018); the shared counterfactual character of *regretful* and *disappointed* (where the person experiencing the emotion can imagine a better state of affairs if he or she had acted or chosen differently) were clustered together and index **regret** (Zeelenberg & Pieters, 2007); and the

shared self-blame character of the terms *guilty* and *ashamed* (where the person appears to feel that he or she is responsible for bringing about an unwanted state of affairs) were clustered together and index *guilt* (Haidt, 2003; Niedenthal et al., 1994). These construction of these indexes resulted from the factor analyses reported in Chapter 2.

**Social Value Orientation.** We assessed participants' SVO using the SVO Slider Measure (SVO-SM) (Murphy et al., 2011). This contains 15 items and each item has 9 allocation options. Participants choose their most preferred allocation between themselves and the recipient (an anonymous person). For example, participants may choose an option representing 75 tokens allocated for themselves and 75 tokens for the anonymous person. From participants' choices, an SVO 'angle' can be computed. Larger angles reflect greater prosociality. Specifically, altruists would have an angle greater than  $57.15^\circ$ ; prosocials would score angles between  $22.45^\circ$  and  $57.15^\circ$ ; individualists would have angles between  $-12.4^\circ$  and  $22.45^\circ$ ; and competitive individuals would have an angle less than  $-12.04^\circ$ . In the current research, I used the angle score as a continuous variable.

**Allocation behaviour.** The Dictator Game (DG; Kahneman et al., 1986) and the Ultimatum Game (UG; Güth et al., 1982) were used to measure allocation behaviour. In both games, the participant played the role of allocator and was given a total of 30 tokens to divide between him/herself and the anonymous other. Participants were also asked to state their minimum offer that they would accept if they were in the role of the recipient in the UG. The participants were told that the tokens had real monetary value. At the end of the study, two pairs of participants were randomly selected and were paid out according to the allocations made in the economic games, with each token being worth £1.00. For the pair of participants who were chosen under the DG, the payout was based simply on the allocator's proposed allocation. However, for the pair of participants who were chosen under the UG, the minimum that the player stated that he/she would accept as recipient was used to determine



the outcome of the UG. For example, if the participant selected as allocator had allocated  $20_{\text{allocator}}:10_{\text{recipient}}$ , and the minimum acceptable offer that had been indicated by the recipient was  $15_{\text{allocator}}:15_{\text{recipient}}$ , then the pair would receive nothing; but if the minimum acceptable offer indicated by the recipient was  $25_{\text{allocator}}:5_{\text{recipient}}$ , then the pair would receive the amounts proposed by the allocator.

### 3.1.1.3 Procedure

Participants first completed a consent form. After participants gave their consent to participate in the study, they completed a demographic questionnaire (measuring age, gender, fluency in English, course and year of study). Next, participants completed the two ICE measures. Order of presentation of these two measures was counterbalanced. The six allocation scenarios in each set were presented in a randomized order. Next, participants were asked to make their own allocations using two economic games, the DG and the UG (in counterbalanced order). Participants acted as the allocator, allocating tokens between him/herself and an anonymous other. Once they had made their allocations, they were presented with an attention check that tested whether participants were actually paying attention to the content of the questionnaire. The attention check consists of a question that asked participants to skip onto the next phase of the questionnaire. If participants clicked on any of the response options in the attention check question, this would show that they had not read the question carefully and that meant they failed the attention check. Next, participants completed the SVO-SM. Participants were then required to state the minimum offer that they would accept in the UG if they were in the role of the recipient. Next, participants were asked if they had taken their participation in the study seriously. Lastly, participants were thanked, debriefed and given their reward for participation.

### 3.1.2 Results

#### 3.1.2.1 Data treatment

Data from 118 participants (105 female, 13 male;  $M_{age} = 18.95$ ,  $SD = 2.22$ ) were retained for analysis. Data from participants who failed the attention check ( $N = 7$ ) or whose response time was longer than 2.5 times the median response time ( $Mdn = 14.65$ ;  $N = 3$ ) were excluded from analyses. Figure 3.1 shows the range of SVO scores. Note that the majority of the participants scored relatively high, showing that the sample was generally prosocial. For the DG version of the anticipated emotion measure, the anticipated emotion items in the fair and unfair allocation behaviour conditions were combined to create an *anticipated pride* scale (pleased and proud; fair,  $\alpha = .90$ ; unfair,  $\alpha = .92$ ), an *anticipated regret* scale (regretful and disappointed; fair,  $\alpha = .90$ ; unfair,  $\alpha = .91$ ) and an *anticipated guilt* scale (guilty and ashamed; fair,  $\alpha = .91$ ; unfair,  $\alpha = .96$ ). For the UG version of the anticipated emotion measure, the anticipated emotion items in the fair and unfair conditions were also combined to create an *anticipated pride* scale (pleased and proud; fair,  $\alpha = .89$ ; unfair,  $\alpha = .74$ ), an *anticipated regret* scale (regretful and disappointed; fair,  $\alpha = .89$ ; unfair,  $\alpha = .89$ ) and an *anticipated guilt* scale (guilty and ashamed; fair,  $\alpha = .92$ ; unfair,  $\alpha = .96$ ).

ICE scores were calculated as described in Chapter 2. For each of the three subscales (pride, regret, guilt), a difference score was calculated by subtracting responses on the fair items from responses on the unfair items (for regret and guilt) or vice versa (for pride) in such a way that positive scores reflected more cooperative emotions, zero reflected the fact that there was no difference in the anticipation of emotions when making equal or unequal allocations, and a negative score represented competitive emotions. This was done separately for each version of the ICE measure (UG and DG). Finally, I averaged the three ICE scores for each game to form DG-ICE-PRG and UG-ICE-PRG. The distributions of these final ICE scores showed that there were relatively few scores below the mid-point of the scale, with the

majority of participants expressing more cooperative emotions than competitive emotions (see Figures 3.2 and 3.3).

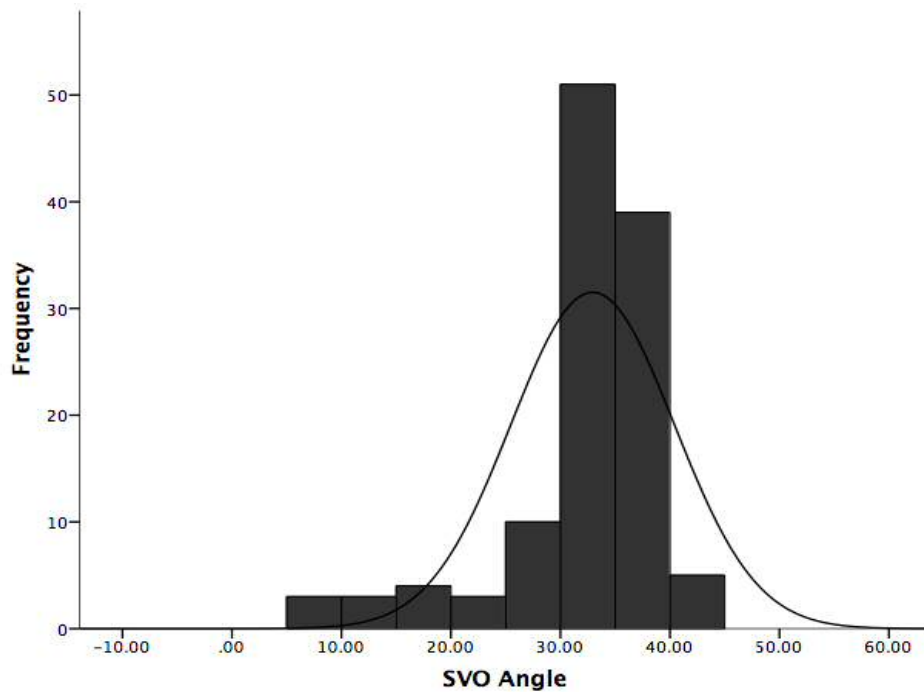


Figure 3.1. Distribution of participants' SVO scores (Study 1).

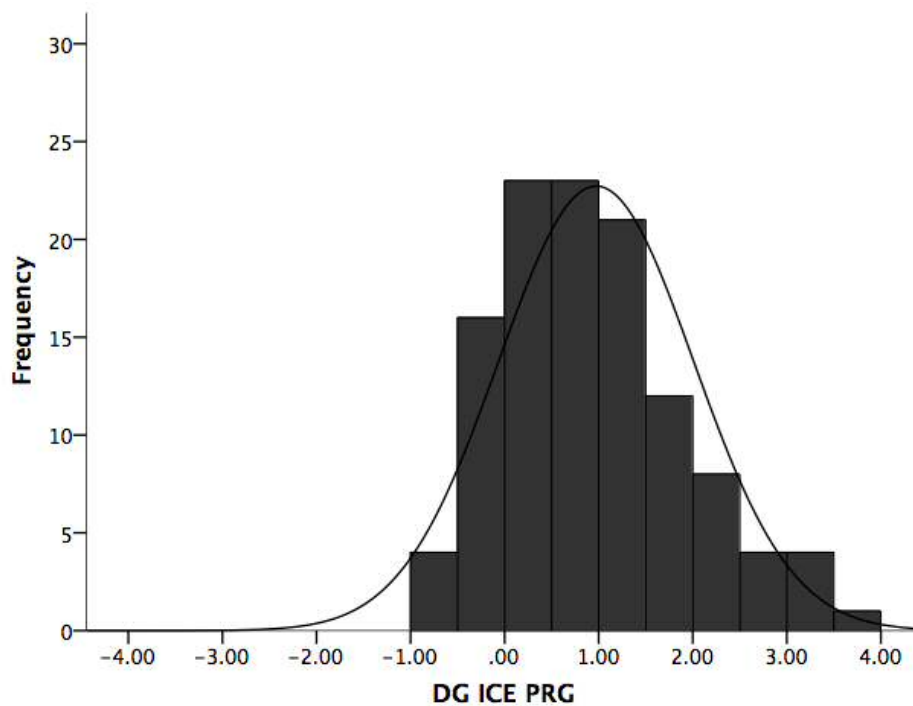


Figure 3.2. Distribution of ICE-PRG scores relating to the Dictator Game (Study 1).

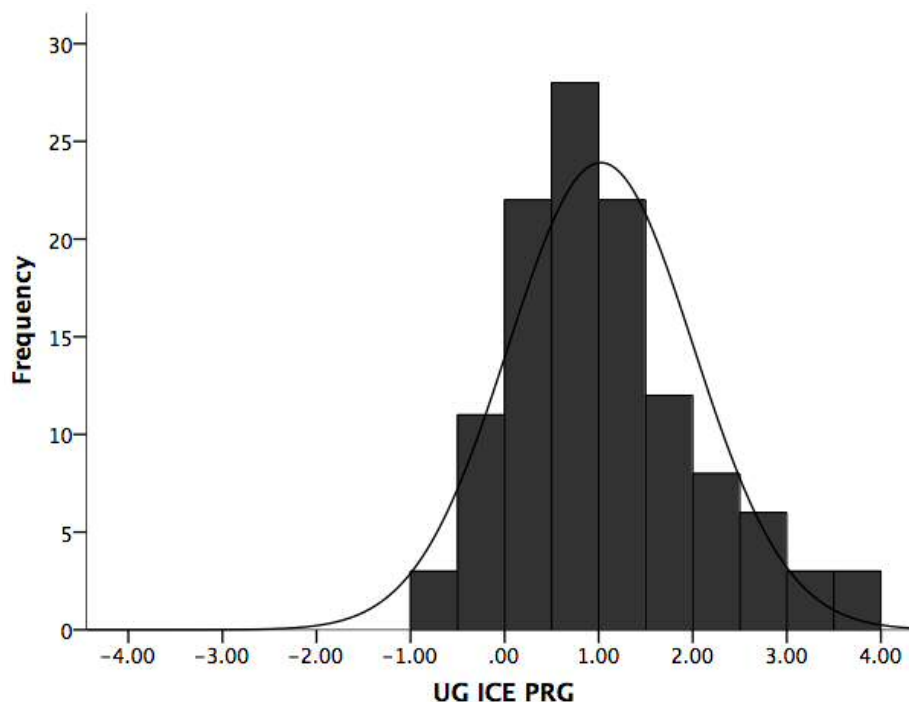


Figure 3.3. Distribution of ICE-PRG scores relating to the Ultimatum Game (Study 1).

### 3.1.2.2 SVO, Allocation Behaviour and Anticipated Emotions

The means, standard deviations of the constructs of interest and the correlations between them are presented in Table 3.1. All correlations were positive and highly significant. Exploration of the allocation data showed that the average tokens allocated to the anonymous other (the receiver) in each DG and UG were not normally distributed (Kolmogorov-Smirnov:  $D_{DG}(102) = 3.64$ ,  $p < .001$  and  $D_{UG}(102) = 4.20$ ,  $p < .001$ ). Therefore, I decided to dichotomize allocation scores, classifying offers  $\geq 15$  as fair and offers  $\leq 14$  as unfair. I then examined whether anticipated emotions mediated the relation between SVO and allocation behaviour. Using the PROCESS macro in SPSS, I ran two mediation analyses with SVO as the predictor, ICE-PRG as a mediator and the dichotomized averaged tokens allocated towards the receiver in DG and UG, respectively, as the outcome variable.

The mediation analyses for both games showed that the total effects of SVO on tokens allocated in both DG (see Figure 3.4) and UG (see Figure 3.5) were significant and

positive. Consistent with the correlation analyses reported in Table 3.1, SVO was a significant and positive predictor of ICE-PRG for both games,  $b_{DG} = .07$ , 95% CI [.048, .098] and  $b_{UG} = .06$ , 95% CI [.040, .088], and ICE-PRG was significant and a positive predictor of allocations in both games,  $b_{DG} = .67$ , 95% CI [.057, 1.275] and  $b_{UG} = .83$ , 95% CI [.202, 1.464]. More importantly, the indirect effects of SVO on allocation behaviour through ICE-PRG were significant in both games,  $b_{DG} = .05$ , 95% CI [.001, .113] and  $b_{UG} = .05$ , 95% CI [.012, .114]. However, the direct effect of SVO on allocation remained significant,  $b_{DG} = .25$ , 95% CI [.080, .428] and  $b_{UG} = .09$ , 95% CI [.007, .166], suggesting that ICE-PRG partially (rather than fully) mediated the effect of SVO and allocation behaviour. Post-hoc power analyses on both mediation analyses were carried out using online software called MedPower (Kenny, 2017, February). The results are summarised in Tables 3.2 and 3.3, where it can be seen that the achieved power was satisfactory. Given this, I aimed to recruit a comparable number of participants for Study 2.

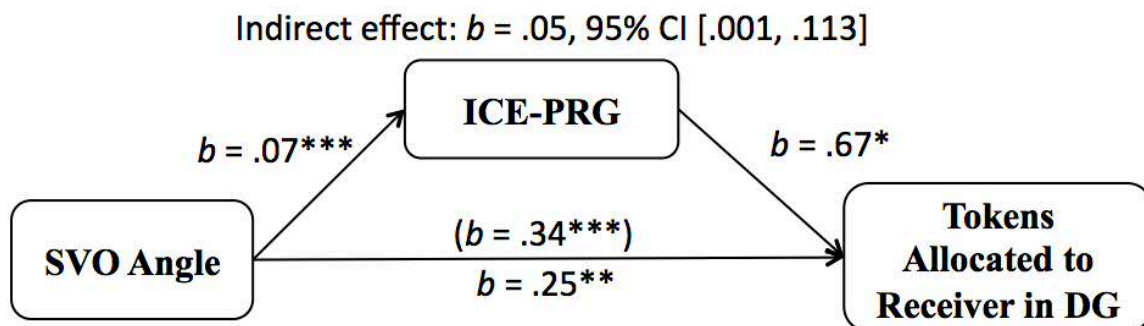


Figure 3.4. Indirect effect of Social Value Orientation (SVO) on dichotomized averaged tokens allocated to the receiver in the Dictator Game (DG) through ICE-PRG. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (Study 1).

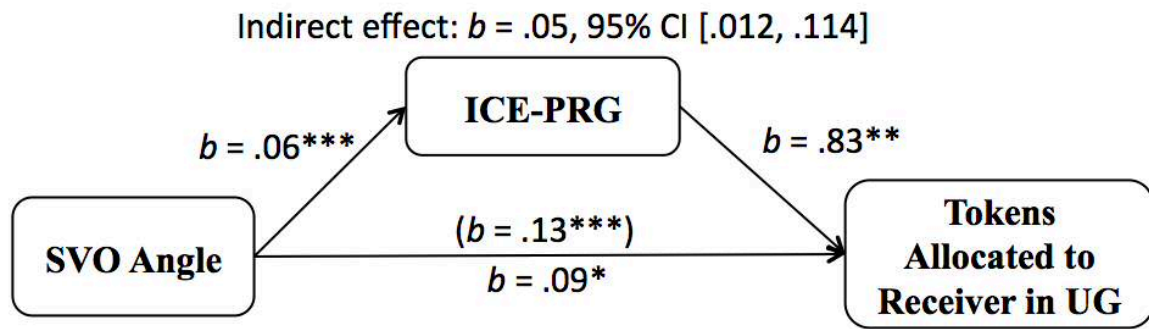


Figure 3.5. Indirect effect of Social Value Orientation (SVO) on dichotomized averaged tokens allocated to the receiver in the Ultimatum Game (UG) through ICE PRG. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (Study 1).

Table 3.1. *Correlations between social value orientation, cooperation and competitive emotions and tokens allocated in the Dictator and Ultimatum Game (Study 1)*

	SVO Angle	DG ICE PRG	UG ICE PRG	DG tokens allocated to receiver	UG tokens allocated to receiver
SVO Angle	-				
DG-ICE-PRG	<b>.511***</b>	-			
UG-ICE-PRG	<b>.403***</b>	<b>.806***</b>	-		
DG tokens allocated	<b>.454***</b>	<b>.396***</b>	<b>.454***</b>	-	
UG tokens allocated	<b>.393***</b>	<b>.424***</b>	<b>.406***</b>	<b>.610***</b>	-
<i>M</i>	32.94	.97	1.02	11.74	13.51
<i>SD</i>	7.47	1.03	.98	4.73	3.10

Note.  $N = 118$

\*\*\*  $p < .001$  (2-tailed).

Table 3.2. *Post-hoc power analysis for the mediation of ICE-PRG on the relationship of Social Value Orientation (SVO) and dichotomized averaged tokens allocated to the receiver in the Dictator Game (DG).*

<b>Effect</b>	<b>Partial r</b>	<b>Power</b>
Total effect	.37	.98
SVO on ICE-PRG	.36	.97
ICE-PRG on allocation behaviour in DG	.28	.82
Direct effect	.27	.79
Indirect effect		.79

*Note.* Alpha for all power calculations set to .05.  $N = 102$ .

Table 3.3. *Post-hoc power analysis for the mediation of ICE-PRG on the relationship of Social Value Orientation (SVO) and dichotomized averaged tokens allocated to the receiver in the Ultimatum Game (UG).*

<b>Effect</b>	<b>Partial r</b>	<b>Power</b>
Total effect	.36	.97
SVO on ICE-PRG	.35	.96
ICE-PRG on allocation behaviour in UG	.27	.79
Direct effect	.27	.79
Indirect effect		.76

*Note.* Alpha for all power calculations set to .05.  $N = 102$ .



### 3.1.3 Discussion

The findings of Study 1 show that the more prosocial an individual is, the more cooperative emotions (pride about being fair, regret and guilt about being unfair) and the less competitive emotions (pride about being unfair, regret and guilt about being fair) s/he anticipates experiencing. With regard to allocation behaviour, prosocials were more generous than proselfs. Both of these results are consistent with the SVO literature discussed earlier.

There was also evidence that anticipated emotions at least partly mediated the relation between SVO and allocation behaviour in Study 1. The significant indirect effects observed in the mediation analyses suggest that differences in anticipated emotion contribute to the explanation of the relation between SVO and allocation behaviour. This shows that anticipated emotions give an insight into the psychological processes involved in the differences in preferences for divisions between resources as measured by SVO. It would seem that SVO predicts allocation behaviour because differences in SVO are associated with differences in anticipated emotion, which in turn are strongly predictive of allocation behaviour. This shows that it is not simply a generalised preference for equal versus unequal allocations that distinguishes proselfs from prosocials. Instead, individuals with a preference for equal allocations think that they would anticipate more cooperative emotions (pride about being fair) compared to competitive emotions (regret and guilt about being unfair) if they were to make equal allocations. However, people with a preference for unequal allocations favouring the allocator think that they would anticipate more competitive emotions as compared to cooperative emotions if they were to make unequal allocations.

However, it is worth noting that the sample used in the present study consisted mainly of participants who were medium or high in prosociality (whether this was assessed by SVO or by the ICE measure). Thus, in a follow-up study, one of my aims was to recruit a sample of participants that was likely to include more individuals with SVO and ICE scores on the

proself/competitive side of the midpoint. Van Lange, Schippers, and Balliet (2011) found that psychology students were more likely to be prosocial (57% prosocial) than business students (36% prosocial), presumably reflecting the nature of the subject they are studying. Among business or economics students, there were more individualists (47%) and competitors (17%), as compared to psychology students, where there was a lower percentage of both individualists (37%) and competitors (6%) (Van Lange et al., 2011). Thus, business students were recruited for Study 2. As well as allowing me to test whether the findings observed in Study 1 are replicable, this also enabled me to explore whether there are any differences between psychology and business students in SVO, anticipated emotions and allocation behaviour.

## 3.2 Study 2

### 3.2.1 Method

#### 3.2.1.1 Design and participants

In Study 2, participants were 124 business students (74 female, 49 male, 1 undisclosed;  $M_{age} = 21.87$ ,  $SD = 2.95$ ) recruited from Cardiff University's Business School. Participants were rewarded £3 worth of Amazon vouchers for their participation and were automatically entered into a lottery worth up to a maximum of a further £30 in Amazon vouchers. Two pairs of participants were randomly chosen as the lottery winners. The nature of the lottery and the manner in which the distributions were determined were identical to the procedure used in Study 1. Study 2 was a self-administered questionnaire that was presented through the Qualtrics platform.

#### 3.2.1.2 Materials

With the exception noted below, all materials used in Study 2 were similar to those used in Study 1. However, in Study 2 I added the short form of the Need for Affect (NFA)

measure (Appel, Gnambs, & Maio, 2012) to the battery of measures that were completed. This was added as a filler task to achieve greater temporal separation between the three sets of measures that all involved the allocation of resources: the SVO-SM, the ICE measure and the economic games. The NFA measures the tendency of the individual to avoid or approach emotion-inducing situations/activities and consists of 10 items. These are answered on a 7-point Likert scale running from -3 (strongly disagree) to 3 (strongly agree). Because this measure was intended to serve only as a filler task, it was not included in any of the analyses reported below and will not be discussed further.

### **3.2.1.3 Procedure**

The procedure for Study 2 differed slightly from that used in Study 1. After giving consent, participants completed the SVO-SM (Murphy et al., 2011). Next, they were presented with the short form of the Need for Affect measure (Appel, Gnambs, & Maio, 2012). Then, participants completed the DG and UG versions of the ICE measure (in a counterbalanced order) and made allocations in both the DG and UG (again, in a counterbalanced order). After that, participants completed a similar attention check that was presented in Study 1. Participants were then required to state the minimum offer that they would accept in the UG if they were in the role of the recipient. Before the debrief, participants were asked if they had taken their participation in the study seriously. Lastly, participants were thanked, debriefed and received their reward.

## **3.2.2 Results**

### **3.2.2.1 Data treatment.**

For Study 2, data from 93 participants were retained for analysis (59 female, 33 male;  $M_{age} = 21.80$ ,  $SD = 3.13$ ). This is because data from participants who failed the attention check ( $N = 13$ ), or whose response time was longer than 2.5 times the median response time ( $Mdn = 20.33$ ;  $N = 16$ ) or shorter than 2.5 times the median response time ( $N = 2$ ) were

excluded from the analyses. The distribution of the participants' SVO scores is shown in Figure 3.6. There it can be seen that there was a greater spread of scores than was the case in Study 1, with fewer participants clustered at the prosocial end of the scale.

For exploratory purposes, I examined the correlations between participants' NFA scores, SVO scores and allocation behaviour in both the UG and DG. The NFA score was calculated by subtracting the emotion avoidance score (the aggregated score of the items related to avoiding emotion-inducing situations) from the emotion approach score (the aggregated score of the items related to approaching emotion-inducing situations) (Appel et al., 2012). The Spearman correlation between the NFA score and SVO score was not significant,  $r_s(93) = .094, p = .368$ . Similarly, the Spearman correlations between NFA and allocation behaviour in both the UG ( $r_s(93) = .025, p = .811$ ) and the DG ( $r_s(93) = .040, p = .705$ ) were not significant. The Spearman correlations between NFA and anticipated emotions in both the UG ( $r_s(92) = .093, p = .378$ ) and the DG ( $r_s(93) = .011, p = .919$ ) were also not significant. Due to the non-significant correlations between NFA and SVO, allocation behaviour and also anticipated emotions, further analyses using the NFA measure were not pursued.

The anticipated emotion items in the fair and unfair allocation behaviour conditions the DG version were combined to create an *anticipated pride* scale (pleased and proud; fair,  $\alpha = .93$ ; unfair,  $\alpha = .94$ ), an *anticipated regret* scale (regretful and disappointed; fair,  $\alpha = .93$ ; unfair,  $\alpha = .91$ ), and an *anticipated guilt* scale (guilty and ashamed; fair,  $\alpha = .93$ ; unfair,  $\alpha = .96$ ). Following a similar procedure, the anticipated emotions items in the UG version were clustered in the same way to make an *anticipated pride* scale (pleased and proud; fair,  $\alpha = .93$ ; unfair,  $\alpha = .80$ ), an *anticipated regret* scale (regretful and disappointed; fair,  $\alpha = .93$ ; unfair,  $\alpha = .95$ ), and an *anticipated guilt* scale (guilty and ashamed; fair,  $\alpha = .95$ ; unfair,  $\alpha = .94$ ).

These anticipated emotion scores were integrated in the same way as in Study 1: I formed ICE-pride, ICE-regret, ICE-guilt scores by calculating a difference score between responses to the fair and unfair items and then averaged the three subscales into a single ICE-PRG score. This was done separately for the DG and UG versions. Again, a positive score reflects the anticipation of more cooperative emotions, zero reflects the fact that there is no difference in the anticipation of emotions when making fair or unfair allocations, and a negative score represents the anticipation of more competitive emotions. The distributions of scores on each ICE-PRG measure (one for the DG, one for the UG) are shown in Figures 3.7 and 3.8.

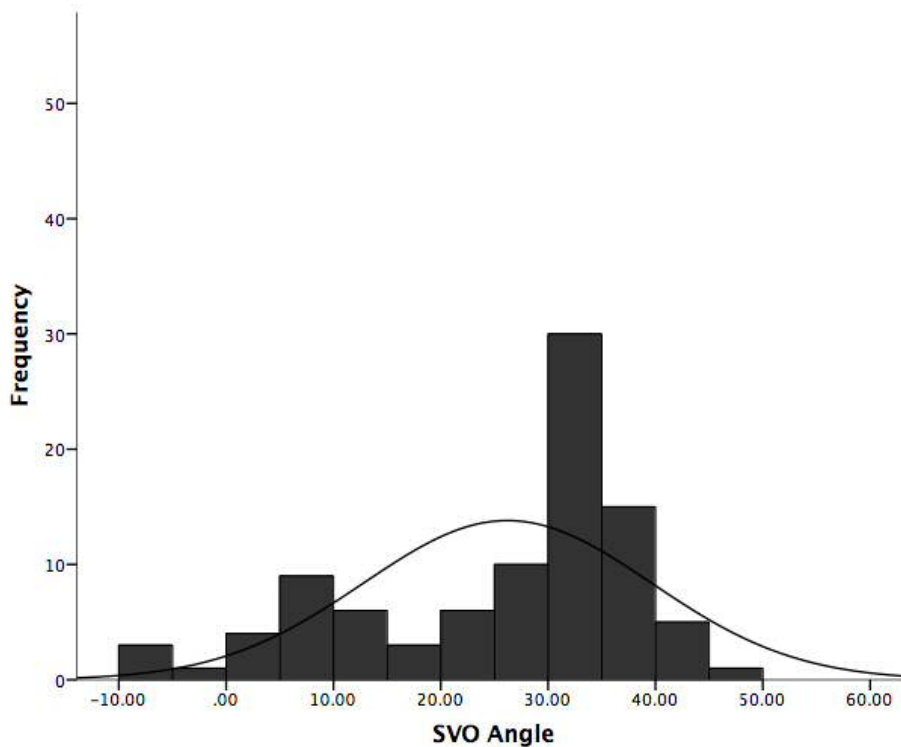


Figure 3.6. Distribution of participants' Social Value Orientation (SVO) Angle (Study 2).

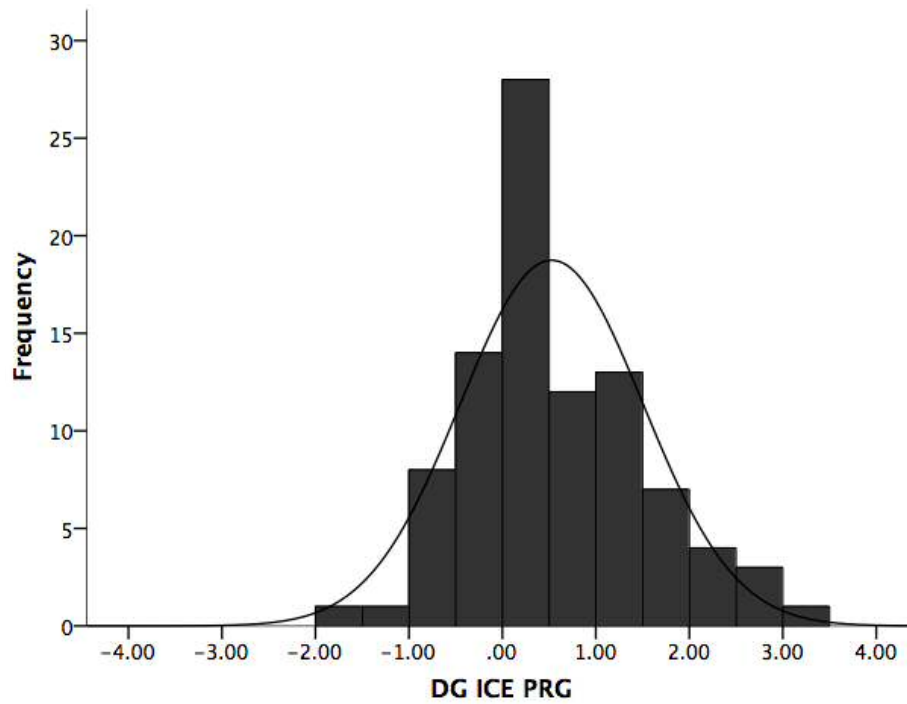


Figure 3.7. Distribution of ICE-PRG scores relating to the Dictator Game (Study 2).

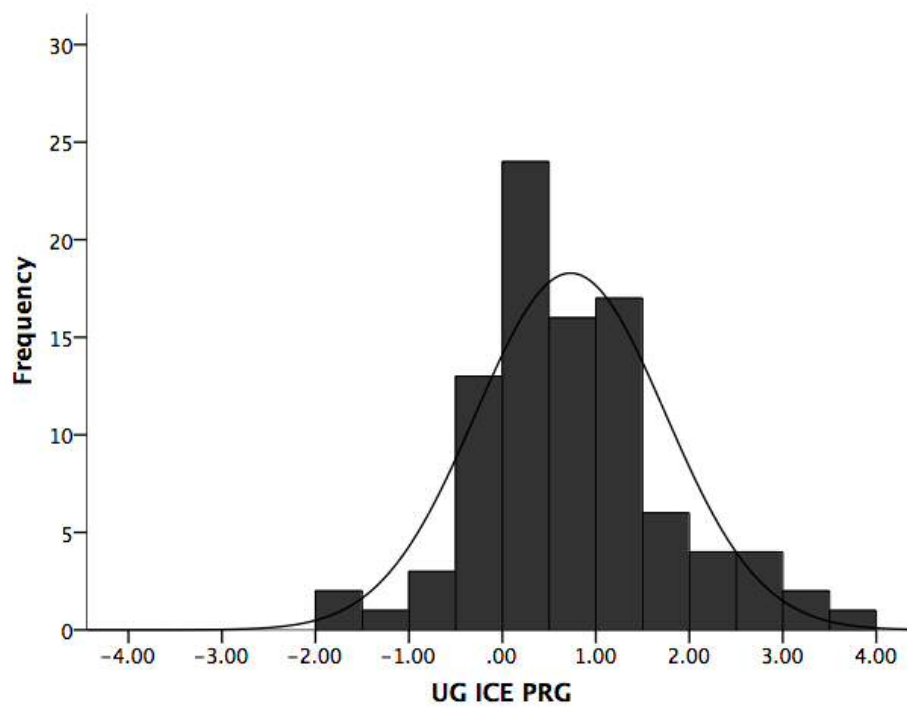


Figure 3.8. Distribution of ICE-PRG scores relating to the Ultimatum Game (Study 2).

### 3.2.2.2 SVO, Allocation Behaviour and Anticipated Emotions

The means, standard deviations of the constructs of interest and the correlations between them are presented in Table 3.4. Similar to Study 1, all correlations were positive and highly significant. Again, I examined whether anticipated emotions mediated the relation between SVO and allocation behaviour. Using the PROCESS macro in SPSS, I ran two mediation analyses with SVO as the predictor, ICE-PRG as a mediator and the dichotomized average number of tokens allocated to the receiver in the DG and UG, respectively, as the outcome variable. The outcome variable was dichotomized because the average numbers of tokens allocated to the receiver in both the DG and the UG were not normally distributed (Kolmogorov-Smirnov:  $D_{DG}(93) = 2.12, p < .001$  and  $D_{UG}(93) = 3.06, p < .001$ ). Therefore, offers  $\geq 15$  were classified as fair and offers  $\leq 14$  were classified as unfair.

Table 3.4. *Correlations between social value orientation, cooperation and competitive emotions and tokens allocated in the Dictator and Ultimatum Game (Study 2)*

	SVO Angle	DG ICE PRG	UG ICE PRG	DG tokens allocated to receiver	UG tokens allocated to receiver
SVO Angle	-				
DG-ICE-PRG	<b>.359***</b>	-			
UG-ICE-PRG	<b>.283***</b>	<b>.725***</b>	-		
DG tokens allocated to receiver	<b>.387***</b>	<b>.445***</b>	<b>.325***</b>	-	
UG tokens allocated to receiver	<b>.364***</b>	<b>.385***</b>	<b>.346***</b>	<b>.485***</b>	-
<i>M</i>	26.22	.53	.73	11.52	13.59
<i>SD</i>	13.43	.98	1.01	4.58	3.62

*Note.* The sample size for SVO Angle, UG ICE PRG, tokens allocated to the receiver in both DG and UG are all  $n = 93$ . However, the sample size for DG ICE PRG is  $n = 92$ .

\*\*\*  $p < .001$  (2-tailed).



The mediation analyses for both games showed that the total effect of SVO on tokens allocated in both the DG (see Figure 3.9) and the UG (see Figure 3.10) was positive and significant. Consistent with the correlation analyses reported above, SVO was a positive and significant predictor of ICE-PRG in both games,  $b_{DG} = .02$ , 95% CI [.010, .338] and  $b_{UG} = .02$ , 95% CI [.007, .031], and ICE-PRG was a positive and significant predictor of allocations in both games,  $b_{DG} = .93$ , 95% CI [.002, .337] and  $b_{UG} = 1.05$ , 95% CI [.343, 1.758]. More importantly, the indirect effect of SVO on allocation behaviour through ICE-PRG was significant in both games,  $b_{DG} = .02$ , 95% CI [.007, .044] (see Figure 3.9) and  $b_{UG} = .02$ , 95% CI [.007, .044] (see Figure 3.10). However, the direct effect of SVO on allocation remained significant,  $b_{DG} = .03$ , 95% CI [.003, .065] and  $b_{UG} = .04$ , 95% CI [.012, .071], indicating that ICE-PRG partially (rather than fully) mediated the effect of SVO and allocation behaviour.

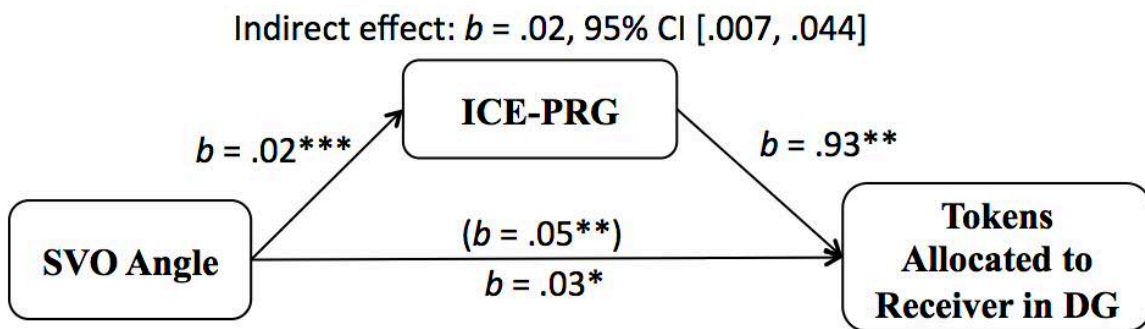


Figure 3.9. Indirect effect of Social Value Orientation (SVO) on dichotomized averaged tokens allocated to the receiver in the Dictator Game (DG) through ICE PRG. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (Study 2).

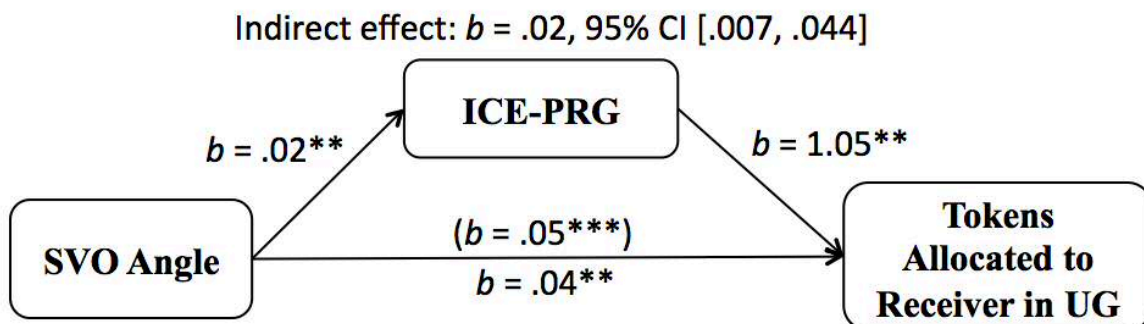


Figure 3.10. Indirect effect of Social Value Orientation (SVO) on dichotomized averaged tokens allocated to the receiver in the Ultimatum Game (UG) through ICE PRG. \*\*  $p < .01$ , \*\*\*  $p < .001$  (Study 2).

### 3.2.2.3 Psychology vs. Business Students

Using *t*-tests, I compared whether the psychology and business students differed in their SVO. The results showed that, as expected, psychology students ( $M = 32.94$ ,  $SD = 7.47$ ) were significantly more prosocial than their business student counterparts were ( $M = 26.22$ ,  $SD = 13.43$ ),  $t(135.93) = 4.33$ ,  $p < .001$ .

Next, I conducted *t*-tests examining differences between the two groups with respect to their anticipated emotions in the DG (DG-ICE-PRG) and the UG (UG-ICE-PRG). The results showed that for the DG-ICE-PRG measure psychology students ( $M = .97$ ,  $SD = 1.04$ ) had significantly higher scores compared to business students ( $M = .53$ ,  $SD = .98$ ),  $t(208) = 3.17$ ,  $p < .001$ . The same was true for the UG: psychology students ( $M = 1.02$ ,  $SD = .98$ ) had significantly higher ICE scores than business students did ( $M = .73$ ,  $SD = 1.01$ ),  $t(209) = 2.12$ ,  $p < .001$ .

However, in terms of allocation behaviour, a Mann-Whitney test indicated that although psychology students ( $M = 11.74$ ,  $SD = 4.73$ ,  $Mdn = 15.00$ ) tended to make higher allocations in the DG than business students did ( $M = 11.52$ ,  $SD = 4.58$ ,  $Mdn = 14.00$ ) this difference was not significant,  $U = 5057.00$ ,  $p = .297$ . Turning to allocations made in the UG, psychology students ( $M = 13.52$ ,  $SD = 3.10$ ,  $Mdn = 15.00$ ) again did not differ from their business student counterparts ( $M = 13.59$ ,  $SD = 3.62$ ,  $Mdn = 15.00$ ),  $U = 5263.50$ ,  $p = .563$ .

### 3.2.3 Discussion

The relationship between SVO and anticipated emotions was similar to that observed in Study 1, as was the relationship between SVO and the allocation behaviour. More importantly for present purposes, anticipated emotions partially mediated the relationship between SVO and allocation behaviour. Because participants in Study 2 had a greater range of SVO scores, these results demonstrate that the findings of Study 1 were not due to the fact that there was a restricted range of SVO and therefore show the robustness of these findings.

This suggests that differences in anticipated emotions can account (at least partly) for individual differences in preferences for divisions of outcomes.

This study also explored the differences in SVO, anticipated emotions and allocation behaviour between psychology and business students. Results showed that these two groups differed in their SVO, in line with what was found by Van Lange and colleagues (2011). More importantly, results showed that business and psychology students differed in their anticipated cooperative and competitive emotions. This finding particularly builds on the research of Van Lange and colleagues (2011) as it provides further insight into the differences between the two groups of students. The fact that students in different disciplines have different preferences for outcomes can perhaps be explained by the fact that these students anticipate experiencing more or less cooperative or competitive emotions. However, the results showed that psychology and business students did not differ in their allocation behaviour when they were asked to divide resources between self and an anonymous person. This may reflect differences in what was being measured. In the SVO and ICE measures, I assessed individual differences in preferred outcomes (SVO) and the emotions participants anticipated experiencing if they were to make certain specified allocations. However, allocation behaviour as measured in the DG and UG is concrete rather than hypothetical. Thus, a given individual might prefer competitive outcomes and might anticipate competitive emotions (pride about being unfair, regret and guilt about being fair), but when asked to make actual allocations, this individual might allocate more to the receiver because real outcomes are (potentially) at stake. Given that the tokens in each game were converted to real money if they were chosen as the lucky winners, individuals may be influenced by the prospect of real outcomes and as a result may play the games in a “strategically fairer” manner.

### 3.3 General Discussion

In line with my first hypothesis, these studies showed that SVO is associated with the cooperative and competitive emotions that individuals anticipate experiencing about fair and unfair resource allocations. In relation to my second hypothesis, these studies also showed that anticipated cooperative and competitive emotions partially mediated the relationship between SVO and allocation behaviour. More specifically, the more prosocial an individual is, the more likely s/he is to anticipate cooperative emotions and the less likely s/he is to anticipate competitive emotions when making resource allocation decisions. This then appears to lead such individuals to make more equal resource allocation decisions. On the other hand, the less prosocial an individual is, the less likely s/he is to anticipate cooperative emotions and the more likely s/he is to anticipate competitive emotions when making resource allocation decisions, which appears to lead such individuals to make less equal resource allocation decisions. Thus, my provisional conclusion is that anticipated emotions function as the (or at least *a*) psychological link between individual differences in the preference for certain resource allocation outcomes and how people actually make resource allocation decisions between self and another person.

The current findings extend what we know about SVO by pointing to a factor that drives individuals to have different outcome preferences (e.g., equal or unequal divisions of resources). Past researchers have linked SVO and emotions (as discussed in the introduction) such as empathy, sympathy and concern towards the others (Eggum et al., 2011; Van Kleef & Van Lange, 2008). This is further supported by the current studies, because the current findings are interpreted as showing that it is the anticipation of cooperative and competitive emotions that – at least in part – is responsible for the observed differences in allocation behaviour. The findings suggest that individuals with a prosocial social value orientation expect to experience cooperative emotions when making such decisions; and that individuals

with a proself social value orientation expect to experience competitive emotions when making such decisions. The apparent role of anticipated emotions in guiding behaviour in these studies is consistent with the emotion-as-feedback perspective, which states that anticipated emotions guide behaviour (DeWall et al., 2016).

The current studies have their limitations. Firstly, across both studies, participants' SVO were not equally distributed. Participants' SVO scores showed that they were more likely to be prosocial than proself. Although there was a more diverse sample in terms of participants' SVO in Study 2 than in Study 1, there were relatively few participants who would be classified as proself ( $N = 28$  out of 93 participants) on the basis of the criteria provided by Murphy et al. (2011). However, in the current studies I managed the uneven distribution of prosocials and proselfs by treating SVO as a continuous predictor and therefore did not rely on a categorical distinction in the correlational and mediation analyses. Future research should aim to recruit equal numbers of prosocials and proselfs in order to be able to draw more robust conclusions.

Secondly, it could be argued that the samples recruited for both studies consisted of participants from western, educated, industrialized, rich and/or democratic (WEIRD) countries, which is not representative of the world's population (Henrich, Heine, & Norenzayan, 2010). According to Henrich and colleagues (2010), as of 2008, 97% published articles in top Psychology journals consist mainly of participants from WEIRD countries, which only covers about 12% of the world's population. Taking the Henrich et al. argument seriously, because the current studies recruited students from a British university, they should be replicated using participants from a non-western cultural background and environment. This is addressed in Chapter 4 of my thesis, where I replicated the current studies recruiting Malaysian participants. Furthermore, because past research has shown that individuals may exhibit ingroup favouritism (Balliet, Wu, & De Dreu, 2014; Ben-Ner et al., 2009), and with

Malaysia having a multi-ethnic population, I took the opportunity to manipulate the receiver's identity (e.g. ingroup vs. outgroup) in the studies reported in Chapter 4. This may provide additional insight into the role of anticipated emotions on the relationship between receiver's identities on allocation behaviour, which will be discussed further in Chapter 4.

Another limitation of the current studies is that they were correlational in nature, whereby all three constructs were measured rather than manipulated. Individuals' SVO was measured using the SVO Slider measure, anticipated emotions were measured using the ICE measure, and individuals' allocation behaviour was measured using the economic games (DG and UG). Although the studies were correlational, reversing the mediation model (such that the effect of ICE on allocation is mediated by SVO, or the effect of SVO on ICE is mediated by allocation behaviour) would be logically implausible. Evidence from past literature showed that SVO is a stable individual difference in preferences for outcomes, and that this individual difference results in different allocation behaviour. It would therefore be unlikely that the model could be reversed, such that allocation behaviour predicts either SVO or ICE. Nevertheless, according to Spencer, Zanna and Fong (2005), if a mediation model indicates a significant indirect effect on the relationship between the IV and the DV, the mediator should be manipulated experimentally to establish that the mediation model is not only significant in correlational terms but also represents a causal chain. Establishing a causal chain between the constructs in the mediation model is deemed to be superior to a purely correlational mediation model. Because there were no manipulations of these constructs in the current studies, causal inferences from these correlational data are therefore difficult to make with any real confidence. In order to address this limitation, in the studies reported in Chapter 5 I experimentally manipulated anticipated emotions in order to investigate whether this would influence allocation behaviour.

Another possible limitation to the current studies is the order in which the measures were completed. In Study 1, SVO was measured at the end of the survey. This could be regarded as problematic because it means that the key predictor variable in the mediation model was measured after both the DV and the mediator. However, in Study 2, SVO was measured near the beginning of the survey. When we compare Study 1 and Study 2 with respect to the correlations between SVO and anticipated emotions, and between SVO and allocation behaviour, it can be seen that these are similar in magnitude. This suggests that the order in which the measures were completed did not affect the findings. Also, in Chapter 2 there was evidence that SVO is a stable social preference when it was measured at two different time-points. This is consistent with the existing literature on SVO (Messick & McClintock, 1968; Murphy et al., 2011). In light of this, it is argued that the order in which the measures were completed does not pose problems for the main finding of the current studies.

In conclusion, the overall aim of these studies was to investigate whether the relation between SVO and allocation behaviour can be accounted for by differences in anticipated emotions. The results of these two studies were supportive of the proposition that anticipated emotions help to explain differences in allocation behaviour between prosocials and proselfs. In particular, the pattern of findings showed that participants scoring high in prosociality are likely to anticipate experiencing more cooperative emotions than competitive emotions and suggests that it is this that leads them to divide resources between self and other in a fair way. In subsequent chapters, I will address some of the issues identified in this discussion. Thus, in Chapter 4, I will report studies in which I replicate the current studies in a different cultural context and examine whether anticipated emotion mediates the relationship between SVO and allocation behaviour when the group membership (ingroup versus outgroup) of the

receiver is known. In Chapter 5, I will report studies in which I examine the consequences for allocation behaviour of manipulating anticipated emotions.



#### **4 Chapter 4: Social Value Orientation and Anticipated Emotions in Resource Allocation Decisions: The Malaysian Context**

Individual dispositional preferences and anticipation of future emotions have consequences for decision making (Mellers & McGraw, 2001; Van Der Schalk et al., 2012). For instance, allocators who have a dispositional preference to be fair will anticipate more cooperative emotions and fewer competitive emotions when allocating resources, and this leads to fairer allocations towards their opponents (as seen in the findings of the studies reported in Chapter 3). Although an individual's dispositional preference may be to behave cooperatively as a way to feel positive about being fair and/or avoid feeling negative emotions about behaving unfair, does his/her allocation behaviour change when the opponent's social identity is revealed? In this study, I aim to investigate whether the social identity of the opponent changes allocation behaviour and how this is moderated by individual differences in terms of social value orientation (SVO) and anticipated emotions.

Social identity theory (Tajfel & Turner, 1979) argues that individuals derive part of their identity from the groups they belong to and that this contributes to their personal self-esteem. Hence, individuals are motivated to find attributes of their groups that positively distinguish them from other groups. In an intergroup setting, social identity becomes salient and therefore individuals are more inclined to search for positive ingroup differentiation. Some studies have used economic games to study the difference in allocation behaviour towards ingroup and outgroup members. For example, to measure altruistic behaviours researchers have used the Dictator Game (DG) whereby an allocator is endowed a particular amount of monetary units (MUs) and then needs to make a decision about how to divide this resource with another person who is either from their ingroup or from an outgroup (Ben-Ner et al., 2009). No matter how many MUs the allocator allocates to the receiver, the receiver has to accept the allocation. Thus, the allocator assumes the role of a dictator. Ben-Ner and

colleagues (2009) found that allocators gave more MUs to ingroup members than to outgroup members. This suggests ingroup favouritism, a tendency to favour ingroup members over outgroup members, and is consistent with the social identity theory argument that group members will search for ways to distinguish the ingroup from an outgroup in ways that reflect well on the ingroup.

Individual differences in allocation preferences such as social value orientation (SVO) are also known to affect allocation behaviour (see previous chapters). SVO is commonly categorized into three orientations; prosocial, individualistic and competitive (Van Lange et al., 1997). *Prosocials* prefer to minimize the difference in resource allocation between themselves and others (*inequality averse prosocials*) or to maximize both their own and others' outcomes (*joint gain maximizer prosocials*). *Individualists* have a preference for maximizing their own payoff. *Competitive* individuals prefer to maximize the difference between their own and others' outcomes by having a higher payoff than the other person. In past research, individualists and competitors are usually combined in a single category as '*proself*' (Haesevoets, Folmer, & Van Hiel, 2015), a term that I will adopt here. Research has shown that *prosocials* are more cooperative than *proselfs* (De Cremer & Van Lange, 2001). This was assessed using both the public goods dilemma and the give-some dilemma. In the public goods dilemma, participants who were in a team of four were given 30 points each and were tasked to contribute any amount they wished to a common pool. The total amount contributed by the participants and other team members would be doubled and then divided equally among the team members. The catch in this game was that team members who did not contribute to the common pool would still benefit from the common pool (i.e., free riding). Thus, non-contribution would be the most attractive option. However, this would result in a lower outcome than if all the team players contribute. Findings showed that participants who are prosocial cooperated more than proselfs due to reported higher social

responsibility (De Cremer & Van Lange, 2001). In a modified give-some dilemma, participants were given four blue chips and the other player (an unknown person) was given four yellow chips. Each chip that the participant decides to keep was worth 25 points and each chip given to the other player was worth double (50 points). As for the other player, each chip s/he keeps is worth 25 points and each chip given to the participant was worth 50 points. Participants were told the amount of chips given by the other player, which was either 1 chip (low cooperation) or 3 chips (high cooperation). Upon receiving this information, participants were asked to decide how many chips they intended to give to the other person. A higher amount of chips given to the partner indicates greater cooperation, and it was found that prosocials were more cooperative than proselves. Participants also cooperated more when the other player showed high cooperation (De Cremer & Van Lange, 2001). In both these dilemmas there is evidence that prosocials are more cooperative than proselves.

Past literature has shown that individuals are affected by the consequences of decision making in terms of the emotions that they anticipate experiencing (Lerner et al., 2015). For example, anticipated pride about being fair and anticipated regret about being unfair elicits cooperative resource allocation behaviour (Van Der Schalk et al., 2012). Similarly, an individual may behave in a more desirable way (perhaps more morally) in order to avoid feeling disappointment (Gill & Prowse, 2012; Zeelenberg, Van Dijk, Manstead, & Van Der Pligt, 2000). In a study investigating divorce negotiation, guilt was reported to enhance cooperative behaviours (Wietzker, Buysse, Loeys, & Brondeel, 2012). Feeling shameful when one fails to act morally was also found to motivate prosocial behaviour (De Hooge, Breugelmans, & Zeelenberg, 2008). In the current study, I aim to measure anticipated emotions about fair and unfair decisions by focusing on these decision-related emotions.

The studies reported in Chapter 3 investigated the relationship between the three constructs: SVO, anticipated emotions and allocation behaviour. Specifically, the studies in

Chapter 3 examined the relation between these constructs in the context of both the DG and the Ultimatum Game (UG). Results from Chapter 3 showed that anticipated cooperative and competitive emotions robustly mediated the relationship between SVO and allocation behaviour. In particular, prosocials anticipated more cooperative emotions and less competitive emotions, which then appeared to lead them to behave more fairly when allocating resources. The mediation analyses reported in Chapter 3 relied on the measurement of individual differences in SVO and in anticipated emotions, which meant that these studies were purely correlational in nature. To establish causal evidence that differences in preferences for divisions of resources outcomes can be explained by the extent to which individuals anticipate cooperative and competitive emotions, it would be helpful to include an experimental manipulation of these preferences. Given that individuals tend to prefer more equal outcomes between themselves and a member of their own group than between themselves and a member of an outgroup, it could be hypothesized that having an ingroup or an outgroup receiver should elicit different anticipated emotions. Specifically, it is hypothesized that ingroup receivers are more likely to elicit cooperative emotions whereas outgroup receivers are more likely to elicit competitive emotions.

The studies reported in the current chapter are quite similar to those reported in Chapter 3, the exception being that the ethnic identity of the opponent in the DG was (subtly) made known to the participants playing the game. To manipulate group membership, I utilised the fact that Malaysia is a multi-ethnic population. Malaysia's population consists of three main ethnic groups, Bumiputra [69.1%], Chinese [23%] and Indians [6.9%], and others [1%] (Department of Statistics, 2018). Due to colonial history, Malays and other indigenous groups are labelled '*bumiputra*' (Khattab, 2016; Siddique & Suryadinata, 1981). '*Bumiputra*' means '*sons of the soil*' in the Malay language. This label was given to distinguish Malays and other indigenous groups from Chinese and Indians (*non-bumiputra*). *Bumiputras* have

*bumiputra privileges*, which means they receive more educational and economic assistance from the Malaysian government (Pietsch & Clark, 2014). This policy was implemented by the Malaysian government in 1970 through the New Economic Policy (NEP) (G. K. Brown, 2007; Jomo & Sundaram, 2004), to help the *bumiputras* who, at the time, were not doing so well in these areas compared to the *non-bumiputras*. This policy was also implemented to help the ethnic groups reach national harmony, particularly in the economic and education field (Mokhtar, Chan, & Singh, 2017; Montesino, 2012). However, over the years, this policy has raised issues of inequality between the *bumiputras* and *non-bumiputras* due to the amount of help the *bumiputras* receive from the government (Tyson, Jeram, Sivapragasam, & Azlan, 2017). This in turn has also contributed to segregation between the ethnic groups within the society (Cheong, Hill, & Leong, 2016; Montesino, 2012; Tyson et al., 2017). Because of the distinction between ethnic groups in Malaysia, it is a relevant context in which to investigate differences in allocation towards ingroup and outgroup members. For the present studies, I recruited participants from the three main ethnic groups: Malay, Chinese and Indians. Each of these ethnic groups is unique and distinct from each other in terms of tradition, culture and religion. The Malays are viewed as the majority group (due to a larger population) and Chinese and Indians are viewed as minority groups (due to their smaller populations).

The first aim of the research reported below was to investigate whether there are any differences in allocators' anticipated emotions towards ingroup and outgroup receivers. I predicted that participants would anticipate more cooperative emotions and less competitive emotions when making allocations to ingroup members then when allocating to outgroup members. The second aim was to investigate the difference in allocators' allocation behaviour towards ingroup and outgroup receivers. I predicted that participants would allocate more tokens to ingroup members then to outgroup members. A third aim was to examine whether any effect of receivers' group membership on allocation behaviour would

be mediated by anticipated emotions. I predicted that the effect of receiver's group membership/social identity on allocator's allocation behaviour would be mediated by anticipated cooperative and competitive emotions. In addition, I explored whether there were differences in allocation behaviour between members of the majority group (Malay) and members of the minority groups (Chinese and Indian). Finally, I also aim to replicate the findings reported in Chapter 3, whereby the effect of SVO on allocation behaviour would be mediated by anticipated cooperative and competitive emotions.

## 4.1 Study 1

### 4.1.1 Method

#### 4.1.1.1 Design and participants

The study had a 3 (Allocator group: Chinese, Indian and Malay; quasi-experimental between-subjects factor) x 3 (Receiver group: Chinese, Indian and Malay; within-subjects factor) mixed design. I recruited 123 Malaysians (97 females, 25 males, 1 undisclosed,  $M_{age} = 25.23$ ,  $SD = 2.94$ ) from the three major ethnic groups in Malaysia, Chinese ( $N = 43$ ), Indians ( $N = 38$ ) and Malays ( $N = 42$ ), all of whom were above 18 years old. Recruitment was done through social media and snowballing. Each participant was given a RM15 (approximately £3) gift voucher for their time and was also given a chance to be entered into a lottery worth up to RM60 (approximately £11) in gift vouchers. The questionnaire was administered online using a survey site (Qualtrics).

#### 4.1.1.2 Materials

**Index of Cooperative and Competitive Emotion (ICE) Measure.** To measure anticipated cooperative and competitive emotions, the ICE measure that was developed in Chapter 2 was used in an adapted form. The scenarios were adapted in such a way that tokens were allocated to others who belonged to the three ethnic groups (Chinese, Indian and

Malay). For each ethnic group, ethnic group-specific names were used (Chinese: Siew Ling or Sui Mei [female] & Chi Yung or Jian Hong [male], Indian: Shantini or Lakshimi [female] & Viknesh or Kumar [male], and Malay: Nurul or Aini [female] & Ali or Samad [male]). Each name that was used was presented equally but in a random order representing each ethnic group. The proposed divisions in the scenarios represented equal (12:12 and 21:21 [Chinese], 9:9 and 24:24 [Indian], 15:15 and 18:18 [Malay]) and unequal (16:8 and 28:14 [Chinese], 12:6 and 32:16 [Indian], 20:10 and 24:12 [Malay]) allocations. Participants were told that the tokens allocated would be accepted by the receiver regardless of the amount of the distribution. This was to ensure that the scenarios reflected allocations in a DG. For example, one item asked participants to imagine that there were 36 tokens at stake, and the participant took 24 tokens for him/herself and allocated 12 tokens to the other person. Participants were asked to rate how they would feel about this division of tokens, using a scale of 1 (not at all) to 5 (very much) to indicate the extent to which they would feel each of six emotions: pleased, proud, regretful, disappointed, guilty, and ashamed. Definitions of each emotion were given in English and in the Malay language (the official language of Malaysia) to make sure participants fully understood what these emotions mean (see Appendix C). The English definitions were taken from the Oxford online dictionary ("proud, pleased, regret, disappointment, guilt, ashamed," 2018) and the Malay definitions were taken from the Dewan Pustaka and Bahasa online dictionary ("bangga, gembira, menyesal, kecewa, bersalah, malu," 2018). There were two versions of these 12 scenarios, one with female opponents and the other with male opponents. In the 12 scenarios, each of the randomly assigned names from each ethnic group was presented four times. Participants were always given same-gender scenarios. An example of the scenarios used for the ICE measure is shown in Appendix D.

**Social Value Orientation.** Similar to studies reported in previous chapters, I assessed participants' SVO using the SVO Slider Measure (SVO-SM) (Murphy et al., 2011). This measure requires participants to choose the most preferred allocation between themselves and the recipient (an anonymous other). The SVO-SM has 15 items of which 6 primary items distinguish participants into four groups (altruist, prosocial, individualists and competitors) and the other 9 secondary items break the prosocial motivation down into joint gain maximization and inequality averse motivation. For this study, only the nine primary items were used in order to reduce the time commitment for participants. Each item consists of nine allocation options, whereby each option gives a certain amount of points to the allocator and a certain amount of points to the receiver. The items are created in such a way that the options differ in pay-offs for the allocator, the receiver, the joint outcome, and the difference between allocator and receiver. These scores are then used to calculate the degree of prosociality, with larger 'angles' reflecting greater prosociality.

**Allocation behaviour.** Each participant played the role of allocator in a DG and was given a total of 30 tokens to divide between him/herself and an opponent who (by virtue of the same names presented to the participant in the ICE measure) belonged to one of the three ethnic groups. The participants were told that the tokens had monetary value, in the sense that the points gained would be paid out in real money if they won a lottery. On completing the survey, participants were automatically entered into the lottery in which they could win a gift voucher worth up to a maximum of RM30 (approximately £5).<sup>6</sup>

**Ingroup Identity Measure (IIM).** The IIM (Leach et al., 2008) assessed ingroup identification. This 14-item measure consists of two second-order factors: self-definition

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<sup>6</sup> Two pairs of participants were randomly picked for the lottery. They were paid out RM60 (approximately £11) that was the maximum possible winnings of the allocation in gift vouchers because participants were not actually paired with another participant.



(which in turn consists of individual self-stereotyping and in-group homogeneity) and self-investment (which in turn consists of satisfaction, solidarity and centrality). Example items are “I feel a bond with [ingroup]” (representing solidarity) and “I have a lot in common with the average [ingroup]” (representing individual self-stereotyping). Respondents were asked to rate the extent to which they agreed with each item on a scale ranging from 1 (strongly agree) to 5 (strongly disagree). The IIM had three different versions, one for each ethnic group. Qualtrics was programmed to present the version referring to the participant’s own ethnic group.

**Attention check.** The attention check presented participants with a block of text related to emotions and they were given three options to choose from. However, at the end of that text, they were asked not to click on any of the options given and were asked to move on to the next question. Participants failed the attention check if they clicked on one of the options given.

#### **4.1.1.3 Procedure**

Participants first completed a consent form. Next, they completed demographic items (ethnic group, age, gender, fluency in English, and occupation). Participants were then asked to complete the SVO-SM and the IIM. The items in both the SVO-SM and IIM were presented in a randomized order. Next, participants were shown the definitions of the emotions that they would be presented within the next scale, the ICE measure. They then reported their anticipated emotions for the 12 different allocation scenarios in the ICE measure. These scenarios were presented in a randomized order. Next, the attention check was presented to the participants. They were then asked to play the DG three times (once for each ethnicity: Chinese, Indian and Malay) to measure their allocation behaviour. The order of the opponents they played against was randomized. After that, participants were asked

whether they had taken their participation in the study seriously. Finally, participants were debriefed.

## 4.1.2 Results

### 4.1.2.1 Data treatment

Out of the 123 Malaysians recruited, data from 105 individuals ( $M_{age} = 25.33$ ,  $SD = 2.86$ ) were retained for analysis. There were 22 males, 82 females and 1 participant with undisclosed gender. The participants included 35 Chinese, 33 Indians and 37 Malays. Data from participants who failed the attention check ( $N = 7$ ), participants who admitted that they were not serious in answering the questionnaire ( $N = 3$ ), and from those who took longer than 2.5 times the median response time ( $Mdn = 19.35$ ,  $N = 8$ ) were dropped.

### 4.1.2.2 Anticipated emotions towards ingroup and outgroup receivers

A  $t$ -test was done to address the hypothesis, that participants (allocators) would anticipate more cooperative and less competitive emotions when making allocations to ingroup members compared to when making allocations to outgroup members. Results showed that participants did not differ in their anticipated cooperative and competitive emotions towards ingroup ( $M = 1.14$ ,  $SD = 1.32$ ) and outgroup ( $M = 1.18$ ,  $SD = 1.31$ ) members,  $t(102) = -.72$ ,  $p = .471$ .

It was further explored whether participants from each ethnic group differed in their anticipated cooperative and competitive emotions towards receivers from different ethnic groups by conducting a 3 (Allocator group: Chinese, Indian and Malay; quasi-experimental between-subjects factor) x 3 (Receiver group: Chinese, Indian and Malay; within-subjects factor) mixed ANOVA. There were no significant main effects for receivers' ethnic group,  $F(2, 202) = 2.14$ ,  $p = .121$ , or for allocators' ethnic group,  $F(2, 101) = 1.82$ ,  $p = .168$  on anticipated emotions. There was also no significant interaction between receivers' and allocators' ethnic group,  $F(4, 202) = .59$ ,  $p = .672$ . This shows that Chinese, Indians and

Malays did not differ in their anticipated cooperative and competitive emotions towards the three ethnic groups.

I then explored the difference between the majority group (Malays) and the minority group (Chinese and Indians) in their anticipated cooperative and competitive emotions towards ingroup and outgroup members, using a 2 (majority vs. minority allocator, between-subjects) x 2 (ingroup vs. outgroup receiver, within-subjects) mixed ANOVA. There was no significant main effect for receivers' group membership,  $F(1, 101) = 1.01, p = .318$ , but there was a near significant main effect of allocators' group membership,  $F(1, 101) = 3.91, p = .051$ , on anticipated emotions towards others, whereby minority group participants anticipated more cooperative and less competitive emotions ( $M = 1.34, SD = 1.34$ ) than participants of the majority group ( $M = .85, SD = 1.13$ ). However, there was no significant interaction between allocators' and receivers' group membership,  $F(1, 101) = 1.20, p = .276$ . The absence of a significant interaction shows that there were no differences between the majority and minority group allocators in their anticipated cooperative and competitive emotions towards ingroup and outgroup receivers.

#### **4.1.2.3 Allocation behaviour**

When comparing participants' allocation behaviour toward ingroup and outgroup receivers, a Wilcoxon Signed Rank test showed that participants did not differ in their allocation behaviour towards ingroup ( $M = 13.79, SD = 3.44, Mdn = 15.00$ ) and outgroup

receivers ( $M = 13.86$ ,  $SD = 2.99$ ,  $Mdn = 15.00$ ),  $Z = -.24$ ,  $p = .810$ .<sup>7,8</sup> When exploring further whether each ethnic group differed in their allocation to ingroup and outgroup receivers,

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<sup>7</sup> For each ethnic group, there were two different outgroup members: For Chinese participants the outgroup included the Malay receiver and the Indian receiver; for Indians the outgroup included the Malay and the Chinese receiver; and for Malays the outgroup included the Chinese and Indian receivers. The two outgroups were combined into a single outgroup category because a Wilcoxon signed rank test showed that Chinese, Indians and Malays did not differ in their allocation behaviour towards the two outgroups,  $Z_{Chinese} = -1.34$ ,  $p = .180$ ,  $Z_{Indian} = -1.17$ ,  $p = .244$ , and  $Z_{Malay} = -.61$ ,  $p = .539$ .

<sup>8</sup> Using the G\*Power software (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007), I conducted a post-hoc power analysis on the difference between participants' allocation behaviour towards ingroup and outgroup members. This showed that, given the sample size ( $N = 103$ ), the power obtained for finding a difference in participants' allocation towards ingroup and outgroup members was very low ( $1 - \beta = .08$ ) and close to zero. Moreover, a sensitivity test (using the G\*Power software) showed that the current study had sufficient power ( $1 - \beta = .80$ ) to find a small effect of Cohen  $d_z = .025$  (Cohen, 1969, p. 38). In other words, it seems to be the case that the low power that was achieved reflects that there was no difference in participants' allocation behaviour towards ingroup and outgroup members, rather than having insufficient sample size to uncover this. For study 2, I aimed to recruit at least as many participants per condition because the power analysis suggested that this was sufficient to find a small effect size.

there was no significant difference in allocations to ingroup and outgroup for any of the ethnic groups,  $Z_{Malay} = -.614, p = .539, Z_{Chinese} = .000, p = 1.0$ , and  $Z_{Indian} = 1.490, p = .136$ .<sup>9</sup>

For exploratory purposes, we examined whether the ethnic groups differed in their overall allocation behaviour. A Kruskal Wallis test comparing Malay ( $M = 13.31, SD = 3.02, Mdn = 15.00$ ), Chinese ( $M = 13.75, SD = 3.54, Mdn = 15.00$ ) and Indian ( $M = 14.51, SD = 1.95, Mdn = 15.00$ ) allocators, showed that their allocation behaviour towards others (irrespective of the receivers' ethnicity) marginally differed from what would be expected by chance,  $\chi^2(2) = 5.38, p = .068$ . When participants were grouped according to their majority and minority group status in the Malaysian society, a Mann Whitney U test showed that majority group allocators ( $M = 13.31, SD = 3.02, Mdn = 15.00$ ) allocated significantly less to others (irrespective of the receivers' ethnicity) than minority group allocators ( $M = 14.11, SD = 2.90, Mdn = 15.00$ ),  $U = 947.50, Z = -2.317, p = .020$ .

#### 4.1.2.4 Anticipated emotions as a mediator

Because there were no significant effects of receivers' group membership on allocators' anticipated emotions or allocation behaviour, the predicted mediation of the impact of group membership on allocation behaviour by anticipated emotions could not be tested. However, because there was a significant difference in allocation behaviour between the majority and minority group, a mediation analysis was conducted to test whether the

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<sup>9</sup> The correlations between the IIM scores for each ethnic group and allocation behaviour towards ingroup ( $r_{Malay(37)} = -.021, p = .903; r_{Chinese(35)} = -.089, p = .613; r_{Indian(31)} = .001, p = .995$ ) and outgroup members ( $r_{Malay(37)} = -.016, p = .927; r_{Chinese(35)} = -.219, p = .206; r_{Indian(31)} = -.152, p = .415$ ) were not significant. The absence of significant correlations between the IIM and allocation behaviour shows that strength of ingroup identification did not play a role in shaping allocation behaviour. This is consistent with the fact that the manipulation of group identity did not influence allocation behaviour.

effect of allocators' group membership (majority versus minority) on allocation behaviour was mediated by anticipated cooperative and competitive emotions. This is reported below.

Using the PROCESS macro in SPSS, I ran a mediation analysis with allocators' group membership as the predictor (whereby the majority group was coded 1 and the minority group was coded 2), anticipated cooperative and competitive emotions (using ICE-PRG) as the mediator, and the dichotomized<sup>10</sup> averaged tokens allocated to the receiver (irrespective of receiver's ethnicity) in DG, as the outcome variable (see Figure 4.1). The mediation analysis showed that the total effect of allocators' group membership on tokens allocated in DG was significant and positive,  $b = 1.04$ , 95% CI [.162, 1.919]. Although allocators' group membership did not predict ICE-PRG,  $b = .50$ , 95% CI [-.023, 1.014], ICE-PRG was a significant and positive predictor of allocations in the DG,  $b = .70$ , 95% CI [.242, 1.164]. More importantly, the indirect effect of SVO on allocation behaviour through ICE-PRG was significant,  $b = .35$ , 95% CI [.022, .902]. The direct effect of group membership on allocation was no longer significant when controlling for anticipated emotions,  $b = .87$ , 95% CI [-.063, 1.794]. Despite the fact that there was no direct effect of allocators' group membership on anticipated cooperative and competitive emotions, the significant indirect effect demonstrates that at least to some extent the difference between majority and minority groups in allocation behaviour can be attributed to differences in anticipated emotions.

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<sup>10</sup> Exploration of the allocation data showed that the average number of tokens allocated to the receiver in each DG was not normally distributed (Kolmogorov-Smirnov:  $D(103) = 3.69$ ,  $p < .001$ ). I therefore decided to dichotomize allocation scores, with offers  $\geq 15$  deemed to be fair and offers  $\leq 14$  deemed to be unfair.

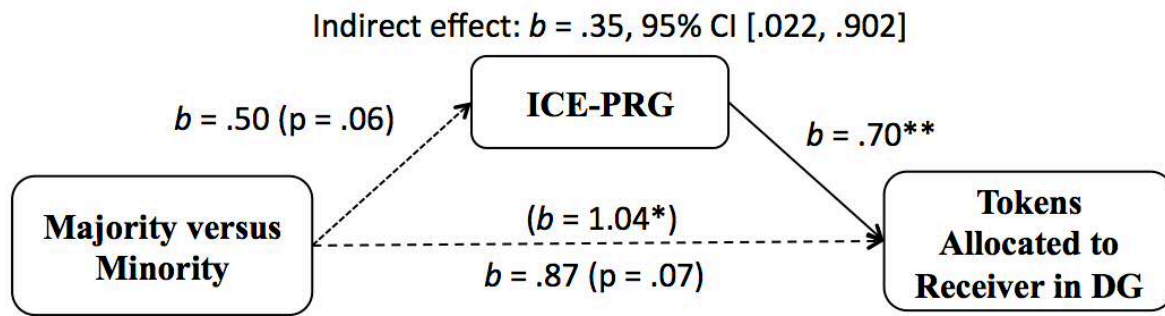


Figure 4.1. Indirect effect of allocators group membership (majority vs. minority) on dichotomized averaged tokens allocated to the receiver (regardless of ethnicity) in the Dictator Game through ICE PRG. \*  $p < .05$ , \*\*  $p < .01$  (Study 1).

Using the PROCESS macro in SPSS, a mediation analysis was carried out to test whether the pattern of findings observed in the studies reported in Chapter 3, whereby anticipated cooperative and competitive emotions mediated the relation between SVO and allocation behaviour, would be replicated in this study. In this mediation model, SVO was the predictor, anticipated cooperative and competitive emotions (using ICE-PRG) was the mediator, and the dichotomized averaged tokens allocated to the receiver (regardless of receivers' ethnicity) in the DG was the outcome variable (see Figure 4.2). This mediation analyses showed that the total effect of SVO on tokens allocated in DG was significant and positive,  $b = .05$ , 95% CI [.011, .086]. SVO was also a significant predictor of ICE-PRG,  $b = .04$ , 95% CI [.019, .059], and ICE-PRG was a significant and positive predictor of allocation behaviour,  $b = .63$ , 95% CI [.167, 1.103]. Moreover, the indirect effect of SVO on allocation behaviour through ICE-PRG was significant,  $b = .02$ , 95% CI [.009, .050], while the direct effect of SVO on allocation was no longer significant,  $b = .03$ , 95% CI [-.012, .067], thereby replicating the results reported in Chapter 3.

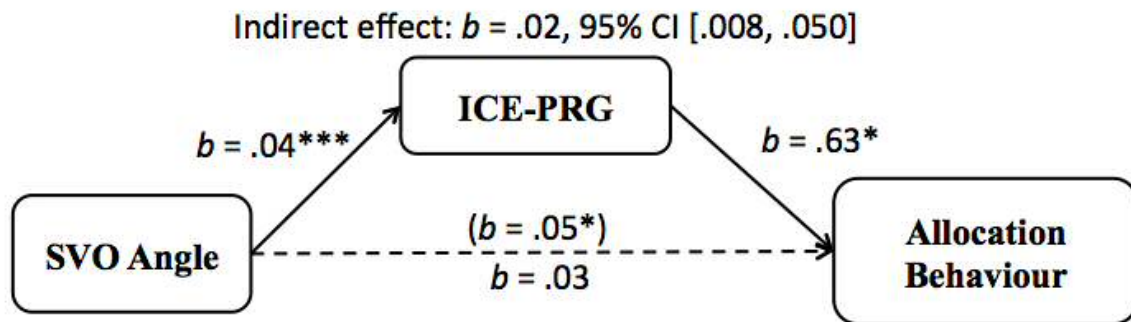


Figure 4.2. Indirect effect of Social Value Orientation on dichotomized averaged tokens allocated to the receiver (regardless of ethnicity) in the Dictator Game through ICE PRG. \*  $p < .05$ , \*\*\*  $p < .001$  (Study 1).

### 4.1.3 Discussion

The finding that differences in anticipated cooperative and competitive emotions mediated the effect of SVO on allocation behaviour replicated the pattern observed in Chapter 3. This echoes the argument made in Chapter 3 that prosocials anticipate more cooperative emotions (pride about being fair, regret and guilt about being unfair) than competitive emotions (pride about being unfair, regret and guilt about being fair), and that it is these anticipated cooperative and competitive emotions that are responsible for individual differences in allocation behaviour. More importantly, the pattern of mediation is replicated in a population with a different cultural background. This will be discussed further in the general discussion of this chapter.

However, the results of the present study did not support the prediction concerning differences in anticipated emotions and allocation behaviour when allocating resources to ingroup and outgroup others. Surprisingly, the results showed that there were no differences in allocations to ingroup and outgroup receivers. This stands in contrast to the ingroup favouritism in allocation behaviour observed by other researchers (Ben-Ner et al., 2009; Berg, Dickhaut, & McCabe, 1995; Forsythe, Horowitz, Savin, & Sefton, 1994; Liebe & Tuitic, 2010). A potential reason for the absence of this effect in the current study is that participants were asked to play three DGs consecutively with members of the three different



ethnic groups, in a within-subjects design. This may have made them aware of the fact that the ethnicity of the other to whom they were making allocations was being varied. In turn, this may have affected the way the tokens were distributed because participants might have wanted to be seen to allocate tokens in an unbiased way, for socially desirability reasons. In other words, impression management concerns may have restrained participants from allocating the resources unequally between the members of the different ethnic groups. Because there were no differences in allocation behaviour towards ingroup and outgroup, the idea of experimentally manipulating preferred ways of dividing the resources was unsuccessful.

Despite this lack of effect, the results showed that when participants were re-classified into majority and minority groups, the minority group was more likely than their majority group counterparts to make fair allocations to other receivers (regardless of the receivers' ethnicity). Social identity theory (Tajfel & Turner, 1979) offers a possible explanation for the fact that members of minority groups were more generous than were members of the majority group. Social identity theory posits that people seek to make comparisons between their own group and other groups in such a way that their own group is positively distinctive. Because the majority group is more privileged compared to minority groups in the context of Malaysian society, comparing ingroup with the majority group would normally be unfavourable for a minority group if the comparison is being made on the dimension of resources. Thus, in order for the minority group to make a more favourable comparison, they might seek to compare ingroup with the majority outgroup on an alternative dimension. This is known as the *social creativity strategy* (Tajfel & Turner, 1979). Thus, it could be argued that members of the minority groups behaved more generously in the current study as a way to positively distinguish themselves from the majority group in terms of morality rather than resources.

It could also be argued that social dominance theory can account for the difference between majority and minority groups in allocation behaviour (Pratto, Sidanius, Stallworth, & Malle, 1994). Social dominance theory postulates that forming group-based hierarchies is a universal human tendency and that hierarchical social order is maintained through individual and institutional discrimination (e.g., through hierarchy-legitimizing myths) (Pratto et al., 1994). The theory also identifies an individual difference variable that describes preferences for hierarchical relationships between groups, which is social dominance orientation (SDO; Pratto et al., 1994). Social dominance theory posits that in order for higher status groups to maintain their position, they promote societal roles and practices that enhance inequality. At the same time, lower status groups strive for equality and being on par with the higher status group. In the Malaysian context, the majority (*bumiputras*) group have a higher status than the two minority groups (Chinese and Indians) because the *bumiputras* receive special privileges that the minority groups do not (Pietsch & Clark, 2014). In light of social dominance theory, the differences in status of the *bumiputras* and *non-bumiputras* in Malaysia might explain why the majority group was generally less fair. Thus, it could be argued that the *bumiputras* acted less fairly in order to maintain status differences within Malaysian society, whereas *non-bumiputras* acted more fairly in order to promote equality between groups.

Because this effect of majority/minority status on allocation behaviour was found in an exploratory analysis, I sought to replicate the effect in a follow-up study. I also took the opportunity to include a measure of SDO. If it is true that differences in allocation behaviour between majority and minority groups stem from differences in SDO, then there should be a negative relationship between SDO scores and allocation behaviour, such that individuals with a high score, who seek to maintain or even increase the differences in social status of

different groups, should allocate less to others, perhaps especially when those others are members of lower status (minority) groups.

Another change that was made in Study 2 was to switch the design of the study from a within-subjects to a between-subjects manipulation of receiver's social identity. This was done to avoid participants acting in a socially desirable way. By switching to a between-subjects design, the manipulation of the opponent's social group identity should have been less transparent than it was in the within-subjects design used in Study 1. I also sought to recruit a bigger sample in order to rule out the possibility that the lack of evidence for differences in allocations to ingroup and outgroup members in Study 1 was due to lack of power.

## 4.2 Study 2

The main aim of Study 2 was to re-examine the prediction that there would be a difference in allocation behaviour towards ingroup and outgroup members. It was felt that a better way to test this prediction would be to change the design from within-subjects to between-subjects. With this change, I hypothesised that there would be a difference in participants' allocation behaviour towards ingroup and outgroup members. Specifically, participants would allocate more tokens to ingroup members than to outgroup members.

A further aim of this study was to explore the SDO explanation for the difference in allocation behaviour of minority and majority group allocators towards others (regardless of the receivers' ethnicity) that was found in Study 1. A measure of SDO was therefore added to investigate the extent to which preferences for group-based hierarchies could account for this effect. According to Social Dominance theory, higher status groups are generally higher in SDO and strive to maintain their position by enhancing the inequality (Pratto et al., 1994), while lower status groups are generally lower in SDO and strive for equality to bridge the gap

between higher status groups and themselves. In the current study, I predicted that in the Malaysian context, the minority group would have lower SDO and the majority group would have high SDO.

I also explored the combined effects of allocators' group membership (majority vs. minority), receivers' group membership (ingroup vs. outgroup) and SDO on allocation behaviour. I predicted that the majority group would be less generous to others than would the minority group, and that the strength of the effect of allocators group membership on allocation behaviour would depend on individuals' level of SDO in such a way that majority members high in SDO would be even less fair, whereas minority members low in SDO would be even more fair. I also predicted that the participants would be more generous to their ingroup members than to their outgroup members, and that ingroup favouritism would be moderated by SDO in such a way that this would be more pronounced for participants high in SDO.

A further change from Study 1 is that instead of using the DG, I used the UG (Güth et al., 1982). As noted earlier in the thesis, the UG has a strategic component in the sense that the allocator needs to consider that the receiver might reject the offer and this could increase participants' engagement with the game. In addition, the survey was translated into Malay to accommodate non-English speaking Malaysians. A professional translator translated the questionnaire from English to Malay. To ensure that the translated version reflected the English version, two bilingual (Malay and English) speakers checked the translated questionnaire. The survey was presented in both languages (English and Malay) in order to give participants a choice of completing the questionnaire in either English or Malay.

## 4.2.1 Method

### 4.2.1.1 Design and participants

Study 2 had a 2 (Allocator group: Chinese and Malay; quasi-experimental factor) x 3 (Receiver group: Chinese, Indian and Malay) between-subjects design. There were 565 participants (435 females, 129 males, 1 other,  $M_{age} = 23$ ,  $SD = 4.142$ ) who were recruited for this study. Out of these, 243 were Chinese, 65 were Indians, 222 were Malay, 13 were from other ethnic groups and 22 were of mixed ethnicity. Participants were recruited from Malaysian universities through social media and mass emailing to groups of classes with the help of lecturers and administrative staff. As an incentive, all participants were entered into a lucky draw in which four pairs had a chance to win a voucher worth RM60 (approximately £12) each. The questionnaire was administered online using a survey site (Qualtrics).

### 4.2.1.2 Materials

As Study 1, SVO, an attention check and the IIM were administered. The ICE measure was simplified by not varying the recipients' social identity. This was to reduce the duration of the study and to make the manipulation of the receiver's social identity less obvious. Also, the ICE measure was adapted from Study 1 by presenting six allocation scenarios that reflected the UG rules, such that participants were reminded that the receiver could reject the allocation presented in each scenario. These six allocation scenarios represented fair (15:15; 18:18; 21:21) and unfair (20:10; 24:12; 28:14) divisions of tokens. Similar to Study 1, the definitions of the emotions in the ICE measure were given in two languages (English and Malay). However, the definitions were slightly modified after making use of a professional translation service (see Appendix E), and were checked by two other bilingual speakers. These definitions were presented on the same screen below each item of the ICE measure. This was to ensure participants were able to refer to the definitions of the emotions when deciding how to answer each item. As noted above, the entire questionnaire

was presented in both Malay and English, with the question in Malay at the top and the English translation directly underneath. An example can be seen in Appendix E, showing that the Malay definitions of the emotions were given prior to the English definitions.

In addition, the SDO measure (Pratto et al., 1994) was included. This consisted of 16 items that measured individuals' preferences for group-based dominance and inequality (e.g., "No one group should dominate in society;" "Some groups of people are just more worthy than others"). Participants are asked to rate each statement using a scale running from 1 (strongly disagree/disapprove) to 7 (strongly agree/favour).

**Allocation behaviour.** Study 2 measured allocation behaviour by using the UG (Güth et al., 1982). Each participant played the role of the allocator and was given a total of 30 tokens, to be divided between him/herself and an opponent who by virtue of his or her name belonged to one of the three main Malaysian ethnic groups. The names used were the same as the ones used in Study 1. Participants were told that the receiver would be able to accept or reject the proposed allocation, and that if the recipient rejected the proposal, neither the allocator nor the recipient would receive any tokens. On the other hand, if the recipient accepted the proposal, the allocator and the recipient would receive what the allocator had proposed. Participants were told that the tokens had monetary value in the sense that the points gained would be doubled and would be paid out in real money if they won a lottery. After the survey was completed, participants were automatically entered into the lottery

where four pairs of winners could win a gift voucher worth up to a maximum of RM60 (approximately £11).<sup>11</sup>

#### 4.2.1.3 Procedure

Participants were first asked to complete a consent form. They were then asked to provide demographic information (ethnicity, age, gender, fluency in English and Malay, and occupation). Participants first completed the IIM. Participants then completed the SVO SM and the same attention check used in Study 1 was presented. Next, participants are asked to complete the SDO measure. The definitions of the anticipated emotions that would be in the next scale, the ICE measure, were displayed. After participants have completed the ICE measure, they then played the UG once with an opponent whose name was randomly chosen from the three ethnic groups. Thus, a participant could be randomly assigned either a Malay receiver (e.g., Nurul or Aini [female]; Ali or Samad [male]), a Chinese receiver (e.g., Siew Ling or Sui Mei [female]; Chi Yung or Jian Hong [male]), or an Indian receiver (e.g., Shantini or Lakshmi [female]; Viknesh or Kumar [male]) in the UG. The assigned receiver was always the same gender as the allocator. Participants were then asked whether they had taken their participation in the study seriously. Finally, participants were debriefed.

#### 4.2.2 Results

Out of 565 participants, data from 371 participants ( $M_{age} = 23.05$ ,  $SD = 4.06$ ) were retained for analysis. There were 81 males and 290 females in the final sample. I excluded participants who failed the attention check ( $N = 62$ ) and whose response time was either

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<sup>11</sup> In order to divide the gift voucher according to participants' allocation in the Ultimatum Game (UG), I needed to retrieve the minimal offer that each participant would accept (see Chapter 3). However, this information was not collected in the study. Because of this, each winner was given the maximum amount that they could win which was RM60 (approximately £11) in gift vouchers.

shorter than 2.5 times the median response time ( $N = 37$ ) or longer than 2.5 times the median response time ( $N = 29$ ). Because participant ethnicity was a between-subjects factor, I excluded participants whose ethnicity was ‘other’ ( $N = 1$ ) and also mixed ethnic individuals ( $N = 16$ ). Because I did not recruit a sufficient number of Indian participants, data from participants who were of Indian ethnicity ( $N = 49$ ) were also not included in the analyses. I included participants who identified themselves as Chinese ( $N = 197$ ) or Malay ( $N = 174$ ). Data included a slightly higher proportion of Chinese participants due to recruitment from private universities in Malaysia, where there are more non-Malays enrolled. This dates back to the implementation of the NEP (G. K. Brown, 2007; White, 2015).

A Mann-Whitney test was used to investigate whether participants differed in their allocations to their ingroup and outgroup members. Allocations to ingroup members ( $M = 14.53$ ,  $SD = 2.96$ ,  $Mdn = 15.00$ ) did not differ significantly from allocations to outgroup members ( $M = 14.46$ ,  $SD = 2.84$ ,  $Mdn = 15.00$ ),  $U = 15414.50$ ,  $Z = .19$ ,  $p = .852$ .<sup>12</sup>

Next, I compared the allocation behaviours of the majority and minority groups toward others (irrespective of ethnicity) using a Mann Whitney Test. Results showed that majority ( $M = 14.38$ ,  $SD = 3.07$ ,  $Mdn = 15.00$ ) and minority ( $M = 14.57$ ,  $SD = 2.71$ ,  $Mdn = 15.00$ ) groups did not differ in their allocations towards other receivers,  $U = 16490.50$ ,  $Z = -.76$ ,  $p = .450$ . This is inconsistent with what was found in Study 1.

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<sup>12</sup> I then explored whether each allocators’ group membership (majority or minority) allocation behaviour differ towards their ingroup and outgroup members. Mann-Whitney tests showed that the minority group did not differ in their allocation behaviour towards their ingroup ( $M = 14.55$ ,  $SD = 2.99$ ,  $Mdn = 15.00$ ) and outgroup ( $M = 14.58$ ,  $SD = 2.56$ ,  $Mdn = 15.00$ ) members,  $U = 4286.50$ ,  $Z = -.71$ ,  $p = .476$  and also the majority group did not differ in their allocation behaviour towards their ingroup ( $M = 14.50$ ,  $SD = 2.96$ ,  $Mdn = 15.00$ ) and outgroup ( $M = 14.32$ ,  $SD = 3.13$ ,  $Mdn = 15.00$ ) members,  $U = 3247.00$ ,  $Z = -.38$ ,  $p = .701$ .



A *t*-test was used to compare Chinese and Malay allocators' SDO scores. As predicted, Malay allocators ( $M = 44.53$ ,  $SD = 10.40$ ) had significantly higher scores than Chinese allocators ( $M = 41.87$ ,  $SD = 12.85$ ),  $t(367) = -2.17$ ,  $p = .031$ .

Logistic regression was used to explore the combined effects of the three predictors allocators' group membership (majority coded 1 vs. minority coded 2), receivers' group membership (ingroup coded 1 vs. outgroup coded 2), and SDO score (centred) on the dichotomised dependent variable allocation behaviour (unfair coded 0 vs. fair coded 1).<sup>13</sup> In Model 1, the predictor variables allocators' group membership, receivers' group membership and the centered SDO score were entered. In Model 2, the three two-way interaction terms between the predictors were added (allocators' and receivers' group membership, allocators' group membership and SDO, and receivers' group membership and SDO). In Model 3, a three-way interaction term between allocators' group membership, receivers' group membership and SDO was added. Model 1 had a model fit of Nagelkerke  $R^2 = 5\%$ ,  $\chi^2(3) = 11.03$ ,  $p = .012$ . There were no main effects of either allocators' or receivers' group membership on allocation behaviour,  $B_{\text{allocator}} = -.20$ ,  $\text{Exp}(B) = .82$ ,  $p = .482$ , and  $B_{\text{receiver}} = .19$ ,  $\text{Exp}(B) = 1.21$ ,  $p = .530$ . However, there was a significant main effect of SDO score on allocation behaviour,  $B = -.04$ ,  $\text{Exp}(B) = .96$ ,  $p = .003$ . Participants with higher SDO score were less likely to make fair allocations to the other person. Model 2 showed no significant from Model 1, Nagelkerke  $R^2 = 5\%$ ,  $\chi^2(3) = .47$ ,  $p = .93$ . The two way interaction between allocators' group membership and receivers' group membership was not significant,  $B = -.40$ ,  $\text{Exp}(B) = .67$ ,  $p = .506$ , the interaction between allocators' group membership and SDO score

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<sup>13</sup> Exploration of the allocation data showed that the average tokens allocated towards others (regardless of the receivers' ethnicity) in the UG was not normally distributed (Kolmogorov-Smirnov:  $D(370) = 9.79$ ,  $p < .001$ ). I therefore dichotomized the allocation scores, whereby offers  $\geq 15$  were deemed to be fair and offers  $\leq 14$  were deemed to be unfair.

was not significant,  $B = -.01$ ,  $Exp(B) = 1.00$ ,  $p = .864$ , and the interaction between receivers' group membership and SDO score was not significant,  $B = .00$ ,  $Exp(B) = 1.00$ ,  $p = .979$ . Model 3 showed no significant improvement from Model 2, Nagelkerke  $R^2 = 5\%$ ,  $\chi^2(1) = .17$ ,  $p = .68$ . The three way interaction between allocators' and receivers' group membership and SDO score on allocation behaviour was not significant,  $B = -.02$ ,  $Exp(B) = .98$ ,  $p = .683$ . This reveals that there were no combined effects of allocators' group membership, receivers' group membership, and SDO. The only significant finding that emerged was a main effect of SDO that revealed that people who have a greater preference for group hierarchy in society were less likely to make fair allocations.

To explore whether the effect of allocators' SDO on allocation behaviour towards others (regardless of the receivers' ethnicity) was mediated by anticipated cooperative and competitive emotions, I used the PROCESS macro in SPSS (see Figure 4.3). The mediation analysis showed that the total effect of SDO on tokens allocated in UG was significant,  $b = -.03$ , 95% CI  $[-.055, -.005]$ . SDO was a significant predictor of ICE-PRG,  $b = -.03$ , 95% CI  $[-.043, -.024]$ , and ICE-PRG was a significant predictor of allocations made towards others,  $b = .63$ , 95% CI  $[.374, .887]$ . Moreover, the indirect effect of SDO on allocation behaviour through ICE-PRG was significant,  $b = -.02$ , 95% CI  $[-.034, -.012]$ . The direct effect of SDO on allocation was not significant,  $b = -.01$ , 95% CI  $[-.035, .017]$ , suggesting full mediation.

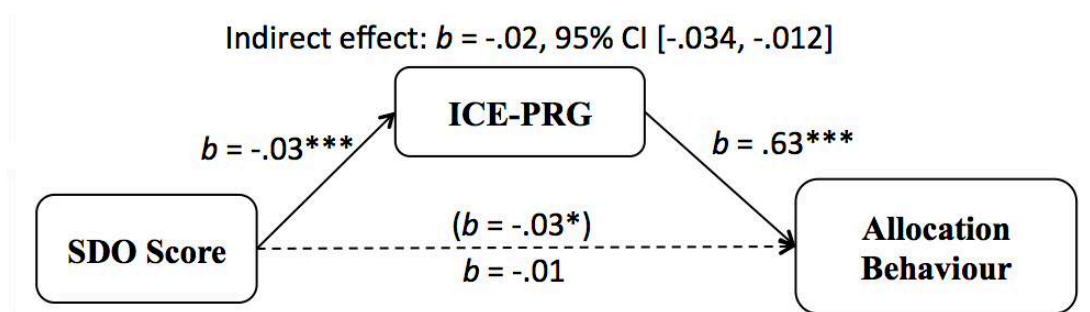


Figure 4.3. Indirect effect of Social Dominance Orientation on dichotomized averaged tokens allocated to the receiver (regardless of ethnicity) in the Ultimatum Game through ICE PRG. \*  $p < .05$ , \*\*\*  $p < .001$  (Study 2).

Finally, I used the PROCESS macro in SPSS to explore whether the effect of allocators' SVO on allocation behaviour towards others (regardless of the receivers' ethnicity) was mediated by anticipated cooperative and competitive emotions (as found in Study 1 and Chapter 3; see Figure 4.4). The mediation analysis showed that the total effect of SVO on tokens allocated in UG was significant and positive,  $b = .07$ , 95% CI [.405, .094]. SVO was a significant predictor of ICE-PRG,  $b = .03$ , 95% CI [.022, .044], and ICE-PRG was a significant predictor of allocations made towards others,  $b = .52$ , 95% CI [.275, .773]. In addition, the indirect effect of SVO on allocation behaviour through ICE-PRG was significant,  $b = .02$ , 95% CI [.009, .029]. However, the direct effect of SVO on allocation remained significant,  $b = .05$ , 95% CI [.004, .023], suggesting partial mediation.

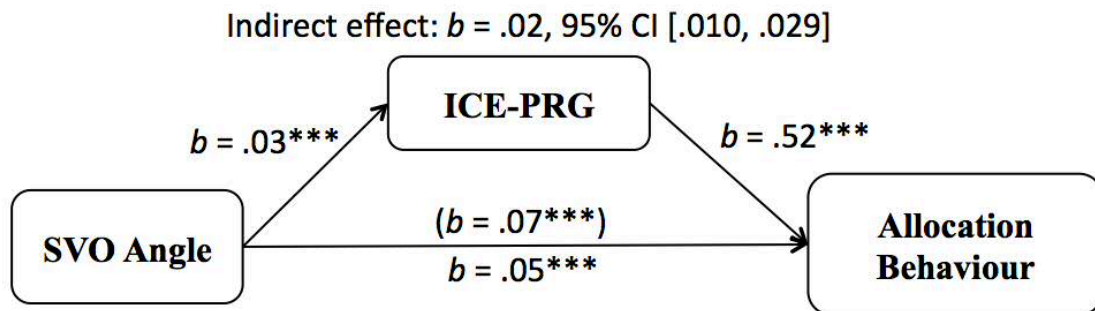


Figure 4.4. Indirect effect of Social Value Orientation on dichotomized averaged tokens allocated to the receiver (regardless of ethnicity) in the Ultimatum Game through ICE PRG. \*  $p < .05$ , \*\*\*  $p < .001$  (Study 2).

### 4.2.3 Discussion

Contrary to what was predicted, I found no support for the prediction that there would be a significant difference in participants' allocation behaviour towards ingroup and outgroup members in Study 2. This was despite the fact that the design was changed from within-subjects in Study 1 to a between-subjects design in Study 2 with a view to eliminating (or at least reducing) social desirability effects. Furthermore, Study 2 had a larger sample in an effort to increase statistical power. The current research therefore failed to replicate previous studies in which researchers have shown ingroup favouritism in social dilemmas assessing

cooperation (Balliet et al., 2014; Ben-Ner et al., 2009). This may reflect something about the specific cultural context in which the studies were conducted, a point that I will get back to again later in this discussion.

Study 2 sought to replicate the difference in allocation behaviour between majority and minority allocators that was found in Study 1. I also explored whether SDO played a role as a moderator of the relationship between majority or minority group membership and allocation behaviour. As noted above, in the Malaysian context, minority groups are not given the same privileges as the majority group. It therefore seems plausible that minority group members might seek to promote equality, whereas majority group members might be motivated to maintain status differences. Thus, it was predicted that the minority group would be fairer compared to the majority group. However, the findings of Study 2 showed no differences between majority and minority allocation behaviour towards others (regardless of ethnicity).

Despite this lack of a direct effect of group membership status on allocation behaviour, our findings did reveal that Malay participants scored generally higher on the measure of SDO than Chinese participants. Furthermore, there was a significant relation between SDO scores and allocation behaviour, such that those higher in SDO were less likely to be fair in allocating tokens to others. This provides at least some indirect evidence that SDO may be responsible for the differences between majority and minority members that was found in Study 1. Further analyses also showed that the effect of SDO on allocation behaviour towards others (regardless of the receivers' group membership) was fully mediated by anticipated emotions. This not only suggests that SDO plays a role in influencing allocation behaviour but also shows that the influence of individual differences in preferences for a hierarchical social order on individual and institutional discrimination operates through their effect on cooperative and competitive emotions.

However, there was no evidence of a moderating effect of SDO on allocation towards ingroup and outgroup receivers, nor was there evidence of a moderating effect of SDO on the relation between majority and minority group membership and allocation behaviour. A possible explanation for this is the use of the UG instead of the DG in Study 2. The UG is known to have strategic component, in the sense that allocators face a risk of their proposed allocation of resources being rejected by the receiver (Charness & Gneezy, 2008). This strategic component encourages allocators to offer more than the minimal amount to the receivers in order to avoid rejection (Scheres & Sanfey, 2006). However, participants did not appear to be more generous in their allocations in Study 2 than they were in Study 1, despite the incentive to offer more.

Another possible explanation for why Study 2 did not find any differences in allocation behaviour towards ingroup and outgroup members, and no differences in majority and minority group allocations may be that the participants were university students. Admittedly, research has shown that students are segregated based on religion and hold stereotypes about outgroup members (Mustapha, Azman, Karim, Ahmad, & Lubis, 2009; Tey, Awang, & Singaravelloo, 2009). However, in the same research, researchers found that undergraduate students were more tolerant about multi-ethnic interactions than secondary school students (Tey et al., 2009). They found that the perceptions of students at the University of Malaya regarding inter-ethnic relations improved between 2002 and 2008, although ethnocentrism still exists among these students (Tey et al., 2009). In addition, researchers found that university students do not see “polarisation” or ethnic tension as a racial issue, but rather they believe it has become a norm in the Malaysian society (Mustapha et al., 2009). The same researchers argued that the pattern of ethnic tension among university students occurs as ethnic segregation is commonly seen, but because of their academic

background they are more tolerant and understanding towards other ethnic groups (Mustapha et al., 2009).

### 4.3 General Discussion

The main aim of the studies reported in this chapter was to vary the group membership of the receiver in an economic game setting to see whether this manipulation would influence participants' allocation behaviour. However, there was no evidence of this predicted effect in either study. As noted earlier, the absence of an effect on allocation behaviour may have been due to impression management and social desirability concerns (Study 1) and using a non-representative sample that may have more liberal social attitudes (Study 2). A further possibility is that the manipulation of group membership (through the use of ethnically marked names) may have been too subtle, although the strong link between the names used and the ethnicity of someone with one of these names makes this less plausible. Given the consistent lack of any empirical support for the predicted effect of group membership, yet another possibility is that the influence of group membership on allocation behaviour in economic games is simply absent in the Malaysian context, despite the fact that it has been found in other cultural contexts (Efferson, Lalive, & Fehr, 2008; Whitt & Wilson, 2007). A final possibility is that by individualising the receiver (through giving him or her a proper name), the procedure used in the current studies may have inadvertently enhanced fair behaviour in most participants, because they may have been more reluctant to act unfairly towards a named individual than they would have been if the recipient had been anonymous (as recipients generally are in economic games).

A secondary objective of the research reported here was to investigate possible differences in allocations made by majority and minority groups. Interestingly, the results of Study 1 appeared to suggest that allocators belonging to the Malaysian minority groups were more generous towards others (regardless of the receiver's ethnicity) than the majority group,

perhaps demonstrating a stronger preference for equality in social relations (Pratto et al., 1994). However, this pattern of findings was not replicated in Study 2. Although this may have been due to some procedural differences between Studies 1 and 2, it is possible that the Study 1 result was a chance finding. On the other hand, in line with our reasoning that minority members would have a stronger preference for equality, Study 2 did reveal that minority group members had lower SDO scores than majority group members. In addition, there was a negative relation between SDO and allocation behaviour that was consistent with our predictions. However, there was no significant interaction between SDO and group membership of the receiver on allocation behaviour, and also no interaction between SDO and group status of allocators on allocation behaviour. Taken together, the current studies provide some suggestive evidence that belonging to a majority or minority social group plays a role in resource allocation behaviour, but the precise nature of this relation is still an open question.

Furthermore, the effect of group membership status on allocation behaviour in Study 1 and the relation between SDO and allocation behaviour were fully mediated by anticipated emotions. As mentioned previously, the full mediation suggests that the influence of individual differences in preferences for a hierarchical social order on individual and institutional discrimination operates through their effect on cooperative and competitive emotions. This provides additional support for the general argument that anticipated emotions play a key role in the expression of preferences for different resource outcomes.

In the research reported in this chapter, I initially adopted a Social Identity theory (SIT) framework to make predictions about how resources would be allocated to ingroup and outgroup members in the context of the three main ethnic groups in Malaysia. An alternative basis for making these predictions would have been Realistic Conflict theory (RCT; LeVine & Campbell, 1972), which argues that intergroup hostility arises as a result of mutually

exclusive goals and competition for scarce resources. However, in the context of the current studies, competition between the ethnic groups was not emphasised or made salient. Specifically, participants were given a number of tokens and were simply asked to divide these between themselves and another person. The aim of manipulating the ethnicity of the recipient was to investigate whether this would influence participants' allocation decisions. Because the experimental setup involved divisions between individuals, in principle there was no more competition between members of different ethnic groups than between members of the same ethnic group. Instead, the theoretical predictions depended on the general historical context of inter-ethnic relations in Malaysia carrying over to the specific context of the experiment. Given the absence of any competitive component in the experiments, it is perhaps no surprise that there was no evidence in support of RCT. However, in Study 1 of Chapter 4, participants from the minority group were found to allocate more tokens towards others (both ingroup and outgroup members) than the majority group. This suggested that Social Dominance Theory (SDT), which seeks to explain why and how social hierarchies are maintained, might be a more appropriate theory in the Malaysian context. It can be argued that a group-based hierarchy exists between the minority and majority groups in Malaysia, whereby the majority group is deemed to have a higher status in the society because they are given more privileges than members of minority groups. This suggested that the allocation behaviour observed in Study 1 may have reflected the kind of group-based hierarchy described by SDT. Thus, in Study 2 of this chapter I tested predictions derived from SDT.

Together with the studies reported in Chapter 3, the current studies robustly demonstrate that anticipated emotions at least partly mediate the relationship between individual differences in preferences for how resources should be allocated and how people actually allocate resources between themselves and another person. This not only replicates the main findings in Chapter 3, where SVO was shown to predict both anticipated



cooperative and competitive emotions and allocation behaviour, but also strengthens the main theoretical argument being advanced in this thesis, namely that differences in anticipated emotions provide a psychological explanation for the influence of SVO on allocation behaviour. Research has shown that most studies in the literature have tended to recruit samples from western populations, that is people who live in societies that can be characterised as WEIRD (Western, Educated, Industrialised, Rich, and Democratic), a fact that may result in findings that are not readily applicable to people living in the rest of the world (Henrich et al., 2010). Thus, one strength of the current studies is that by replicating the pattern of findings reported in Chapter 3 using a population from a non-Western country, in this case Malaysia, the current research shows the generalizability of the mediating role played by anticipated emotions in the relation between SVO and allocation behaviour. However, a note of caution may also be applicable here: Although the current findings suggest that this mediating role is generalizable, the findings may not generalise to Malaysian citizens who are less highly educated.

A limitation of Study 2 is the fact that it did not investigate whether participants differed in their anticipated cooperative and competitive emotions in relation to ingroup and outgroup members. This was because the ICE measure used in Study 2 was not specifically customized to manipulate the social identity of the receivers in the scenarios. Dropping the manipulation of receiver's social identity in the ICE measure used in Study 2 was done for pragmatic reasons - wanting to reduce the length of time needed to complete the study. Future studies should seek to collect data on the extent to which respondents anticipate cooperative and competitive emotions when allocating resources to an ingroup or outgroup member. This may also provide further insight into the role of anticipated emotions in mediating the effect of SDO on allocation behaviour found in Study 2.

In conclusion, although the central manipulation of receiver's social identity did not influence allocation behaviour in the predicted way, there was some indication of variation in the allocation behaviour of majority and minority groups towards others in Study 1. However, this finding was not replicated in Study 2 and this is something that could be pursued in future research. The fact that SDO scores did predict allocation behaviour, and also differed significantly between members of the Malay majority group and the Chinese minority group suggests that the majority/minority status of allocators needs to be taken into account in research on allocation behaviour in a multicultural society.

Although the main findings of the current studies were not in line with predictions, the finding that anticipated emotions played a significant role in mediating the relation between SVO and allocation behaviour is consistent with the notion that anticipated emotions play a role in resource allocation decision making. This was true even in a different cultural population. Furthermore, the finding that the negative effect that SDO has on allocations towards others is also mediated by anticipated emotions speaks to the generality of anticipated emotions as a psychological mechanism that can explain how prosocial, individualistic, and competitive dispositions are expressed. Stronger evidence that anticipated emotions play a causal role in shaping allocation behaviour will be provided in the next chapter (Chapter 5), where I report studies in which I experimentally manipulated anticipated emotions in a decision making context.

## 5 Chapter 5: Emotion Regulation

### 5.1 Introduction

*“A man who is master of himself can end a sorrow as easily as he can invent a pleasure. I don't want to be at the mercy of my emotions. I want to use them, to enjoy them and to dominate them.”* (Wilde, 1974)

In the previous chapters I have established that prosocial individuals anticipate more cooperative and fewer competitive emotions, which leads to fairer allocations. What would happen to prosocials' allocation behaviour when their intuitive cooperative emotions are reduced? A common saying is: "Don't make decisions when you are angry and don't make promises when you are happy." This implies that decisions that are made under the influence of people's current feelings may, later on, be regretted. Dorian Gray, a character in *The Picture of Dorian Gray* (Wilde, 1974), states that he manages his emotions by putting a stop to feeling sorrow (due to his lover's death) by indulging in pleasurable and amoral acts that would make him feel less sorrowful (more happy/pleasurable). By adjusting his actions, he replaces the current emotional response to a situation with a new emotional response. This is a form of emotion regulation. When relating it to allocation behaviour, if an individual anticipates pride about being fair and regret about being unfair, s/he would aim to feel positive and his/her action will therefore be influenced by the emotions anticipated. However, what happens to this person's allocation behaviour if s/he is asked to regulate these emotions (i.e., detach him/herself from these emotions or focus on his/her anticipated emotions). In this chapter, I will be investigating whether regulating anticipated emotions can affect allocation behaviour.

#### 5.1.1 What is emotion regulation? When and why do we regulate our emotion?

Emotion regulation involves replacing the current emotional response towards a situation with a new emotional response (Gross, 1998, 2002). Knowledge of how to regulate

emotions requires the awareness of the most effective strategies to modify and nurture emotions in a specific situation (Côté, DeCelles, McCarthy, Van Kleef, & Hideg, 2011). According to Salovey and Mayer's (1990) model, emotion regulation knowledge is a core facet of emotion intelligence and it is assumed by their model that emotions can be managed to achieve specific goals.

Research that has shown that emotion regulation knowledge facilitates both prosocial and deviant behaviour, depending on individual differences (Côté et al., 2011). In the current study, I focused on whether emotion regulation knowledge facilitates prosocial behaviour because this is more relevant to the current research. In their research, Côté and colleagues first asked their participants to complete a measure of emotion-regulation knowledge, called the Situational Test of Emotion Management (STEM; Maccann & Roberts, 2008). The STEM assesses whether participants are aware of different strategies for emotion regulation in different situations by showing that they know what to do when faced with emotional situations. The strategies included in the measure were amplification, maintenance or suppression of emotions in specific situations. Participants' moral identity and prosocial behaviour were also assessed using a social-dilemma situation adapted from Brewer and Kramer (1986). They found that emotional regulation knowledge strengthens the relationship between moral identity and prosocial behaviour. More specifically, the more emotion regulation knowledge an individual has, the more positive is the association between moral identity and prosocial behaviour. The researchers argued that individual differences may motivate certain goals, but that these goals may not be achieved without knowing what to do in a certain emotional situation (Côté et al., 2011). In other words, emotion regulation knowledge contributes to knowledge of which strategies can be utilised to achieve certain goals.

Past researchers have distinguished between two types of emotion regulation strategies: antecedent-focused and response-focused strategies (Gross & John, 2003). Antecedent-focused strategies refer to regulation strategies that are employed before experiential, behavioural and physiological effects of the emotional process take place. Response-focused strategies refer to regulation strategies in direct response to the experiential, behavioural and physiological aspects of the emotional reaction. The process model of emotion regulation (Gross, 1998) distinguishes five points where emotions may be regulated. At the first four of these points, antecedent-focused strategies can be employed: 1) selection of the situation, 2) modification of situation, 3) attention deployment, 4) cognitive change through reappraisal. At the fifth point, a response-focused strategy may be employed, where the experiential, behavioural and physiological responses are modulated (Gross, 1998, 2015).

According to traditional, hedonic accounts of emotion regulation, individuals are driven to decrease negative feelings and increase positive feelings (Larsen, 2000). Studies have shown that, with regulation, people are able to increase and decrease positive (Giuliani, McRae, & Gross, 2008; Quoidbach, Mikolajczak, & Gross, 2015) and negative emotions (Van't Wout, Chang, & Sanfey, 2010). With regard to the use of emotion regulation in resource allocation situations, researchers have examined cognitive reappraisal and suppression strategies. For example, researchers have investigated whether cognitive reappraisal and suppression can reduce the negative feelings that arise from receiving an unfair offer in an Ultimatum Game and whether this influences the decision to either accept or reject the offer (Van't Wout et al., 2010). These researchers asked their participants to reappraise the unfair offers (allocated by another person) by instructing them to adopt a neutral attitude. Participants who were in the suppression condition, on the other hand, were asked to inhibit any emotion-expressive behaviour. They found that participants who

reappraised the unfair offers were more likely to accept such offers, compared to participants who suppressed their emotions. The researchers argued that because reappraisal is an antecedent emotion regulation strategy, it would be easier to take a different perspective on the current situation before experiencing an emotional response. However, in the case of suppression, a response-focused strategy, it may be that the elicited emotions still affect the person's behaviour.

### **5.1.2 Current studies**

The findings reported in Chapters 3 and 4 of this thesis revealed that anticipated emotions act as a mediator in the relationship between SVO and allocation behaviour. In particular, participants who are more prosocial were found to anticipate more cooperative than competitive emotions, which appeared to lead to fairer allocations to others. The studies reported in Chapters 3 and 4 relied on correlational data. However, in order to demonstrate the assumed causal relation between anticipated emotions to allocation behaviour, an experimental study is needed (Spencer et al., 2005). To achieve this, I decided to experimentally manipulate the proposed mediator (anticipated emotions) and examine the influence this would have on allocation behaviour.

Past research has shown that when someone changes his or her behaviour to achieve the desired emotions and avoid undesirable emotions, this represents a form of emotion regulation (Van Der Schalk et al., 2012). More specifically, researchers found that when participants were asked to anticipate pride about being fair, they acted in a more fair way and that when they were asked to anticipate regret about being fair, the participants acted in a less fair way (Van Der Schalk et al., 2012). Also, because the distribution of ICE-PRG scores (in the previously reported empirical chapters) suggests that people vary in their anticipated emotions, in the current studies I manipulated the degree of emotion anticipated before making an allocation. Thus, the main aim of the research reported in this chapter was to

investigate the effects of emotion regulation on allocation behaviour. Studies in Chapter 3 and 4 have shown that most participants are prosocial by disposition and they anticipate mostly cooperative emotions and less competitive emotions which lead to more fair allocation behaviour. Thus, assuming that most participants are prosocial by disposition, such that their natural tendency is to anticipate cooperative emotions, it was hypothesised that when participants are asked to down-regulate their emotions, they would allocate fewer tokens to the other person than they would in a control condition. By contrast, when participants are asked to up-regulate their emotions, they should allocate more to the other person than they would in the control condition.

The second aim of the current research was to investigate whether there is an interaction between SVO and emotion regulation on allocation behaviour. I hypothesised that emotion regulation strategies would moderate the relationship between SVO and allocation behaviour. In particular, when prosocials are asked to down-regulate their emotions, they should down-regulate their cooperative emotions, which should lead to more unfair allocations. Proselfs on the other hand, when asked to down-regulate their emotions, should down-regulate competitive emotions, and therefore be less likely to make unfair allocations. By contrast, when prosocials are instructed to up-regulate their emotions, they should up-regulate cooperative emotions, which should lead to more fair allocations. When proselfs are asked to up-regulate their emotions, they should up-regulate competitive emotions, and this should lead to less fair allocations. Additionally, because each participant made allocations in three successive DGs, I explored whether these predicted effects of emotion regulation would increase across the three games.

In Study 1, I instructed participants to either up-regulate or down-regulate his/her emotions before making allocations in an economic game. In Study 2, I asked participants to down-regulate specific emotions before making allocations in an economic game. In both

studies, a control condition was also included. The economic game that was used to measure allocation behaviour was the Dictator Game (DG). This is because the DG is a purer measure of fairness in allocation behaviour and should be more reflective of the participant's SVO. Both studies were approved by the Ethics Committee of Cardiff University's School of Psychology.

## 5.2 Study 1

### 5.2.1 Method

#### 5.2.1.1 Design and participants

Participants were 203 students (181 female, 21 male and 1 undisclosed;  $M_{age} = 18.92$ ,  $SD = .92$ ) recruited from the School of Psychology, Cardiff University. In exchange for their participation, participants were given two course credits and were automatically included in a lottery worth up to a maximum of £30 in Amazon vouchers. The lottery of £30 reflected their allocation made in the DG. Further explanation of how these lotteries were conducted is given below. At an earlier time, participants' SVO data were recorded.<sup>14</sup> The questionnaire was administered online using Qualtrics.

#### 5.2.1.2 Materials

**Index of Cooperative and Competitive Emotions (ICE) Measure.** This measure is the same as the one that was developed in Chapter 2. The ICE measure consisted of six allocation scenarios representing fair (15:15; 18:18; 21:21) and unfair (20:10; 24:12; 28:14) divisions of tokens. Participants were presented with these scenarios and were asked to imagine that they had made specific divisions between themselves and another anonymous person (the receiver). For example, in one item participants were asked to imagine that there

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<sup>14</sup> SVO data from only 200 students were collected ( $M_{age} = 18.90$ ,  $SD = 1.55$ ) of whom 26 were males and 174 were females.



were 30 tokens at stake and that the participant kept 15 tokens for him/herself and gave 15 tokens to the receiver. Participants were told that the receiver had to accept the allocation regardless of what was offered to them and were asked to rate how they would feel about the allocation in each scenario, using a scale of 1 (not at all) to 5 (very much). The six emotions that were assessed were *pleased*, *proud*, *regretful*, *guilty*, *ashamed* and *disappointed*.

**Emotion regulation manipulation.** There were three conditions in this study: an up-regulating condition, a down-regulating condition and a control condition. In the up-regulating and down-regulating conditions, participants were presented with a text stating that when they played the DG with an anonymous person (the receiver), they might find themselves thinking about how they would feel if they were to offer more or less to the receiver. Specifically, the instruction read: “When you play the game with the other person, you may find yourself thinking about how you would feel if you were to offer more or less to the other person”. In the up-regulating condition, the instruction asked participants to focus on these feelings and to be guided by them when they made their decisions. Specifically, the instruction read: “We would like you to focus on these feelings and to be guided by them when you make your decision”. However, in the down-regulating condition, the instruction specifically asked participants to put such thoughts out of their mind and try to play the game in a detached and dispassionate way. Specifically, the instruction read: “We would like you to put such thoughts out of your mind. Try to play the game in a detached and dispassionate way”. These instructions were presented to participants before each of the three DGs they played. In the control condition, no instruction was presented to participants and they simply played the DG three times.

**Social Value Orientation.** Participants' SVO was assessed using the six primary items of the SVO Slider Measure (SVO-SM; Murphy et al., 2011). Each item has 9 allocation options whereby a number of points is awarded to the participant and an anonymous other,

and participants choose their most preferred allocation. For example, participants may choose an option representing 75 tokens allocated for themselves and 75 tokens for the receiver. From participants' choices, an SVO 'angle' can be computed. Larger angles reflect greater prosociality. Specifically, altruists would have an angle greater than  $57.15^\circ$ ; prosocials would score angles between  $22.45^\circ$  and  $57.15^\circ$ ; individualists would have angles between  $-12.4^\circ$  and  $22.45^\circ$ ; and competitive individuals would have an angle less than  $-12.04^\circ$ . In the current research, I used SVO angle score as a continuous variable.

**Allocation behaviour.** The Dictator Game (DG; Kahneman et al., 1986) was used to measure allocation behaviour. Participants played the role of allocator and were given a total of 30 tokens to divide between themselves and an anonymous other ('the receiver'). Participants were told that the tokens had real monetary value, whereby 1 token was equivalent to £1. At the end of the study, two participants would be randomly selected and paid out according to the allocations made in the economic games. One of the participants was randomly chosen as the allocator and the other participant would automatically be the receiver. Because there were three DGs, the allocation was based on a randomly chosen DG. Thus, if the participant allocated  $20_{\text{allocator}}:10_{\text{recipient}}$  in the randomly chosen DG, then the lottery winners would be paid out accordingly.

### 5.2.1.3 Procedure

Participants' SVO data was collected at a mass testing session at the start of the academic year. The actual study took place on average five months later. Participants received a unique ID that enabled retrieval of their SVO data while preserving anonymity. Participants first completed a consent form. They then completed a demographics questionnaire (measuring age, gender, fluency in English, study course and year of study). Next, participants completed the ICE measure. The six allocation scenarios in each set were presented in a randomized order. After this, participants were randomly assigned to one of

the three experimental conditions: down-regulating, up-regulating or control. They were then asked to allocate resources between themselves and an anonymous receiver in three separate DGs. After that, participants were asked whether they had taken their participation in the study seriously. Finally, participants were thanked, debriefed and rewarded with course credits for their participation.

## 5.2.2 Results

### 5.2.2.1 Data treatment

Data from 170 participants (151 female, 19 male;  $M_{age} = 18.93$ ,  $SD = 0.93$ ) were retained for analysis. Data from participants who participated in the survey twice were detected through duplicated unique IDs ( $N = 21$ ) and were excluded from analyses. Data from participants who admitted that they had not answered the questionnaire seriously ( $N = 2$ ) and whose response times were longer than 2.5 times the median response time ( $Mdn = 8.23$ ;  $N = 10$ ) were also excluded from analyses. There were 56 participants in each of the up-regulating and down-regulating conditions and 58 in the control condition. Of these, there were 111 participants who reported their unique ID and for whom their SVO scores could be retrieved. The majority of the participants scored relatively highly, showing that the sample was dispositionally prosocial ( $M = 32.33$ ,  $SD = 10.10$ ).

The ICE score (ICE-PRG) was calculated in the same way as was described in Chapter 2. Positive scores reflected more cooperative emotions (pride about being fair, regret and guilt about being unfair), zero reflected the fact that there was no difference in the anticipation of emotions when making equal or unequal allocations, and a negative score represented competitive emotions (regret and guilt about being fair and pride about being unfair). The distribution of the final ICE score (see Figure 5.1) shows that there were relatively few scores below the mid-point of the scale, with the majority of participants expressing more cooperative emotions than competitive emotions. Additionally, Figure 5.2

shows that the relation between SVO and ICE PRG. The scatterplot shows that participants who were higher in SVO reported higher anticipated cooperative emotions than competitive emotions.

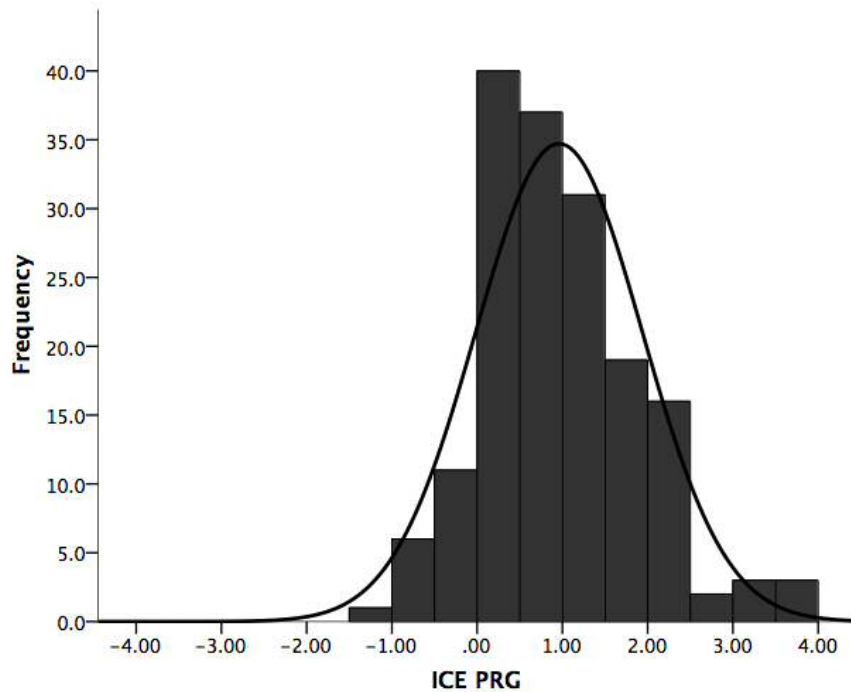


Figure 5.1. Distribution of ICE-PRG scores (Study 1).

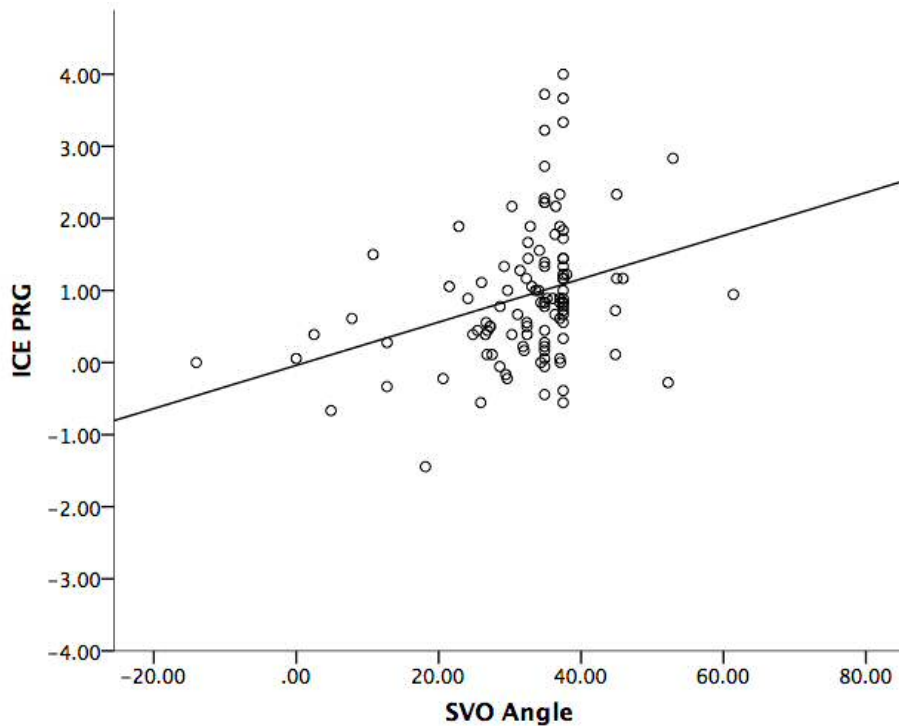


Figure 5.2. Relation between Social Value Orientation and ICE PRG (Study 1).

### 5.2.2.2 Allocation behaviour

Exploration of the allocation behaviour data showed that the average number of tokens allocated to the receiver across the three games was not normally distributed, Kolmogorov-Smirnov:  $D(170) = 2.71, p < .001$ . Thus, to compare allocation behaviour across the 3 conditions, a Kruskal Wallis Test was used (one for each game). Results showed that there was a significant effect of condition in Game 2 and Game 3 (see Table 5.1). Follow-up Mann-Whitney tests revealed that the number of tokens allocated to the receiver was significantly different in the down-regulating than in the control condition, for Game 2,  $U_{G2} = 1161.00, p = .01$  and Game 3,  $U_{G3} = 978.50, p < .01$  but not for Game 1,  $U_{G1} = 1337.50, p = .09$  ( $p$ -value with Bonferonni correction). However, this number was not significantly different in the up-regulating condition than in the control condition for any of the three games,  $U_{G1} = 1546.50, p = .63$ ,

$U_{G2} = 1439.00$ ,  $p = .25$ , and  $U_{G3} = 1619.00$ ,  $p = .98$  ( $p$ -value with Bonferonni correction).<sup>15</sup> Additionally, follow-up Mann Whitney tests showed that the number of tokens allocated to the receiver was significantly different in the up-regulating condition than in the down-regulating condition for Game 2,  $U_{G2} = 904.00$ ,  $p < .01$  and Game 3,  $U_{G3} = 886.00$ ,  $p < .01$  but not in Game 1,  $U_{G1} = 1213.50$ ,  $p = .081$  ( $p$ -value with Bonferonni correction).

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<sup>15</sup> I ran two post-hoc power analyses using G\* Power (Faul et al., 2009; Faul et al., 2007) to see if the sample recruited in the current study had sufficient power to find the predicted effects: one for the comparison between the down-regulation and control condition, and one for the comparison between the up-regulation and control condition. Because the effect of the emotion regulation manipulation on allocation behaviour became more pronounced over the course of the three games, I only used data from G3 in the post-hoc power analyses. The significant difference between the down-regulation and control condition in allocations had a medium effect size of Cohen's  $d = .69$  (Cohen, 1969, p. 38). A post-hoc power analysis showed that the study had a high power of .94 to find this effect. However, the difference between the up-regulation and the control conditions had only a very small effect size, Cohen's  $d = .03$  (Cohen, 1969, p. 38) and the post-hoc power analysis revealed that the study had very low power to find this effect ( $1 - \beta = .03$ ). This suggests that the study may have been underpowered, however a sensitivity test (using the G\*Power software) showed that the current study had sufficient power ( $1 - \beta = .80$ ) to find a medium effect of Cohen  $d = .54$  (Cohen, 1969, p. 38). Overall, the study had sufficient power to find a difference between the control and down-regulation conditions, but the low power achieved for the comparison between the up-regulation with the control conditions suggests that there simply may not have been a difference between these conditions. In Study 2, I aimed to recruit a comparable number of participants for each condition as there was satisfactory power for the difference between the control and the down-regulation conditions.

I also investigated whether allocation behaviour differed significantly between games within each of the experimental conditions. Friedman's ANOVA tests revealed a significant effect of game in the down-regulation condition (see Table 5.1). Post hoc analysis with Wilcoxon signed-rank tests revealed a statistically significant reduction in allocation behaviour between Game 1 and Game 2, ( $Z = -3.28, p = .001$ ) and between Game 1 and Game 3, ( $Z = -3.44, p = .001$ ).

Table 5.1. *Median allocations and test statistics in each game and condition (Study 1).*

	G1	G2	G3	Friedman's ANOVA ( $\chi^2$ )
Up-regulating (Median)	15	15	15	0.53
Down-regulating (Median)	10	10	9	<b>17.89***</b>
Control (Median)	15	14.5	15	3.3
Kruskal Wallis ( $\chi^2$ )	5.44	<b>16.85***</b>	<b>21.43***</b>	

\*\*\* $p < .001$

### 5.2.2.3 SVO and emotion regulation

A logistic regression was conducted to determine the joint effect of SVO and emotion regulation conditions on allocation behaviour in each of the three games. Allocation behaviour was dichotomized into fair (allocation of 15 or more tokens to the receiver) and unfair (allocation of 14 or fewer tokens to the receiver). Two dummy-coded variables were created that respectively contrasted the up-regulation and the down-regulation conditions with the control condition. SVO angle score was centred and entered into Model 1 together with both dummy-coded condition variables. In Model 2, the SVO-by-condition interaction terms were included. The results are presented in Table 5.2 for Games 1, 2 and 3. In all three games there was a significant main effect of SVO. The effect of down-regulation versus the control condition was significant in Game 2 and Game 3 and was trending towards significance in Game 1. This showed that participants in the down-regulation condition were less likely to make a fair offer than participants in the control condition.

The interaction terms were not significant (although some were marginal). Despite the fact that the interactions did not reach conventional thresholds for significance, the pattern of results seen in Figure 5.3 may suggest that the relation between SVO and allocation behaviour is moderated by emotion regulation. Figure 5.3 showed that in all three games, there were a significant relation between SVO and allocation behaviour in the control condition, in Game 1,  $B = .119$ ,  $Exp(B) = 1.13$ ,  $p = .025$ ; Game 2,  $B = .149$ ,  $Exp(B) = 1.16$ ,  $p = .019$  and Game 3,  $B = .131$ ,  $Exp(B) = 1.14$ ,  $p = .018$ . However, there were no significant effects of SVO on allocation behaviour in the up-regulating condition for all three games, Game 1,  $B = .071$ ,  $Exp(B) = 1.07$ ,  $p = .147$ ; Game 2,  $B = .017$ ,  $Exp(B) = 1.02$ ,  $p = .683$ , and Game 3,  $B = .006$ ,  $Exp(B) = 1.01$ ,  $p = .883$  and in the down-regulating condition for Game 1,  $B = .059$ ,  $Exp(B) = 1.06$ ,  $p = .276$ ; Game 2,  $B = .044$ ,  $Exp(B) = 1.05$ ,  $p = .420$ ; and Game 3,  $B = .038$ ,  $Exp(B) = 1.04$ ,  $p = .487$  (see Figure 5.3).



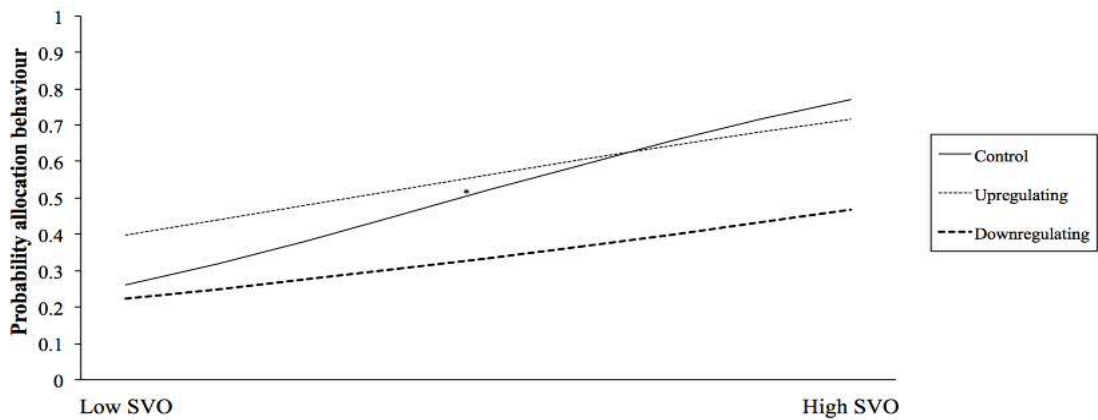
Table 5.2. Logistic regression of social value orientation and emotion regulation conditions on allocation behaviour in Game 1, 2, and 3 (Study 1).

	Game 1			Game 2			Game 3		
	B	Odds Ratio	p-value	B	Odds Ratio	p-value	B	Odds Ratio	p-value
<b>Model 1</b>									
SVO	.09**	1.09**	.003	.07**	1.07**	.008	.06**	1.07**	.010
Up-regulating vs. control	.19	1.17	.725	.25	.54	.579	-.33	.72	.463
Down-regulating vs. control	-.87 <sup>†</sup>	.42 <sup>†</sup>	.059	<b>-1.08*</b>	<b>.14*</b>	.021	- <b>1.55*</b> **	<b>.21***</b>	.001
<b>Model 2</b>									
SVOxUp-regulating	-.05	.95	.506	-.13 <sup>†</sup>	.88 <sup>†</sup>	.085	-.13 <sup>†</sup>	.88 <sup>†</sup>	.073
SVOxDown-regulating	-.06	.94	.425	-.11	.90	.212	-.09	.91	.239
<b>Model 1</b>	$R^2 = 16.00\%, \chi^2(3) = 16.72, p < .001$			$R^2 = 15.40\%, \chi^2(3) = 16.00, p = .001$			$R^2 = 17.00\%, \chi^2(3) = 17.80, p < .001$		
<b>Model 2</b>	$R^2 = 16.70\%, \chi^2(2) = .785, p = .675$			$R^2 = 18.80\%, \chi^2(2) = 3.82, p = .148$			$R^2 = 20.50\%, \chi^2(2) = 4.04, p = .132$		

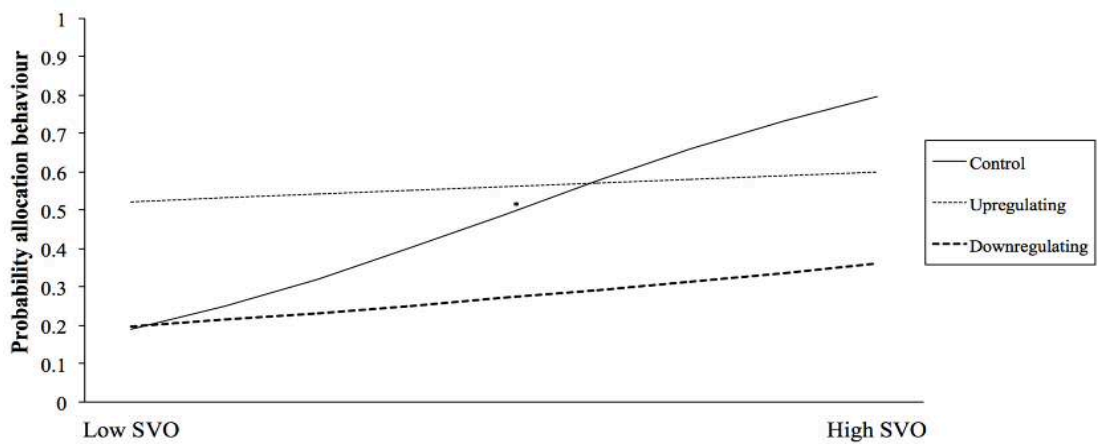
Notes: The  $R^2$  reported are Nagelkerke  $R^2$ . Model 1  $\chi^2$  tests Model 1 as a whole. Model 2  $\chi^2$  tests the improvement from Model 1 to Model 2.

\*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$ , <sup>†</sup>  $p < .09$

a)



b)



c)

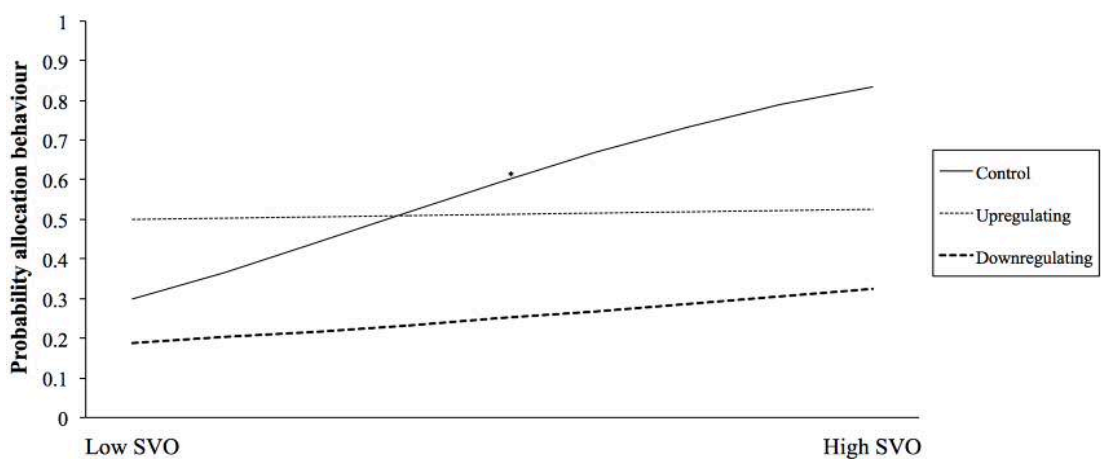


Figure 5.3. Moderating effect of emotion regulation conditions in Game 1(a), Game 2(b) and Game 3(c) on the SVO-allocation behaviour relationship (two-way interaction with categorical moderators) (Study 1). \*  $p < .05$

### 5.2.3 Discussion

The main aim of this study was to provide causal evidence for the effect of the proposed mediator, anticipated emotions, on allocation behaviour (Spencer et al., 2005) by examining whether an emotion regulation manipulation has a significant effect on allocation behaviour. As seen in Table 5.1, there was a significant effect of emotion regulation on allocation behaviour, but only for the down-regulation instruction. This shows that when participants were asked to down-regulate their emotions, this resulted in the decrease in tokens allocated across the three games. The findings showed that the majority of participants were prosocial and overwhelmingly anticipated cooperative rather than competitive emotions. Thus, the results suggest that when they were asked to down-regulate their emotions, they down-regulated cooperative emotions (pride about being fair, regret about being unfair) and this resulted in less fair allocation behaviour towards the other person. On the other hand, when they were asked to up-regulate their emotions, they should have up-regulated cooperative emotions and this in turn should have led them to give more to others. However, the results did not reveal a significant main effect of up-regulating emotions on allocation behaviour, which suggests that a predominantly prosocial sample cannot be led to be fairer in their allocation behaviour. Because the nature of prosocials is to be generous, they would instinctively allocate fairly (50:50) to others. This suggests that a ceiling effect probably limited the effectiveness of the up-regulation condition. Despite the lack of a significant effect of the up-regulation instruction, the present study provides good experimental evidence that anticipated emotions have an impact on allocation behaviour.

A second aim of this study was to examine whether there was an interaction between SVO and emotion regulation strategies in shaping allocation behaviour. Although there were no significant interactions between SVO and the emotion regulation strategies on allocation behaviour, there was a consistent tendency for the strength of the relation between SVO and

allocation behaviour to vary across the three conditions. In the control condition there was a strong and positive relation between SVO and allocation behaviour across the three games (see Figure 5.3). This reflects the established relation between SVO and allocation behaviour: the more prosocial an individual is, the more s/he allocate towards others (Bogaert et al., 2008; Messick & McClintock, 1968). However, SVO was not a significant predictor of allocation behaviour in either the up-regulating or the down-regulating conditions (see Figure 5.3). The fact that the results in these conditions did not show a similar pattern as the one in the control condition provides evidence that the manipulation of anticipated emotions was effective. Asking participants to either up-regulate or down-regulate their emotions disrupted the normally stable influence of SVO preferences on allocation behaviour.

Lastly, I explored whether the effect of the up-regulating and down-regulating instructions would become stronger across the three games. The results showed that the down-regulation manipulation had a significant main effect on allocation behaviour in Games 2 and 3. This builds on the previous evidence that the manipulation had an effect on allocation behaviour, especially in the down-regulation condition, and suggests that repeating the instruction to discount one's anticipated emotions has a greater impact on allocation decisions.

### 5.3 Study 2

The results of Study 1 demonstrate that down-regulation of anticipated cooperative emotions decreases fairness in DG allocations. However, the results do not tell us precisely which emotions participants were up-regulating or down-regulating. This is due to the generality of the instruction asking participants to up-regulate or down-regulate “anticipated emotions”, rather than specific anticipated emotions such as anticipated pride about being fair, regret and guilt about being unfair, or anticipated regret and guilt about being fair and pride about being unfair. In other words, the instructions used in Study 1 did not distinguish

between cooperative and competitive emotions. In Study 2, I therefore aimed to manipulate specific anticipated cooperative (pride about being fair and regret about being unfair) and competitive emotions (regret about being fair and pride about being unfair), in order to investigate their effect on allocation behaviour. This would allow me to disentangle the specific effects of the down-regulating cooperative and competitive emotions.

Because Study 1 revealed a stronger effect of down-regulation than up-regulation on allocation behaviour, in Study 2 I decided to focus on the down-regulation of cooperative and competitive emotions. Study 2 included five down-regulation conditions: down-regulation of pride about being fair, down-regulation of regret about being unfair, down-regulation of regret about being fair, down-regulation of pride about being unfair, and a control condition in which no instructions about emotion regulation were given. Anticipated guilt was not included in the manipulation for pragmatic reasons. Because this would involve adding two further conditions, it would have resulted in a total of seven conditions. This would have stretched the participant resources available through the subject pool.

It was hypothesised that when individuals are asked to down-regulate cooperative emotions (pride about being fair and regret about being unfair) they will behave less fairly by allocating unequal tokens in a way that favours themselves. On the other hand, when individuals are asked to down-regulate competitive emotions (regret about being fair and pride about being unfair), it was hypothesized that they will behave more fair by giving equal or more tokens to others.

### **5.3.1 Method**

#### **5.3.1.1 Design and participants**

Participants were 240 students (206 female, 32 male and 2 undisclosed;  $M_{age} = 18.78$ ,  $SD = .94$ ) recruited from the School of Psychology, Cardiff University. In exchange for their participation, participants were given course credits. Additionally, participants were

automatically included in a lottery worth up to a maximum of £30 in Amazon vouchers. The lottery of £30 reflected their allocation made in the DG. The lottery was conducted in the same way as Study 1. At an earlier time, participants' SVO data had been collected.<sup>16</sup> Data were collected online using Qualtrics.

### 5.3.1.2 Materials

As in Study 1, the ICE measure was used to measure participants' anticipated emotions, the SVO-SM (Murphy et al., 2011) was used to measure participants' individual preferences regarding resource allocation, and the DG was used to measure participants' allocation behaviour. The main difference with Study 1 concerned the emotion regulation instructions. In Study 2, there were 5 conditions: down-regulation of anticipated pride about being fair condition (DP-FC), down-regulation of anticipated regret about being unfair condition (DR-UFC), down-regulation of anticipated regret about being fair condition (DR-FC), down-regulation of anticipated pride about being unfair condition (DP-UFC), and a control condition (no emotion regulation instruction). The DP-FC and DR-UFC conditions were both intended to down-regulate cooperative emotions while the DR-FC and DP-UFC were both intended to down-regulate competitive emotions. In each of the down-regulation conditions, participants were told that when they played the game with the receiver, they might find themselves thinking about how they would feel if they were to offer more or less to the receiver. Specifically, participants might think about how proud/pleased (or regret/disappointed, depending on condition) they would feel if they divided the resources equally (or unequally, depending on condition) between themselves and the receiver. Participants in all four down-regulation conditions were asked to put such thoughts out of their mind when playing the game and do not think about how proud and pleased (or regretful

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<sup>16</sup> Out of 240 participants, the SVO data for 233 participants were retrieved.

and disappointed) they would feel. They were instructed to play the game in a detached and dispassionate way. The full instructions for each condition are shown in Appendix F.

### 5.3.1.3 Procedure

The procedure for Study 2 was similar to that of Study 1. The SVO measure was administered during a mass testing session at the start of the academic year. The actual study took place on average one month later and participants provided a unique ID code they had been given during the mass testing session, which enabled retrieval of their SVO data. First, participants completed a consent form. Next, participants completed a set of demographic questions (e.g., age, gender, self-reported fluency in English, university course and year of study). Participants then completed the ICE measure. Next, each participant was randomly assigned to one of the five conditions: DP-FC, DR-UFC, DR-FC, DP-UFC, or control. Then, they played three DGs consecutively with the instructions relevant to their condition (or no instruction in the case of the control condition) presented before each game. Next, participants were asked if they had taken their participation in the study seriously. Finally, participants were thanked, paid and debriefed.

## 5.3.2 Results

### 5.3.2.1 Data treatment

Data from 211 participants (183 female, 27 male and 1 undisclosed;  $M_{age} = 18.77$ ,  $SD = 0.91$ ) were retained for analysis. Data from participants who did the survey twice were detected through duplicate IDs ( $N = 4$ ) and were excluded from analyses. Data from participants who admitted that they had not answered the questionnaire seriously ( $N = 2$ ) and whose response time was longer than 2.5 times the median response time ( $Mdn = 9.74$ ;  $N = 23$ ) were also excluded from analyses. There were 43 participants in the DP-FC, 42 participants in the DR-UFC, 38 participants in the DR-FC, 45 participants in the DP-UFC, and 43 in the control condition. SVO data were retrieved for 153 participants and majority

scored relatively high, showing that the sample was again dispositionally prosocial ( $M = 33.34$ ,  $SD = 8.05$ ).

The ICE score (ICE-PRG) was calculated in the same way as in Study 1. The distribution of the ICE scores (see Figure 5.4) showed that there were relatively few scores below the zero-point of the scale and that the majority of participants had an ICE score greater than zero. This shows that the majority of participants anticipated more cooperative emotions than competitive emotions. Similarly to Study 1, Figure 5.5 shows that the relation between SVO and ICE PRG indicating that participants who were higher in SVO reported higher anticipated cooperative emotions than competitive emotions.

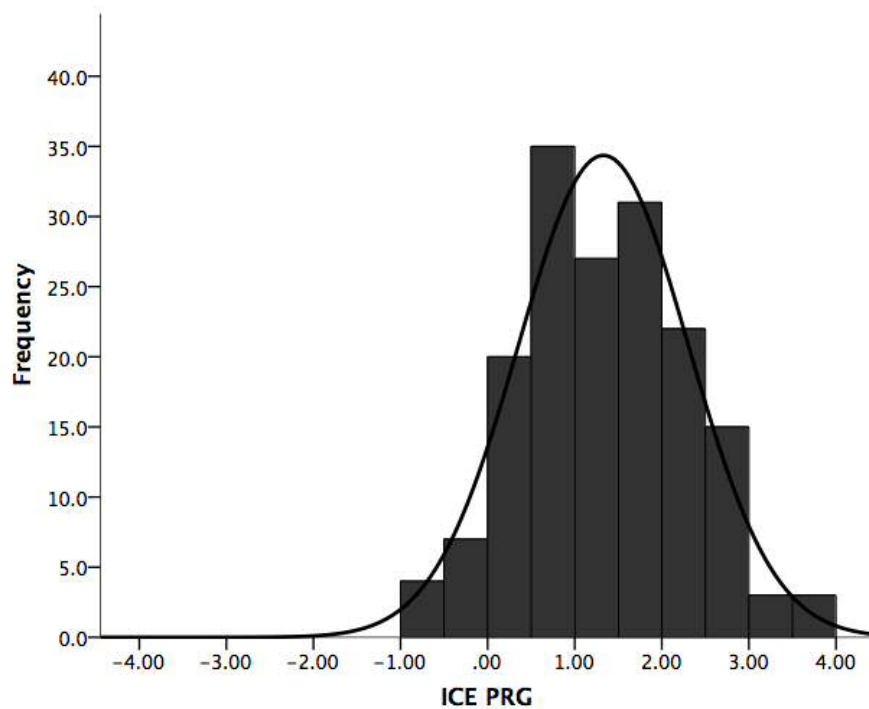


Figure 5.4. Distribution of ICE-PRG scores (Study 2).



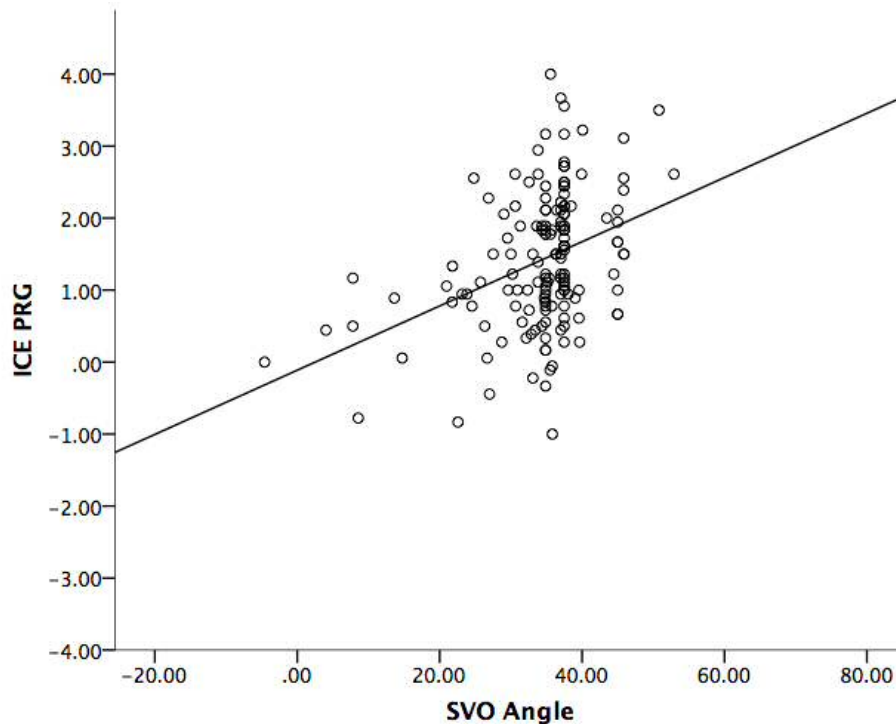


Figure 5.5. Relation between Social Value Orientation and ICE PRG scores (Study 2).

### 5.3.2.2 Allocation behaviour

Exploration of the allocation data showed that the average number of tokens allocated to the receiver across the three games was not normally distributed, Kolmogorov-Smirnov:  $D(211) = 2.99, p < .001$ . To compare allocation behaviour across the five conditions for each of the games, I therefore used the Kruskal Wallis test. This showed that allocation behaviour in Game 1 and Game 3 differed significantly between the five conditions (see Table 5.3). In Game 2, the Kruskal Wallis test showed that allocation behaviour differed marginally significantly between conditions,  $\chi^2(4) = 8.35, p = .08$  (see Table 5.3).

Additionally, to examine whether participants differed in their allocation across the games within each condition, Friedman's ANOVA tests were carried out. These tests showed that participants differed in their allocations across the games in the DP-FC, DR-UFC and DP-UFC. However, this was not the case in the DR-FC and control condition (see Table 5.3).

Table 5.3. Median allocations and test statistics in each game and condition (Study 2).

Condition	G1	G2	G3	Friedman's Anova ( $\chi^2$ )
Down Pride Fair (Median)	13	10	10	<b>10.25**</b>
Down Regret Unfair (Median)	15	13	15	<b>8.97*</b>
Down Pride Unfair (Median)	15	14	14	<b>10.20**</b>
Down Regret Fair (Median)	14	12	12	.22
Control (Median)	15	15	15	1.37
Kruskal Wallis ( $\chi^2$ )	<b>9.78*</b>	8.35 <sup>†</sup>	<b>14.50**</b>	

\* $p < .05$ , \*\* $p < .01$ , <sup>†</sup>  $.05 < p < .08$

To investigate the specific effects of down-regulation condition on allocation behaviour, I ran a Kruskal Wallis test examining allocation behaviour in the four down-regulation conditions, excluding the control condition. This revealed that allocation behaviour in each game was not statistically different between the down-regulation conditions, Game 1:  $\chi^2(3) = 5.37, p = .147$ ; Game 2:  $\chi^2(3) = .12, p = .990$ ; Game 3:  $\chi^2(3) = 1.94, p = .586$ . This shows that although the instructions differed in the attempted manipulation of distinct emotions, participants did not exhibit any differences in their allocation behaviour towards the anonymous receiver as a result of these different instructions.

Because participants did not differ significantly in their allocation behaviour across the four down-regulation conditions, these four conditions were grouped into a single down-regulation condition by averaging the tokens allocated across all four conditions for each game. A Mann-Whitney test investigated the difference between this combined down-

regulation condition and the control condition for each game. Allocation behaviour was significantly different in each of the games (see Table 5.4).

Using a Friedman's ANOVA, I then explored whether participants' allocation behaviour differed across the three games within the combined down-regulation condition and the control condition. These analyses showed that participants' allocation behaviour to the receiver significantly decreased across the games in the combined down-regulation condition but did not do so in the control conditions (see Table 5.4). Post hoc analysis with Wilcoxon signed-rank tests using a Bonferroni correction revealed a statistically significant reduction in allocation behaviour between Game 1 and Game 2,  $Z = -4.07$ ,  $p < .001$ , and Game 1 and Game 3,  $Z = -4.60$ ,  $p < .001$ , but not between Game 2 and Game 3,  $Z = -.11$ ,  $p = .911$ .

Table 5.4. *Median allocations and test statistics in each game and condition (Study 2).*

	G1	G2	G3	Friedman's ANOVA ( $\chi^2$ )
Down-regulating (Median)	15	12	12.5	<b>23.91***</b>
Control (Median)	15	15	15	1.37
Mann Whitney U	<b>2980.00*</b>	<b>2646.00**</b>	<b>2433.50***</b>	

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 5.3.3 Discussion

It was predicted that the effect of down-regulation on allocation behaviour would depend on the type of emotion that was being down-regulated (i.e., cooperative and competitive emotions). However, the results of this study show that participants did not differ in their allocation behaviour across the different down-regulation conditions. Findings revealed that participants acted less fairly when they were instructed to down-regulate their

emotions than when they were not given any instruction to down-regulate their emotions. Reflecting on the instructions that were given to the participants in the down-regulation conditions, it may be that the final sentence of each instruction, namely “Try to play the game in a detached and dispassionate way” (for the specific instructions, see Appendix F), led to participants setting aside their emotions when making allocations, regardless of which specific emotion they had been asked to down-regulate. As a result, no matter which emotions they had been specifically instructed to set aside, they may have simply ignored all emotions and made their allocations in the DG in a generally dispassionate way.

The distributions of SVO and ICE scores showed that there were once again more prosocials than proselfs in the sample. Prosocials typically anticipate pride about being fair and regret about being unfair (Van Der Schalk et al., 2012). As a result, it may be the case that when participants were asked to down-regulate specific emotions, they did not follow the instruction about the specific emotion that they were asked to down-regulate and instead down-regulated the cooperative emotions about allocating resources that as prosocials they would have spontaneously experienced.

#### **5.4 General Discussion**

Across two studies the current research shows that individuals shared resources less equally with another person when they were instructed to down-regulate the emotions they would normally have anticipated experiencing when making resource allocation decisions. Study 1 also included an up-regulation condition, but this did not lead to an increase in sharing. Given the high level of allocation in the control condition and the fact that the sample was largely prosocial, it is possible that the up-regulation condition was not successful in increasing fairness due to a ceiling effect. Study 2 aimed to further investigate whether down-regulation of cooperative emotions would have the opposite effect to that of down-regulation of competitive emotions. Unexpectedly, the sharing of resources was lower

in all down-regulation conditions, independent of the type of emotion that was regulated. It is possible that the instructions about the specific emotion that needed to be regulated were too subtle and that participants simply down-regulated the emotions that they spontaneously experienced. Given that the sample was largely prosocial this resulted in less fairness.

I also investigated whether emotion regulation moderated the influence of SVO on allocation behaviour. Although the interactions between conditions and SVO were not significant, there was some suggestive evidence that the effect of SVO on allocation behaviour that is typically observed was disrupted in the up-regulation and down-regulation conditions in Study 1. The simple slope of SVO in the control condition was positively and significantly related to the probability of making a fair offer. Although the simple slopes of SVO on allocation behaviour in the up-regulation and down-regulation conditions were not significant, the patterns showed that the manipulations disrupted allocation behaviour because they differed from the pattern observed in the control condition. This provides further evidence that anticipated emotions play a key role in the effect of SVO on allocation behaviour, supporting the provisional conclusion reached in Chapter 3.

In both studies there were more prosocial than proself individuals in the sample and therefore the majority of the participants would have anticipated more cooperative than competitive emotions. Thus, when asked to down-regulate their emotions, they would down-regulate cooperative emotions (the emotions that prosocials would spontaneously anticipate) and therefore become less generous in their allocations. Following the same logic, a predominantly prosocial sample should have up-regulated their cooperative emotions in the up-regulation condition, but there was no significant increase in allocation behaviour in this condition. As previously noted, this may have been due to a ceiling effect whereby prosocials simply could become any more equal in their allocations or were already anticipating high levels of cooperative emotions. It may well be easier for prosocials to down-regulate the

cooperative emotions that they usually anticipate than it is for them to up-regulate these anticipated cooperative emotions when they are already at high levels.

The expected effects of down-regulation and up-regulation for proself individuals are less straightforward. On one hand, it could be argued that competitive emotions are the emotions that proself individuals would spontaneously anticipate. In that case, down-regulation and up-regulation should have the opposite effects to those that they have for prosocials: down-regulation should increase fairness, whereas up-regulation should further decrease the amount shared with another person. On the other hand, inspection of the ICE scores (Figures 5.2 and 5.5) reveals that proself individuals did not anticipate high levels of competitive emotions; rather, they simply did not differentiate the emotions they expected to feel when thinking about fair and unfair allocation decisions. Compared to prosocials, proselfs anticipated fewer cooperative emotions. In light of this, it could be predicted that in a more proself sample, down-regulation would have had a less marked effect (because there would be little anticipated emotion to down-regulate), whereas up-regulation might increase fairness in such a sample because their cooperative emotions are low to begin with. The findings of Study 1 provide suggestive evidence for the latter prediction. Future research should aim to recruit a higher number of proselfs to investigate whether emotions regulation strategies influence them differently.

Although we already knew from the research by Côté and colleagues (2011) that emotion regulation knowledge plays a role in moderating the effect of individual differences on allocation behaviour, the current studies extend this work by manipulating the degree of anticipated emotions and showing that it affects the relation of SVO on allocation behaviour. The significant effect of the down-regulating instruction on allocation behaviour found in this study is consistent with past research showing that thinking about anticipated emotions results in a change in allocation behaviour (Van Der Schalk et al., 2012). The current studies

build on these studies by directly manipulating the degree of anticipated cooperative and competitive emotions and showing that this affected allocation behaviour, at least when participants were instructed to down-regulate anticipated emotions.

The current study, together with the studies reported in the previous chapters, suggest that when individuals are asked to make an allocation between themselves and another person, they think about the emotions they would expect to feel when making either a fair or unfair resource allocation decision. The results of these studies consistently show that prosocials anticipate more cooperative emotions than proself individuals. Thus, in order to feel positive (or avoid feeling negative) about an allocation, prosocial participants choose to behave fairly rather than unfairly. This reflects Gross's (1998) situational modification strategy of achieving the desired emotion after making a decision made by changing one's behaviour. In the current studies, when participants down-regulated their anticipated emotions, their allocation to the other person became less fair. This specific down-regulating of anticipated emotions reflect Gross's (1998) attention deployment strategy by not paying attention to their anticipated emotions when participants were asked to "detach" themselves from the emotions that they anticipate experiencing after being fair or unfair. Thus, it can be argued that by not paying attention to their anticipated emotions, participants were able to behave in a more dispassionate way when making their resource allocation decisions, leading them to make allocations that were less equal and more beneficial to themselves.

Several limitations to the current studies should be acknowledged. In both studies, the nature of the instructions may have played a role in generating the observed findings, not all of which were consistent with my predictions. In Study 1, the instruction used was quite general, with the result that I could not be sure which emotions were being regulated. This issue was addressed in Study 2, where a more specific down-regulation instruction was used. However, this greater specificity did not achieve the desired effect. Instead, rather than down-

regulating specific emotions, participants appear to have generally detached themselves from the emotions they anticipated feeling in the decision making process. As noted above, this may have been due to the final sentence used in the instructions. This may have been responsible for the fact that all four of the down-regulating conditions in Study 2 produced similar results.

Another possible limitation of the current studies relates to the use of the ICE measure to measure the emotions that participants thought they would feel if they were to behave one way or another (according to the prearranged allocations in the scenarios presented). However, the actual emotions that participants felt upon making a certain decision was not measured. Future research could assess the actual emotions that people experience upon making a certain decision. For example, actual emotions could be measured after participants have made an allocation in an economic game. This then could be compared to what they reported that they anticipated feeling according to the ICE measure. A further point is that the fact that participants' anticipated emotions were measured using a set of prearranged allocations (the allocation scenarios included in the ICE measure), may have restricted participants' ability to express what they actually anticipated in relation to their own choice of allocations. Thus, another suggestion for future research would be to measure participants' anticipated emotions based on allocations that they are actively considering making in the economic game. These anticipated emotions before making an allocation could then be compared with the actual emotions experienced after making allocations in the economic game.

Past research has shown that down-regulation of emotions has an effect on decision making (Côté et al., 2011; Van Der Schalk et al., 2012). It could be argued that when asking participants to down-regulate their emotions, this might have a paradoxical effect of making the emotions that are being down-regulated more salient, parallel to the rebound effect



observed by Wegner and colleagues (1987). Wegner et al. (1987) asked participants not to think of a white bear and found that after this thought suppression, thoughts about a white bear were more frequent than they were in a control condition. Although the current experiments lacked a manipulation check that would have enabled me to check whether there was a rebound effect, there is some evidence that this effect did not occur in the current research. This is because the effects of down-regulation became stronger over the course of the three consecutive allocations that participants made.

Not having a measure of anticipated emotions as a manipulation check could be considered a limitation of this study. However, asking participants to report their anticipated emotions after instructing them to down-regulate their emotions may have had the undesired effect of participants focusing on their feelings. This would have undermined the intended effect of the manipulation. Previous research has showed that the instructions used in the study are successful in reducing emotions (Côté et al., 2011; Van Der Schalk et al., 2012). There is therefore independent evidence that this type of manipulation is effective. Also, participants' allocation behaviour was lower in the down-regulation condition than in the control condition. This shows that the manipulation had the intended effect on allocation behaviour and thereby reduces the need for a manipulation check (Fayant, Sigall, Lemonnier, Retsin, & Alexopoulos, 2017; Sigall & Mills, 1998).

A final possible limitation is that neither of the current studies included an attention check. Future research should include an attention check in order to be sure participants pay attention to what they read on the screen. Thus, the only screening item that could be used in the current studies was the one asking participants if they had taken their participation seriously.

All in all, the two studies reported in this chapter showed that a manipulation of anticipated emotion had a significant impact on participants' allocation behaviour. In general,

down-regulation of anticipated emotions led to less fair allocations. Study 1 also yielded suggestive evidence that emotion regulation disrupted the normal effect of SVO on allocation behaviour. The current studies were therefore successful in providing experimental evidence that anticipated emotions play an important role in decision making.

## **6 Chapter 6: General Discussion**

In this thesis I set out to understand the psychological processes that are responsible for individual differences in preferences for resource allocation outcomes in contexts where there is some tension between the motive to serve one's own interests and the motive to consider the interests of another person. Because the greater tendency of prosocials (compared to proselfs) to allocate resources fairly is due to their greater sympathy and/or empathy for the other person (Eggum et al., 2011; Van Kleef & Van Lange, 2008), I reasoned that anticipated emotions may represent a psychological mechanism that shapes individual differences in preferences for how to allocate resources between self and other. I therefore hypothesised that anticipated emotions would mediate the relationship between SVO and allocation behaviour. The findings from the research reported in this thesis show that anticipated emotions do help to account for the relationship between SVO and allocation behaviour.

A second objective of the research reported in this thesis was to investigate the effects of group membership of the receiver in an economic game setting to see whether this manipulation would influence participants' allocation behaviour. Additionally, this thesis set out to investigate whether the pattern of results found in studies conducted in a western culture would be replicated in studies conducted in a different cultural setting, namely Malaysia. Finally, in the research reported in Chapter 5, I investigated whether the pattern of the mediation that was consistently found in Chapters 3 and 4 reflected a causal influence of anticipated emotion on allocation behaviour. In the following section, I discuss the findings of each empirical chapter in light of the main research question.

### **6.1 Summary of findings for each empirical chapter**

Past SVO measures, such as the decomposed games used by Messick and McClintock (1968), the Triple Dominance measure (Van Lange et al., 1997), and the SVO-Slider measure

(Murphy et al., 2011), were developed to measure individuals' preferences for different resource outcomes. Although these measures are successful in the sense that they show that preferences measured in these ways are predictive of actual allocation behaviour, they do not shed much light on the psychological mechanism underlying the individual differences in preferences. As argued above, because prosocials' behaviour appears to be related to their greater sympathy/empathy (Eggum et al., 2011; Van Kleef & Van Lange, 2008), I proposed that anticipated emotions might play a role in explaining these individual preferences. In Chapter 2, I described the development of the Index of Cooperative and Competitive Emotion (ICE) measure. This was intended to assess anticipated emotions that are relevant to resource allocation decisions and to extend our understanding of how individual differences in SVO influence behaviour. In the three studies reported in this chapter, the newly developed measure was shown to be reliable and valid. This justifies its use to address the main research question of my thesis.

Using the newly developed ICE measure, the main research question was addressed in Chapter 3. In the two studies reported in this chapter I investigated my hypothesis that anticipated emotions would mediate the relationship between SVO and allocation behaviour. The findings of Study 1 provided good support for this prediction, however anticipated emotions only partially mediated the relation between SVO and allocation behaviour. It was also noted that the sample consisted mainly of prosocials. It could be that the mediating role of anticipated emotions is more evident among prosocials than among proselfs. Thus, in Study 2 I aimed to recruit a more "proself" sample (drawn from the population of business school students) to see whether there would also be evidence of mediation in this sample. It was the case that the sample was more varied with respect to SVO, although proselfs were still outnumbered by prosocials. As expected, there were significant differences in both SVO and anticipated emotions between the psychology student sample recruited in Study 1 and the

business school sample recruited in Study 2, although results did not show any differences in psychology and business school students' allocation behaviour as did previous studies that have found differences (Van Lange et al., 2011). However, evidence of anticipated emotions as a partial mediator was once again found in Study 2.

By measuring participants' SVO and anticipated emotions using the ICE measure and asking participants to divide a set number of tokens with financial value between themselves and an anonymous other, the findings of these two studies show a reliable tendency for anticipated emotion to partially mediate the relationship between SVO and allocation behaviour. These studies provide the first evidence that the individual differences in preferences for resource allocation that are captured by measures of SVO can be explained at a more proximate level by differences in the emotions that prosocials and proselfs anticipate experiencing when making decisions about how to allocate resources between self and other.

In an influential paper it was argued that most psychological research studies have been conducted in western cultures, using samples drawn from western populations (Henrich et al., 2010). This poses the risk that the findings of such research may not generalise to cultures that have different norms, values, and practices. To avoid depending exclusively on the results of studies using western samples, in the research reported in Chapter 4, I replicated the research conducted in Chapter 3 using an Asian sample, recruited in Malaysia.

Additionally, due to the multi-ethnic and multicultural nature of Malaysia and its specific history that has led to a form of segregation among Malaysians (Cheong et al., 2016; Montesino, 2012; Tyson et al., 2017), I took the opportunity to investigate the effect of the receiver's ingroup or outgroup identity on individual's allocation behaviour, expecting to find evidence of a tendency to be more fair when making allocations to ingroup receivers. According to Social Identity Theory, individuals are motivated to achieve a positive distinction between their ingroup and their outgroup (Tajfel & Turner, 1979). To create this

positive distinctiveness, lower social status group members behave in a way that helps them to increase their social standing, for example by allocating resources fairly and thereby gaining the moral high ground. According to Social Dominance theory (Pratto et al., 1994), individuals differ in their preferences for status differences and group hierarchies in society. High status groups generally have greater preference for this and are motivated to maintain status differences between groups, whereas low status groups tend to have less preference for this and are motivated to promote equality. Thus, I also explored whether allocators from the majority group in Malaysia (Malays) differed in their allocation behaviour from those from minority groups (Chinese and Indians).

In these Malaysian studies, there was reliable evidence of a similar mediating role of anticipated emotions in the relation between SVO and allocation behaviour, despite the study being conducted in different cultural population. However, there was no evidence of differences in allocation behaviour towards ingroup and outgroup receivers. These findings are inconsistent with past literature showing ingroup favouritism in allocation behaviour (Balliet et al., 2014). There are several possible reasons for this inconsistency and these will be discussed below in the section on limitations. On the other hand, there was evidence of a difference in allocation behaviour on the part of majority and minority allocators in Study 1. These differences in allocation behaviour between majority and minority could reflect the preferences for maintaining existing status differences between groups that is described by social dominance theory, whereby majority group participants (Malays) have higher SDO and are less likely to demonstrate fairness to others than minority group participants (Chinese). However, the pattern that majority group participants demonstrated less fairness was not observed in Study 2. Nevertheless, individual differences in SDO did predict allocation behaviour, and anticipated emotions were found to play a mediating role in the relation between SDO and allocation behaviour. This shows the potential for anticipated

emotions to explain the influence of another individual difference measure that shapes decision making in resource allocation dilemmas and speaks to the generality of anticipated emotions as a proximal psychological explanation to explain dispositional preferences for outcomes of divisions.

The studies reported in chapters 3 and 4 relied mostly on correlational data. An experimental study was needed to establish the causal chain linking SVO to allocation behaviour via anticipated emotions (Spencer et al., 2005). Thus, in the two studies reported in Chapter 5, this causal chain was examined by manipulating the level of emotions anticipated when making resource allocation decisions. In two studies, it was found that instructing participants to down-regulate their emotions when making resource allocation decisions led them to allocate fewer tokens to the other person. The findings also showed that the down-regulation condition had a stronger effect on participants' allocation behaviour than did the up-regulating condition. The findings from this chapter complement other studies that have found that down-regulating emotions leads to an increase in antisocial behaviour (Van't Wout et al., 2010).

The studies reported in Chapter 5 also examined whether emotion regulation moderates the influence of SVO on allocation behaviour. Although there was no significant interaction between SVO and emotion regulation condition, there was some suggestive evidence that the manipulation of anticipated emotion had an effect on the strength of the relation between SVO and allocation behaviour. The patterns in up-regulating and down-regulating showed in Figure 5.3 in Chapter 5 suggest that the manipulation disrupted the normal relation between SVO and allocation behaviour as it differed from the pattern in the control condition.

## 6.2 Theoretical Implications

Although it has long been established that SVO predicts resource allocation behaviour, previous studies have tended simply to accept this relation without examining the proximal causes of why prosocials and proselfs differ in the way they allocate resources between self and other. The studies reported in this thesis shed some light on why there is this difference: Prosocials and proselfs differ in their allocation behaviour because they anticipate that they will feel different kinds of emotion as a result of allocating resources in a way that is fair or in a way that favours the self over the other person. The results of the current studies show that prosocials anticipate more cooperative emotions (e.g., pride about being fair and regret and guilt about being unfair) and less competitive emotions (e.g., pride about being unfair and regret and guilt about being fair), and this pattern of anticipated emotion is linked to a more equal allocation of resources between themselves and the recipients. Proselfs, on the other hand, anticipate more competitive emotions (e.g., pride about being unfair and regret and guilt about being fair) and less cooperative emotions (e.g., pride about being fair and regret and guilt about being unfair), and this pattern of anticipated emotion is linked to a more unequal allocation of resources between them and the recipient. In all reported studies there was a consistent indirect effect of SVO on allocation behaviour via anticipated emotions and this (at least in part) answers the research question about what goes on in the minds of prosocials and proselfs when making these resource allocation decisions. Below I discuss the theoretical implications of these findings.

As noted above, research using SVO measures has shown that individuals who differ in SVO scores have different preferences for certain outcomes (Balliet et al., 2009; Murphy et al., 2011; Van Lange, Bekkers, et al., 2007). For example, prosocials tend to be cooperative people who prefer an equal outcome between themselves and other people. Proself individuals, on the other hand, are competitive/individualistic individuals who prefer



unequal outcomes favouring themselves. My newly developed ICE measure is a reliable and valid measure that captures an important psychological construct underpinning these preferences for different outcomes. By showing that scores on the ICE measure are significantly associated with SVO scores, and that ICE scores are also predictive of allocation behaviour in economic games, this research extends what we know about SVO. Put simply, the current research suggests that prosocials and proselves appraise settings in which resources are to be divided between themselves and others differently, and that these differential appraisals lead them to anticipate different emotional experiences if they were to divide resources more or less equally.

Between them, the studies reported in this thesis can be seen as establishing a causal chain linking stable individual differences in preferences for outcomes (SVO) with differences in resource allocation behaviour via differential anticipated emotions. The three key constructs that were investigated in this thesis are SVO, anticipated cooperative and competitive emotions and resource allocation behaviour. In the two studies reported in Chapter 3, I measured each of these constructs in a correlational design and demonstrated that SVO influenced allocation behaviour through the proposed mediator, anticipated cooperative and competitive emotions. This is a measurement-of-mediation design, drawing on a statistical analysis procedure originally introduced by Baron and Kenny (1986). It tests whether an independent or predictor variable influences a dependent or outcome variable through a mediating variable. However, Spencer, Zanna and Fong (2005) argued that the Baron and Kenny method, despite its widespread use, is often misapplied. Spencer et al. argued that in the measurement-of-mediation design, the relations between the predictor and outcome variable mediated by a third variable are often based on correlations. Like any correlational evidence, this leaves open the possibility that the causal relations assumed by the mediation model could be reversed or could be due to shared variance with an external,

unmeasured variable. This point applies in particular to the relation between the mediating variable, which is often intended to capture a psychological process, and the outcome variable, because the mediator is typically measured and not manipulated. To establish that the psychological process captured by the mediator genuinely has a causal impact on the outcome variable, the mediator should be manipulated (Spencer et al., 2005). In combination with evidence from the measurement-of-mediation design, this provides stronger support for the proposed mediation model.

Consistent with the argument of Spencer et al. (2005), in the studies reported in Chapter 5 I manipulated the proposed mediator (anticipated emotions). The findings of these two studies suggest that anticipated emotions indeed play an important role in decision making. When participants were instructed to down-regulate their emotions when contemplating resource allocation decisions, this led to differences in their allocation behaviour. The evidence from this manipulation-of-mediation approach therefore complements the evidence from the measurement-of-mediation approach used in the previous studies and helps to establish that there is a causal chain between the three constructs, such that SVO has its influence on allocation behaviour through its impact on anticipated emotions rather than the other way around.

Previous research has established that SVO is a stable preference (Messick & McClintock, 1968; Murphy et al., 2011). The current studies are consistent with this past work in showing that SVO is a stable individual difference. Measuring SVO using the slider measure at two different time-points showed substantial test-retest reliability. However, the present research shows that down-regulating or up-regulating anticipated emotions can override the influence of an individual's SVO on his or her allocation behaviour. Thus, regardless of an individual's SVO, manipulating anticipated emotions has an impact on allocation behaviour. This further strengthens the evidence for my main research prediction

by showing that anticipated emotions play an important role in resource allocation behaviour by overriding the influence of the supposedly stable trait of SVO.

The current research also provides evidence that SDO is predictive of allocation behaviour, with persons who score highly in SDO being more likely to make unequal resource allocation decisions favouring themselves. These findings are consistent with social dominance theory, which proposes that group-based social hierarchies are formed and maintained through processes of discrimination and prejudice (Pratto et al., 1994). Also consistent with social dominance theory is the finding that the SDO scores of members of the majority and minority groups in Malaysia differed, reflecting the social hierarchical status these groups have in Malaysia. Chinese participants, who are a minority group in that country, scored lower in SDO than did Malay participants, who form the majority group in Malaysia. Although I did not find a significant interaction between the majority/minority group membership of allocators and SDO scores on allocation behaviour, the fact that SDO scores differed significantly between Malays and Chinese and were also predictive of allocation behaviour was consistent with this reasoning. Taken together, the current studies provide some suggestive evidence that belonging to a majority or minority social group plays a role in resource allocation behaviour, but the precise nature of this relation is still an open question. Perhaps future research could pursue the question of why majority and minority members in Malaysia differ in their SDO scores but this does not reflect in their allocation behaviour.

Although there is evidence that some emotions signals, such as laughter and screams, are recognised similarly across different cultures, there are other specific emotions that have different signals in different cultures (Sauter, Eisner, Ekman, & Scott, 2010). Furthermore, Russell (1994) proposed that although the valence and arousal dimensions of emotion are universally recognised, specific emotions are more culturally variable. Evidence of the

cultural variability of emotions raises the possibility that there might also be cultural variability in the influence of anticipated emotions. This issue was addressed in the current studies by recruiting participants from two different cultural backgrounds (the UK and Malaysia). There were similar patterns of results across these two cultures when investigating whether anticipated cooperative and competitive emotions mediated the relation between SVO and allocation behaviour. In the two different populations studied, the national languages differed, with the UK samples (mainly students of British nationality) speaking English and the Malaysian samples speaking Malay. This meant that the definitions of each anticipated emotions (in the context of resource allocation decisions) had to be translated carefully from English to Malay for the Malaysian participants. Despite the evidence that emotions have different connotations in different cultures and languages (Sauter et al., 2010; Wierzbicka, 1994), the current studies show a robust pattern of mediation of the relation between SVO and allocation behaviour by anticipated emotions. This suggests that the anticipated emotions that are assessed by the ICE measure have similar meanings and have a similar influence across the two cultures I investigated. These findings are consistent with research that found universal recognition of pride (Tracy & Robins, 2008), guilt (Furukawa, Tangney, & Higashibara, 2012) and regret (Gilovich, Wang, Regan, & Nishina, 2003).

### **6.3 Practical Implications**

There are some noteworthy practical implications of the current findings. Firstly, the evidence that anticipated emotions play an important role in decision making about resource allocation, together with the evidence from the studies reported in Chapter 5 showing that down-regulating participants' anticipated emotions influenced participants' behaviour when allocating tokens, points to ways in which people could be encouraged to make more 'rational' decisions (meaning decisions that serve their own interests). The manipulation used was a simple instruction to make a decision in a detached and dispassionate way and is

therefore short and easy to administer. The result (irrespective of participants' SVO) was that they behaved in a less fair manner (i.e., distributing tokens more unequally between allocator and receiver, in a way that favoured the allocator) than in the control condition. This suggests that the ability to down-regulate emotions could be used to encourage individuals to make decisions in a way that serves their own interests.

The effects of manipulating the anticipation of emotions may also have social benefits by increasing cooperation and encouraging individuals to allocate resources more equally through up-regulating cooperative emotions. Admittedly, in the present research the effects of the up-regulating condition were not significant. However, this finding (or lack thereof) needs to be considered in light of the fact that the current student samples tended to be prosocial in terms of their dispositional SVO. As a result, baseline levels of fairness and cooperative emotions may have been high to begin with and there simply may not have been any room to up-regulate these cooperative emotions further, leading to a ceiling effect in fairness. In addition, it may have been easier to get prosocial individuals, who normally anticipate cooperative emotions, to detach themselves from such emotions and to make less equal resource allocation decisions, than it is to get proself individuals, who would normally anticipate competitive emotions, to detach themselves from these emotions and to make more equal resource allocation decisions as a result. In any case, future research should systematically examine the consequences of emotion regulation manipulations for decision making in social dilemmas. For example, perhaps it is easier to find effects of up-regulating cooperative emotions in contexts where people are generally less inclined to act fairly or pro-socially, like volunteering time for a cause. It could also be interesting to investigate the effect of down-regulating competitive emotions in a setting where competitive emotions are more socially appropriate, like in sports.

The anticipated emotions that were the focus of the current research can be categorised into one of two groups: cooperative, other-regarding emotions (e.g., pride about being fair and regret and guilt about being unfair) and competitive, self-regarding emotions (e.g., regret and guilt about being fair and pride about being unfair). Thus the cooperative emotions studied here could be replaced by alternative other-regarding emotions, such as compassion. Research has shown that compassion towards others, such as caring about others who are suffering, predicts cooperative behaviour (Goetz, Keltner, & Simon-Thomas, 2010). This suggests that if the current research were to be replicated in a different context, for example a natural disaster setting in which there is an opportunity to offer aid to victims, helping behaviour would be more likely on the part of those who anticipate feeling compassion towards the victims. By the same token, competitive emotions could be replaced by alternative self-regarding emotional traits, such as high self-esteem. Research has found that individuals with high self-esteem are more likely to engage in non-cooperative behaviour (Kagan & Knight, 1979; Tjosvold, XueHuang, Johnson, & Johnson, 2008). However, there are conflicting findings concerning the influence of self-esteem on prosocial behaviour. For example, Lu and Argyle (1991) found that self-esteem can increase cooperation. Thus the relation between self-esteem and cooperative behaviour is not a simple one. Nevertheless, the specific emotions studied in the present thesis could perhaps be extended to include other relevant other-regarding and/or self-regarding emotions that might play a key role in shaping prosocial or proself behaviour in different social contexts.

Although the studies reported in Chapter 4 were intended to replicate the findings reported in Chapter 3 on a sample with a different cultural background, they were also designed to investigate whether making a receiver's social identity known to the allocator would influence the allocator's behaviour. Given the history and background of community relations in Malaysia, it was predicted that Malaysian participants would exhibit ingroup

favouritism in their allocation behaviour. Had this been the case, the results would have had implications for strategies to improve inter-ethnic relations in Malaysia, for example by raising awareness of the role of anticipated emotions in making resource allocation decisions between ingroup and outgroup members. However, the results were unexpected, in that there was no evidence of ingroup favouritism. Here it can be argued that the way in which the receiver's social identity was manipulated (by means of giving them an ethnically-marked first name) may have encouraged allocators to make more equal allocations than they would have done if the receiver's social identity had been varied in a more anonymous way (e.g., by referring to him or her as 'Person 12 from the Chinese group' or 'Person 3 from the Indian group'). Past research has found that allocators in the dictator game gave more to a named receiver as compared to an anonymous person (Charness & Gneezy, 2008). It was reasoned that individuals behave more favourably towards people with whom they perceived to have a close social distance, commonly defined in terms of race, religion, occupation or nationality (Bohnet & Frey, 1999; Triandis, Hall, & Ewen, 1965). With the data collected in the present research, I cannot compare allocation behaviour to an anonymous person with that to a named person. Future studies could compare two types of manipulations of social identity (named outgroup receiver, as in the present studies, or an anonymous outgroup receiver, perhaps represented by an ethnically marked avatar). This would tell us whether knowing something about the personal identity of an outgroup receiver (i.e., their name) makes a difference in allocation behaviour. If it is found that participants are more equal in their allocation decisions when some individuating information about the receiver is made available, this would suggest a way in which ingroup favouritism in multi-ethnic societies such as Malaysia could be reduced. On a broader level, such research could help to increase donations to charitable sites, where messages revealing the name of an individual outgroup recipient of charitable donations might serve to enhance donations compared to messages in

which it is clear that the recipients would be outgroup members but in other respects they remain anonymous.

## **6.4 Limitations and Future Research**

### **6.4.1 Methodological Issues**

The results of the current studies need to be interpreted with a degree of caution, because in most cases the participants were university students. Without conducting equivalent research on more varied populations, it remains unknown whether the findings would generalise to populations with different ages and educational backgrounds. Thus, future studies should seek to recruit participants from the general population. This may also be helpful in terms of recruiting a sample that is more varied in terms of SVO.

Additionally, it could be argued that the use of a binary outcome variable may have impacted the magnitude of the correlation between SVO, anticipated emotions, and allocation behaviour. Across the studies, the correlations between SVO, anticipated emotions and allocation behaviour were calculated using non-parametric correlational analyses. In these correlations, continuous measures of SVO and anticipated emotions were compared with the actual (rather than dichotomised) allocation of tokens. Thus, the dichotomization of the outcome variable for the purposes of other analyses could not have influenced the observed correlations between allocation behaviour, on the one hand, and SVO or anticipated emotions, on the other hand.

Another possible limitation is the fact that in all the studies reported in this thesis, there was a higher number of female than male participants. Although it is generally presumed that women are more prosocial than men (Löckenhoff et al., 2014) and although there is some evidence to support this in relation to SVO (Van Lange, 1999) and behaviour in the UG (Solnick, 2001), a more recent meta-analysis found no difference in the overall levels of cooperation between men and women (Balliet, Li, Macfarlan, & Van Vugt, 2011). In the



current studies, the preponderance of women participants was such that I could not conduct comparative analyses between the two genders. Thus, future research should seek to recruit a more balanced number of females and males in order to be able to examine whether there are any differences in anticipated emotions in resource allocation contexts and in actual allocation behaviour.

A third limitation of the studies reported in this thesis is that they all used two economic games, namely the Dictator Game (DG) and the Ultimatum Game (UG). Although these games vary in one important respect, allowing me to establish that the mediating role of anticipated emotions could be found in both games despite this difference, it would of course be valuable to investigate whether the pattern of findings observed in this research would translate to other economic games. Because both the DG and UG are loss-framed, future studies could use similar loss-framed games, such as the public goods dilemma or the prisoners' dilemma, to see whether anticipated emotions mediate the relation between SVO and decision making in those contexts. Given that these games are also loss-framed, it should be the case that prosocials would anticipate experiencing more cooperative emotions and less competitive emotions than would their proself counterparts, and that this would lead to more cooperative behaviour. Also, it would be more interesting as well to extend the current findings by doing these studies in economic game settings with a gain frame. For example in the common goods dilemma that has a gain frame, would participants anticipate similar emotions towards being fair or unfair in a take-some dilemma. With the current findings, future research should also look into the affect of anticipated emotions on the relation between SVO and different kinds of prosocial or cooperative behaviour other than resource allocation using economic games (e.g., such as donating to charities or volunteering time for a charitable cause).

In the current thesis I have focused on the role of anticipated emotions in shaping participants' allocation behaviour. However, it could be questioned whether these emotions are spontaneously anticipated when allocating tokens to the receiver in the UG and the DG, given that participants were explicitly asked about their anticipated emotions in most of the studies. Posing questions about anticipated emotions may have made them salient and therefore influential. In the emotion regulation studies (reported in Chapter 5), when comparing the down-regulation and control conditions, it is evident that the number of tokens allocated to the anonymous other decreased when participants were asked to down-regulate their emotions. This suggests that when participants are not specifically directed to consider their feelings (i.e., in the control condition), emotions do play a role in allocation behaviour.

This interpretation is consistent with the results of Van Der Schalk and colleagues (2012), who found that the extent to which individuals anticipated pride about acting fairly (or unfairly) and the extent to which individuals anticipated regret about acting fairly (or unfairly) predicted the amount of tokens that individuals allocated to another person. These researchers argued that past emotional experiences led to the spontaneous anticipation of these emotions when faced with a similar situation and that the spontaneous anticipation of these emotions influenced their subsequent decision making (Van Der Schalk et al., 2012). Indeed, a meta-analysis of relevant research showed that anticipated emotions guide behaviour through such a feedback mechanism (DeWall et al., 2016). According to DeWall and colleagues (2016) anticipated emotions are “automatic affect”, which is based on past emotional experiences that are stored in memory and are activated without intention or awareness (Baumeister et al., 2007).

Although the current emotion regulation studies do not directly establish that participants spontaneously anticipate emotions when making allocation decisions, other studies have yielded evidence relevant to this issue. For example, when children were asked

to state the emotions they anticipated if they were to act in an unfairly manner (e.g., copying a character who steals something or not helping another child who asked for help in building a sand castle), those children who reported that they would feel bad were more likely to make equal allocations in a separate allocation task using the dictator game (Gummerum, Hanoch, Keller, Parsons, & Hummel, 2010; Ongley & Malti, 2014). This suggests that children who anticipated feeling bad about their actions in the imagination task spontaneously anticipated feeling bad about not sharing allocations equally in the dictator game. Thus, these studies suggest that anticipated emotions are activated spontaneously (due to past experiences) and help individuals to modify their behaviour to achieve desired emotional outcomes (DeWall et al., 2016).

A concern that could be raised about the methodology used in the current studies is the possible role of social desirability. People may want to appear more prosocial and less proself and as a result attain more prosocial scores on the SVO measure and allocate more to the receiver in the economic games, not because of a genuine preference regarding outcomes but rather in order to appear and act in a socially desirable way. However, in most of the studies reported in this thesis, social desirability concerns are likely to have been minimised because data collection was anonymous and took place via self-administered online questionnaires.

Nevertheless, it is possible that social desirability may have had an effect in the studies reported in Chapters 4 and 5. It is possible that differences in allocation to ingroup and outgroup members were not observed in Chapter 4 because of a general desire to avoid acting in an ingroup favouring way. However, the fact that the switch from a within-subjects (Study 1) to a between-subjects (Study 2) design did not affect the main findings suggests that this was not the case. Furthermore, it does not seem plausible to account for the findings reported in Chapter 5 in terms of social desirability. It is hard to see how social desirability

concerns would explain the impact of down-regulation instructions on allocation behaviour. Nevertheless, the role of social desirability cannot be ruled out entirely and future studies should consider including a social desirability measure such as the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) or the Balanced Inventory of Desirable Responding (Paulhus, 1991).

#### **6.4.2 Theoretical issues**

Although I have argued that using the ICE measure extends our insight into why prosocials and proselfs make different resource allocation decisions, the fact that the mediation evidence was consistently partial rather than full suggests either that the ICE measure does not capture all the emotions that are relevant to explaining the differences between proselfs and prosocials, or that there are non-emotional factors that explain the influence of SVO on allocation behaviour. For example, factors like gender (Espinosa & Kovářik, 2015), religion (Everett, Haque, & Rand, 2016) and social status (Kafashan, Sparks, Griskevicius, & Barclay, 2014), have been shown to play a role in prosocial behaviours and might therefore moderate the strength of the relation between SVO and anticipated emotions or between anticipated emotions and prosocial behaviour. With respect to alternative mediators of the relation between SVO and allocation behaviour in economic games, a candidate process might simply be the degree to which an allocator attends to him- or herself, as opposed to the recipient. Although such a difference in attention might be linked to differences in anticipated emotion, it could in principle be a purely cognitive process, with one type of person attending to his or her own interests, and another type of person attending to the interests of both parties. These factors could be taken into account in future studies in an effort to improve our understanding of the psychological processes that account for the

way in which the differences in preferences for resource outcomes that are captured by measures of SVO have an impact on behaviour in social dilemmas.

Rucker, Preacher, Tormala, & Petty (2011) have argued that the term “partial mediation” should be avoided, because it is suggested that the indirect effect of a predictor on a dependent variable via a mediator, either in the absence of a significant direct relation between these variables prior to mediation analysis or in the presence of a significant relation between these variables after mediation analysis, is less impressive than a “full” mediation. In addition, these authors argued that if full mediation requires the relationship between the independent variable and the outcome variable to be non-significant when controlling for the mediator, then there are no further reasons to test and investigate additional mediators (Rucker et al., 2011). Instead, they proposed that the main focus should be on the magnitude of the indirect effect of the relation between the predictor and the outcome variable, and on examining different mediators and controlling for variables that could possibly affect the indirect effect (Rucker et al., 2011). Even though the findings presented in the current thesis do not meet the criteria for ‘full’ mediation, the studies reveal a consistent and robust pattern across a range of samples. It is therefore argued that anticipated emotions can account for a meaningful proportion of the variance in allocation behaviour that is explained by SVO. In addition, I have proposed that future research should take into account other variables that may affect (the strength of) the relation between SVO and allocation behaviour (such as control variables or other mediators) and examine the circumstances under which anticipated emotions plays a more or less pronounced role in the relation between SVO and allocation behaviour, in line with what was proposed by Rucker and colleagues (2011).

With respect to the point about whether the ICE measure captures all emotions that are relevant to resource allocation decisions, future researchers could consider asking decision makers to report the emotions they anticipate as a result of their decision before they

make their decisions. This would allow researchers to build up an ecologically valid set of emotions (which may vary from one social dilemma to another). For example, feelings of loyalty or disloyalty might be relevant in a public goods dilemma but less so in an ultimatum game. In this way, researchers could develop a taxonomy of emotions relevant to resource allocation decisions. A measure of anticipated emotion based on such a taxonomy might have superior potential for fully mediating the relation between SVO and resource allocation decisions.

In the current studies, the ICE measure gauged how participants thought they would feel about certain outcomes. Future research could look into the actual emotions participants feel about their allocation decisions. After making a decision in an economic game, a post-question should ask about the current emotions the participants is experiencing. Such a study would allow researchers to investigate whether prosocials actually feel more cooperative emotions (pride about being fair, regret being unfair) and whether proselfs experience more competitive emotions (pride about being unfair, regret about being fair). One possible prediction is that there is indeed a reliable relation between anticipated and experienced emotions (Baumeister et al., 2007), but research on affective forecasting has revealed that people generally tend to overestimate their feelings when thinking about future events (Wilson & Gilbert, 2003). It would be interesting to investigate how experienced emotions inform decisions in subsequent games. In addition, it could be relevant to investigate how successful an emotional down-regulation or up-regulation manipulation is in affecting actual feelings compared to anticipated feelings about allocation decisions.

## 6.5 Conclusion

Past research has established that there is a reliable relation between the social preferences that are captured by measures of SVO and the nature of the decisions that individuals make when asked to distribute resources between self and other. There is also

evidence that anticipated emotions are predictive of allocation behaviour. However, to my knowledge these two kinds of influences on allocation behaviour have thus far only been studied independently. In this thesis I set out to investigate anticipated emotions as the psychological process that mediates the influence of SVO on resource allocation decisions. The findings reported in this thesis add up to compelling evidence that anticipated emotions are at least one of the psychological mechanisms that explain individual differences in allocation behaviour. The vital role played by anticipated emotions in resource allocation behaviour was evident when the research results showed that down-regulating anticipated cooperative emotions decreased allocation behaviour directly.

Thinking about the emotions you are likely to experience as a result of your future actions serves important functions. It stops you from doing things that you are likely to regret in the future. In this way, anticipated emotions operate as a kind of benign guide, helping you to make everyday life decisions that lead to valued emotions and discouraging you from making decisions that would lead to unwelcome emotions. Research on the influence of anticipated emotions in decision making is still growing. It is hoped that the research reported in this thesis has contributed to the this literature by showing that anticipated emotions play an important role in explaining why dispositional preferences lead to different social outcomes.

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*Appendix A*

Please remember that the other participant doesn't know about the possible differences in value of the tokens (points).

There are 36 tokens at stake, with each token worth 1 point for you and 1 point for the receiver, and if you were to divide them in the same way as listed below...

Allocator (you)	24 tokens	24 points
Receiver (other)	12 tokens	12 points

... to what extent would you feel:

<b>Emotions</b>	<b>Not at all</b>	<b>A little bit</b>	<b>Moderately</b>	<b>Quite a bit</b>	<b>Very much</b>
<b>Pleased</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Proud</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Regretful</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Sorry</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Satisfied</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Embarrassed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Foolish</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Guilty</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Ashamed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Disappointed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Appendix B*

Please remember that the recipient (the anonymous other) has to accept the allocation you make, regardless of the amount allocated.

There are 36 tokens at stake. If you were to divide them in the same way as listed below...

Allocator (you)	27 tokens
Receiver (other)	9 tokens

....to what extent would you feel:

<b>Emotions</b>	<b>Not at all</b>	<b>A little bit</b>	<b>Moderately</b>	<b>Quite a bit</b>	<b>Very much</b>
<b>Regretful</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Disappointed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Pleased</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Proud</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Guilty</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Ashamed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### *Appendix C*

**Proud** Feeling deep pleasure or satisfaction as a result of one's own achievements, qualities, or possessions or those of someone with whom one is closely associated. *Bangga Rasa kenikmatan atau kepuasan atas pencapaian sendiri, kualiti atau harta benda sendiri atau terhadap orang yang berkait rapat dengannya.*

**Pleased** Feeling or showing pleasure and satisfaction, especially at an event or a situation.

*Gembira Sangat suka dan besar hati atas sesuatu, terutamanya dalam sesuatu keadaan dan situasi.*

**Regret** Feeling of sadness, repentance, or disappointment over (something that one has done or failed to do).

*Menyesal Berasa dukacita atas sesuatu kelakuan atau gagal dalam melakukan sesuatu perbuatan.*

**Disappointed** Sad or displeased because someone or something has failed to fulfil one's hopes or expectations.

*Kecewa Dukacita kerana tidak tercapai cita-cita (harapan, kehendak, dsb), hampa kerana tidak dapat memenuhi harapan atau jangkauan seseorang.*

**Guilty** Culpable of or responsible for a specified wrongdoing.

*Bersalah Keadaan fikiran seseorang yang diganggu dengan perasaan bersalah atau bertanggungjawab atas sesuatu kesalahan.*

**Ashamed** Embarrassed or guilty because of one's actions, characteristics, or associations.

*Malu Perasaan negatif yang timbul dalam diri seseorang akibat daripada kesedaran diri mengenai perlakuan, ciri-ciri atau sesuatu yang dikaitkan dengan dirinya sendiri.*

*Appendix D*

Please remember that the recipient (the anonymous other) has to accept the allocation you make, regardless of the amount allocated.

**You are paired with Ali.**

There are 36 tokens at stake. If you were to divide them in the same way as listed below...

<b>You (Allocator)</b>	<b>27 tokens</b>
<b>Ali (Receiver)</b>	<b>9 tokens</b>

...to what extent would you feel:

<b>Emotions</b>	<b>Not at all</b>	<b>A little bit</b>	<b>Moderately</b>	<b>Quite a bit</b>	<b>Very much</b>
<b>Regretful</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Disappointed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Pleased</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Proud</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Guilty</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Ashamed</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### *Appendix E*

**Bangga** Berasa gembira atau puas yang mendalam terhadap pencapaian, kualiti atau harta benda atau terhadap mereka yang mempunyai hubungan yang sangat rapat dengan diri.

**Proud** Feeling deep pleasure or satisfaction as a result of one's own achievements, qualities, or possessions or those of someone with whom one is closely associated.

**Gembira** Berasa atau menunjukkan perasaan gembira atau puas, terutamanya terhadap sesuatu peristiwa atau situasi.

**Pleased** Feeling or showing pleasure and satisfaction, especially at an event or a situation.

**Terkilan** Perasaan sedih, kesal atau kecewa terhadap sesuatu yang telah dilaksanakan atau sesuatu yang tidak berjaya dilaksanakan.

**Regret** Feeling of sadness, repentance, or disappointment over something that one has done or failed to do.

**Kecewa** Perasaan sedih atau tidak menyenangkan kerana seseorang yang lain atau sesuatu yang telah gagal untuk memenuhi harapan atau jangkauan diri.

**Disappointed** Sad or displeased because someone or something has failed to fulfill one's hopes or expectations.

**Bersalah** Tidak berniat atau berasa bertanggungjawab ke atas satu kesilapan.

**Guilty** Culpable of or responsible for a specified wrongdoing.

**Malu** Malu atau bersalah kerana perbuatan, sikap atau hubungkait diri.

**Ashamed** Embarrassed or guilty because of one's actions, characteristics, or associations.

*Appendix F*

Instructions for the conditions:

**Regret/Pride about being fair**

When you play the game with the other person, you may find yourself thinking about how you would feel if you were to offer more or less to the other person. Specifically, you might think about how **proud** or how **pleased** you would feel if you **divided the resources equally** between yourself and the other player [how much you would **regret** it or feel **disappointed** if you divided the resources equally between yourself and the other player]. When you play the game, **we would like you to put such thoughts out of your mind. Do not think about how proud or pleased [regretful or disappointed] you would feel.** Try to play the game in a detached and dispassionate way.

**Regret/Pride about being unfair**

When you play the game with the other person, you may find yourself thinking about how you would feel if you were to offer more or less to the other person. Specifically, you might think about how **proud** or how **pleased** you would feel if you **gave more to yourself** than the other player [how much you would **regret** it or feel **disappointed** if you gave more to yourself than the other player]. When you play the game, **we would like you to put such thoughts out of your mind. Do not think about how proud or pleased [regretful or disappointed] you would feel.** Try to play the game in a detached and dispassionate way.