Mass Media and Aspiration Manipulation:

An Experiment Altering Preferences Over Goals

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Statement of Originality

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at University of Sydney or at any other educational institution, except where due acknowledgement is made in the thesis.

Any contribution made to the research by others, with whom I have worked at University of Sydney or elsewhere, is explicitly acknowledged in the thesis.

I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

Abstract

Mass media consumption has increasingly been found to adversely impact upon psychological states but research has largely neglected the potential influence of media on aspirations. An experiment demonstrates aspirational incomes to be dramatically altered by a textual narrative despite it not presenting any new information. The narrative is constructed to elicit peer comparison effects, a common element of a variety of media formats. The effect of the narrative rapidly dissipates when concentration is redirected to unrelated tasks however, suggesting any influence media presentations have on aspirations may only be fleeting. Nevertheless the results suggest that mass media might currently be augmenting aspirations with potential implications for satisfaction levels, educational attainment and risk preferences. Also the results imply preferences can be altered without new information being presented, a violation of individual decision making theory. An amendment to the theory is proposed.

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1 Introduction

Life in the modern age requires one to navigate around an inundation of commercial, political and news media. Accompanying this is an increasing awareness of a range of possible adverse consequences associated with media exposure. For example psychology studies have shown television viewing potentially distorts perceptions of relative affluence in one's society as well as cultivating materialism and thereby reduces life satisfaction (Yang and Oliver, 2010; Buijzen and Valkenburg, 2003; Shrum, Burroughs, and Rindfleisch, 2005; Burroughs and Rindfleisch, 2002). Although the body of research analysing the link between exposure to mass media and underlying psychological states grows there has to date been scant investigation of media's influence on aspirations.

This study analyses whether aspirations and preferences over various goals can be augmented by seemingly unrelated media presentations. It seeks to offer insight on whether reading a newspaper article regarding challenges facing a devastated Haiti may diminish one's income aspirations or whether seeing the home of a fictional television family boasting a multitude of modern gadgets would increase them. No prior studies have been uncovered investigating whether aspirations can be augmented by exposure to such media items.

Aspirations are of interest as they are likely to serve as mediating factors between perceptions and values, such as peer comparison and materialism, with feelings of satisfaction and motivation (McBride, 2010; Mentzakis and Moro, 2008; Shields, Wheatley Price, and Wooden, 2009; Stutzer, 2004). This results in aspirations having a tremendously broad range of influence with their being shown to play a pivotal role in influencing subjective well-being (SWB), job satisfaction, attainment of tertiary education, willingness to accept risk, motivation to overcome poverty and desire for empowerment and autonomy (Clark, 1996; Karlsson, Dellgran, Kilingander, and Garling, 2004; Kiyama, 2010; Leung, Chen, and Lam, 2010; Poggi, 2010; Ray, 2006; van Kempen, 2009).

More generally any evidence demonstrating aspirations are susceptible to seemingly innocuous messages would demand a reconsideration of individual decision making models by revealing preferences to be susceptible to change without new information. Further-

more these messages need not possess a direct relationship with the goals being augmented. An advertisement for a holiday to Europe for example may not present any information the viewer is not already aware of but may induce the viewer to more strongly prefer high income at the expense of other desires. This could result in the viewer aspiring to higher income without the original advertisement explicitly mentioning costs. Also the effect may act on one's subconscious with one being oblivious of the advertisement having any effect.

As a first step in analysing the influence of media on aspirations this experiment primes participants with a textual story to determine whether a simple narrative alone is capable of manipulating aspirations. The narrative is considered too transparent and simple to be comparable to typical media messages but embodies the fundamental element defining all media items, the communication of a story. Should the narrative prove effective in augmenting aspirations it would strongly suggest actual media items are imparting at least as significant an influence on aspirations.

The narrative is designed to augment one's peer comparison reference point by discretely drawing attention to either an affluent district of Sydney Australia or a less affluent district. The districts used in the priming, Sydney's Eastern and Western Suburbs, are for Sydney residents synonymous with extraordinary wealth and the working class respectively. This is confirmed by 96% of domestic students and 81% of international students participating in the experiment identifying the average cost of living in the Eastern Suburbs as being strictly greater than the Western Suburbs. The priming thus evokes pre-existing considerations of affluence and class rather than explicitly setting a reference level. Although prior studies explicitly setting a reference point have successfully augmented aspirations (Festinger, 1942; Sokolowska, 2006), they are unable to extend their inferences to mass media presentations.

While this study considers aspirations in the sense of goals individuals set for themselves which includes but is not restricted to consumption, occupation and education dimensions, the constraints of a laboratory experiment require the operational definition to be far more narrow. Aspiration is operationally defined as the ratio between the minimum income considered necessary for a "reasonably comfortable standard of living" and what

is perceived to be the average income of Sydney residents. Aspiration is operationally defined by income considerations as they are likely to be reliable proxies for determining the level of a variety of goals. It is expected that educational, occupational and consumption considerations are captured by this measure. Also a minimum aspirational income is simplistic enough the results are unlikely to be plagued by participants misinterpreting what is asked.

This study also examines the persistence of any priming influence beyond the point of exposure. The persistence of any effect is of great interest as the indirect consequences of viewing media items may be somewhat mitigated if any change in aspirations as a result is only fleeting. A risk task similar to that introduced in Eckel and Grossman (2008) and a real effort task similar to one utilised in Segal (2008) and Cason, Gangadharan, and Nikiforakis (2011) are used to distract participants after exposure to the priming mechanism in some of the treatments. The risk and real effort tasks demand participants' full attention but otherwise do not involve any strategy considerations or intellectual exertion. These tasks are introduced prior to the aspiration measure in some treatment groups while in others the aspiration measure is obtained immediately following the priming. Thus the experiment boasts a two by two design along the dimensions of whether a higher aspiration or low aspiration reference point is established and whether aspiration is measured immediately following the priming or after one's attention is diverted.

Aspirations are found to be greatly augmented by the priming device but with the influence rapidly diminishing if attention is diverted to consideration of the risk and real effort tasks prior to the aspiration measurement. It is not observable whether the priming became ineffectual in the treatment groups with a delay in measuring aspiration due to a time delay, having one's attention diverted or because the tasks exerted their own influence on reference points.

The responses to the risk task reinforced the ephemeral nature of the stimulus with the risk preferences being influenced only if measured immediately following the priming. This result was surprising for it being in the opposite direction than anticipated. Participants primed with higher aspirations demonstrated a greater aversion to risk than those primed with lower aspirations, directly contrary to prior studies (March, 1988; Sokolowska, 2006).

Diecidue and van de Ven (2008) offers a model explaining the observations, suggesting one receives an additional utility gain from attaining one's aspiration level. Hence if aspirations levels are low enough such that one can attain them even with the unfavourable outcome in a risk choice, one is likely to prefer the riskiest option that still ensures the aspiration level is reached. Thus there may be a U-shaped function for risk in relation to aspirations.

Contrary to expectations effort was not found to be related to aspirations. The cause is uncertain with one possibility that the effort task offered too great an explicit incentive inducing a majority of participants to achieve the maximal outcome. Alternatively it is conceivable the priming influence had already dissipated when the real effort task was presented as in all treatments the real effort task was preceded by the risk task. Finally it may simply be that aspirations do not translate to one's motivation to perform a contrived matching task in a laboratory setting. Any subsequent studies examining the effect of effort should offer a lower compensation scheme for effort contribution or ensure the task is more challenging. Also the order of the risk and real effort tasks should be reversed between treatments.

The results obtained overturn conventional individual decision making theory (IDMT). An additional component termed *focus* is proposed to augment the choice rule and allow IDMT to accommodate the finding that goal preferences may be changed by stimuli that do not present new information.

The aim of this research is to offer a greater awareness of potential indirect consequences of exposure to mass media. It is hoped this will encourage the creation of messages that induce a beneficial secondary effect or deter those that may inflict harm. There is a wealth of potential for this with higher aspirations associated with higher academic performance and likelihood of attaining tertiary education, higher wages and job prestige as well as drive for self betterment (Kiyama, 2010; Leung, Chen, and Lam, 2010; Staff, Harris, Sabates, and Briddell, 2010; Koo and Fishbach, 2010). Augmenting aspirations may also reduce risk taking behaviour through establishing realistic expectations or minimising hedonic adaptation (the tendency for updating of goals to erode gains in SWB) (March, 1988; Matthey, 2008; Easterlin, McVey, Switek, Sawangfa, and Zweig, 2010; Graham and Oswald, 2010; Lucas, 2007). Also it is hoped exposing further limitations of

traditional IDMT will encourage development of new theories that are more robust to real world phenomena.

The remainder of the article is structured as follows. Section 2 synthesises the existing literature relating to aspirations and suggests avenues for further inquiry. Section 3 details the experimental design and procedure of this study. Sections 4 and 5 report the data analysis and robustness tests. Sections 6 and 7 analyse the implications of the findings and pose questions for further research including whether stimuli more closely resembling real world media or stimuli based on facts have a more persistent effect. The majority of the experiment instructions as well as data analysis results are reported in the Appendix.

2 Literature Review

This study seeks to emulate media stimuli by exposing participants to a textual narrative. Narratives are of interest as virtually all media presentations are focused upon communicating a story. This includes news and finance reports that frequently attempt to convey the implications of the report for individuals (retirees suffering with a slump in equity markets for example). While no studies have been uncovered examining the influence of narratives on aspirations a broad range of studies have examined whether using a narrative or case study is more persuasive than presenting statistical data (Dickson, 1982; Winterbottom, Bekker, Conner, and Mooney, 2008; Baesler and Burgoon, 1994; Kisielius and Sternthal, 1986).

An intriguing finding is that the vividness of the message (whether the information is emotionally or conceptually engaging) is influential for both persuasiveness and also persistence. Baesler and Burgoon (1994) for example found beliefs about juvenile delinquency remained altered by a vivid statistical message one week after the priming. It did not find vivid or non-vivid narrative messages to have an enduring effect however. None of the studies evaluating the efficacy of narratives considered aspirations or goal preferences although Winterbottom, Bekker, Conner, and Mooney (2008) did demonstrate that preferences for health related treatments could be altered by narrative messages. Such narratives are not comparable to those used in this study however as they sought to inform the viewer of the options available while the this study seeks to investigate whether aspirations can be augmented by media not directly discussing aspirational goals.

IDMT accounts for a change in preferences upon receiving new information by suggesting the information expanded the budget set to include previously unconsidered options or simply changed the perceived utility of each option as the agent became better informed of their attributes (Mas-Colell, Whinston, and Green, 1995, Ch1)[1]. While a number of studies have proposed a range of choice rules to explain observed decision making behaviour none have been discovered analysing whether stimuli devoid of new information be capable of augmenting preferences (Dawes, 1964; Zhang, Hsee, and Xiao, 2005). Any finding that aspirations are susceptible to being manipulated by seemingly unrelated media items

[1]See Appendix A, p.52 for a summary of the notation.

would offer some substantial insights regarding IDMT.

Relatively few studies have investigated influences on aspirations or their consequences and the studies that do have not settled on a universally agreed approach. This presents some challenges, the first of which being how aspiration is defined. Level of Aspiration (LOA) theory provides some of the earliest consideration of aspirations in economic and psychology literature. Festinger (1942) provided experimental evidence to support a model of LOA that defines aspirations as the goal region one chooses to maximise positive valence with respect to the probability of achieving the goal. This is offset by the probability of failing and the consequent negative valence. Starbuck (1963) formalised LOA in an economic context by integrating it with Expected Utility Theory (EUT). The study argued EUT was neglecting the change in utility from achieving or falling short of a specific level of aspiration and also that constraints of bounded rationality and limited information results in individuals setting and gradually updating goals.

Studies focused on education and occupation aspirations more narrowly defined it to relate to the relative academic performance one hopes for, whether one imagines one will attend university or what level in one's organisation's hierarchy will be attained in five years (Leung, Chen, and Lam, 2010; Duncan, Haller, and Portes, 1968; Gibson and Lawrence, 2010). Koo and Fishbach (2010) meanwhile considered aspirations broadly as the level of goals one sets for a variety of scenarios ranging from learning a language to career progression.

Stutzer (2004) offered a material interpretation of aspirations by considering the difference between the minimum income one considers necessary for a reasonable quality of life and one's actual reported income. A modification of this definition is employed in this study. A material interpretation using income considerations is most attractive as it is anticipated to be a reasonable proxy for occupation, education and consumption aspirations. Also it is anticipated one's level of aspirational income would reflect personal characteristics such as ambitiousness and hence be correlated with a broad range of personal goals. Karlsson, Dellgran, Kilingander, and Garling (2004) also used a material measure of aspiration. Survey participants were queried about how necessary they felt eighteen items of luxury consumption were including having a dishwasher and hosting a

dinner party at least once a month. This measure is considered less attractive than the income measure as it has the potential to miss categories important for the individual's aspiration if not explicitly asked and is considerably more complicated to interpret.

While the listed studies offer a sample of how aspirations are commonly considered in research they do not offer an intrinsic justification for why aspiration levels would tend to increase as one satisfies them (Graham and Oswald, 2010).

Evolutionary models of behaviour offer a persuasive explanation. Rayo and Becker (2007) treated evolution as the principal in a principal-agent relationship with the individual as the agent. The agent was considered to have an information advantage with evolution being incapable of responding to environmental changes except in the longest of time horizons. The model considered utility or more generally happiness as the mechanism by which the principle incentivised the agent. The updating of aspirations can in this context be framed as the principle adjusting the reference point for success as the agent became more informed. This reduces the risk of complacency and despondency and thus maximises fitness.

The Heuristic-Systematic Model (HSM) complements this argument by offering a mechanism by which the principle can augment preferences (Chaiken and Maheswaran, 1994; Ziegler and Diehl, 2003). HSM posits that information is processed by two distinguishable processing modes that may operate simultaneously. The Systematic mode processes information in a focused way to determine the strength of the argument but requires more effort than the Heuristic mode which relies on simple decision rules[2]. The model suggests that complicated concepts may impose too great a burden to be processed by the Systematic mode exclusively. Thus considerations regarding the optimal level of aspirations may be determined in part by utilising heuristics of the observed level of attainment of others in one's peer comparison group.

Evolutionary models of behaviour and HSM provide the basis for the hypothesis that aspirations would be susceptible to change through exposure to media items should they be able to register peer comparison evaluations. Although there is evidence of peer com-

[2]These include for example Availability and Anchoring heuristics as discussed in Tversky and Kahneman (1974)

parison influencing aspirations, no research has been uncovered extending this to whether peer comparisons can be influenced by media items.

The marketing literature offers some suggestion this is likely. Amaldoss and Jain (2008) demonstrates a very powerful peer comparison effect consciously or subconsciously influencing preferences by revealing the tendency for individuals to fall into leader-follower categories in consumption behaviour. It reveals leaders wishing to distinguish themselves from followers while followers wishing to emulate leaders. This study however did not consider whether it was media items or direct observation of leaders that induced the preference change in followers.

Where aspiration change is directly addressed there is commonly a perception of it being predominantly a phenomenon guided by progression through the life-cycle or other exogenous factors. Allenby, Garratt, and Rossi (2010) articulated this perspective but also positioned advertising as a means to guide the process to change perceptions of quality and thus form preferences for brands previously beyond one's aspiration level. Although the study directly examined the influence of media stimuli it did not suggest advertisement may be a cause of aspirational change but rather a means of shaping preferences as they naturally transition.

Little else regarding change in aspirations has been uncovered within marketing literature but this nevertheless exceeds the attention from management research. Of the studies including a measure of aspiration many treat it as a reference point for the level of return considered satisfactory when deciding between investment decisions (Brown and Sim, 2009). Lant (1992) meanwhile considered aspirations in the context of future goals an organisation is working towards or hoping to achieve and how these were informed by previous experiences. Although this model could be expanded to a broader conceptualisation of aspirations it nevertheless did not incorporate peer comparison nor media stimuli.

A review of sociology literature revealed a sizeable body of investigation in relation to educational and occupational aspirations. Duncan, Haller, and Portes (1968) provided empirical support for a model of educational and occupational aspirations of school aged children being influenced by their friends' aspirations. Although this study examined

aspiration change from direct interaction rather than exposure to media stimuli it does contribute to the hypothesis that should media items register peer comparison evaluations, aspirations are also likely to be augmented. Other education and occupational aspiration studies include examination of within family variation, variation across ethnicities and between social class (Teachman and Paasch, 1998; Bohon, Johnson, and Gorman, 2006; Reissman, 1953). None of these studies considered whether media exposure might augment aspirations.

McDonald (2004, 2006) considered the potential for media to effect cultural change and influence aspirations by discussing the likely impacts of television being introduced to Bhutan in 1999. The studies are quite limited however, lacking empirical data they largely offer intuitive arguments for likely impacts of television of the Bhutanese culture. Nevertheless they do highlight Bhutan as a valuable destination for future field studies while offering some reasoned arguments to suggest media may already be having a significant impact on well-being in developed economies.

Of the studies uncovered Kacerguis and Adams (1979) offered the strongest suggestion of media stimuli potentially influencing aspirations. It reviewed findings regarding the influence of media, toys and parental practices that constrain children in gender stereotypes resulting in the limiting of occupational and educational aspirations of girls. As the focus of the study was to review the various factors found to perpetuate a gender stereotype on children and their potential consequences for career choice, the study provided no explicit evidence of media inducing aspiration change. Hence this study can only serve as a guide for formulating a hypothesis and motivating further investigation. No sociology research has been identified more closely examining the topic of manipulating aspirations.

The psychology and behavioural economics literature provided some further evidence suggesting aspirations are likely to change with peer comparison evaluations but still no studies examining whether this could be triggered with media items were found. For example Stutzer (2004) showed using interview responses that aspirations were more strongly predicted by the proportion of wealthy households in one's neighbourhood than by mean income. Data did not include measures of what forms of media respondents were exposed to and hence assumed the aspirations are formed from direct observation of signs

of affluence amongst one's neighbours.

This is consistent with McBride (2010) which demonstrated with an experiment participants compared themselves to others in the same category as themselves but to a lesser extent with the wider pool of participants. The implications are readily generalisable to individuals in society comparing their situation to only those in their peer group (such as amongst neighbours, colleagues, others of one's age group etc) and would not be expected to compare themselves with anyone beyond those groups (other nationalities, opposite gender etc). This study provides strong support for aspirations being influenced by peer comparison effects. However the study induced peer comparison simply by informing participants of the mean of others' payouts. This does not consider whether real world comparisons are informed by direct observation of peers or through media representations. Hence the study cannot connect exposure to media and aspiration change.

A large body of the literature examining aspirations considers only the influence of direct observation of those in one's social group on aspirations (Gibson and Lawrence, 2010; Kiyama, 2010). Another body of research did not consider the means by which aspirations were updated at all. For example Karlsson, Dellgran, Kilingander, and Garling (2004) considered aspirations to be dependent on a household's economic situation and a social comparison effect. The study did not state any assumptions regarding whether households compare themselves through direct observation or media cues however. Leung, Chen, and Lam (2010) similarly did not consider the manner of transmission for educational aspiration change. The study measured self reported perceptions of the extent outcomes are determined by fate, whether applying oneself is appropriately rewarded and confidence in one's abilities and demonstrated a positive link between each of these perceptions and aspirations. Leung, Chen, and Lam (2010) is intriguing for suggesting an alternate means of manipulating aspirations without inducing peer comparison but is beyond the scope of inquiry for this study.

While the bulk of the remaining aspiration literature does not investigate the underlying cause, treating it instead as exogenous (Diecidue and van de Ven, 2008; van Kempen, 2009), a handful of studies directly manipulated aspirations. Sokolowska (2006) set an explicit aspiration level in an experimental setting and revealed the aspiration levels had

strong influences on risk tolerance. The results need to be considered with caution however as the experiment was conducted without explicit incentives. Participants were told they were a firm needing to choose between risky and safe approaches to production. They were informed their firm would capture market dominance if they were able to reach a given level of output. This level was changed between treatment groups and formed the basis of the aspiration level. Participants with a higher aspirational target accepted riskier options to reach this goal. A problem arises however of no explicit incentives being in place to ensure some incentive for exceeding the aspiration level. With little intrinsic incentive to choose a risky option that may allow one to exceed the aspirational level, it appears the experiment all but forced the eventual outcome. The study provides compelling evidence that aspirations can be manipulated in a laboratory setting but due to the overt and contrived means of setting an aspiration level, this is not of great intellectual interest for the purposes of the current study.

Koo and Fishbach (2010) offers the most appealing experimental demonstration of aspirations being augmented as the study conducted several experiments, including a field experiment with workers of a South Korean advertising agency, using goal setting as the indicator of aspiration. Goals are broad enough to capture the sense of occupational, educational, material and general achievement aspirations, something not considered in any single study otherwise identified. The experiments each involved priming one treatment group to consider what they have already achieved and another with considering what is left to accomplish. Each of the experiments revealed that considering what is still to be accomplished rather than what has been accomplished increased aspirations. This method also reveals aspiration can be reliably influenced without peer comparison considerations. Although this study demonstrated a reliable means of augmenting aspirations without explicitly setting a reference point it still was unable to provide any indication whether individuals would be susceptible to media items. It does however offer a potential avenue of future research to investigate whether media items are able to induce reflection relating to personal goals and consequently affect aspirations.

Marketing, management, sociology, psychology and economic literature have all touched on aspirations along a few channels of inquiry but none appear to have posed the question

of whether mass media is capable of changing aspirations and whether induced changes in aspirations can have an enduring effect.

3 Method

Design

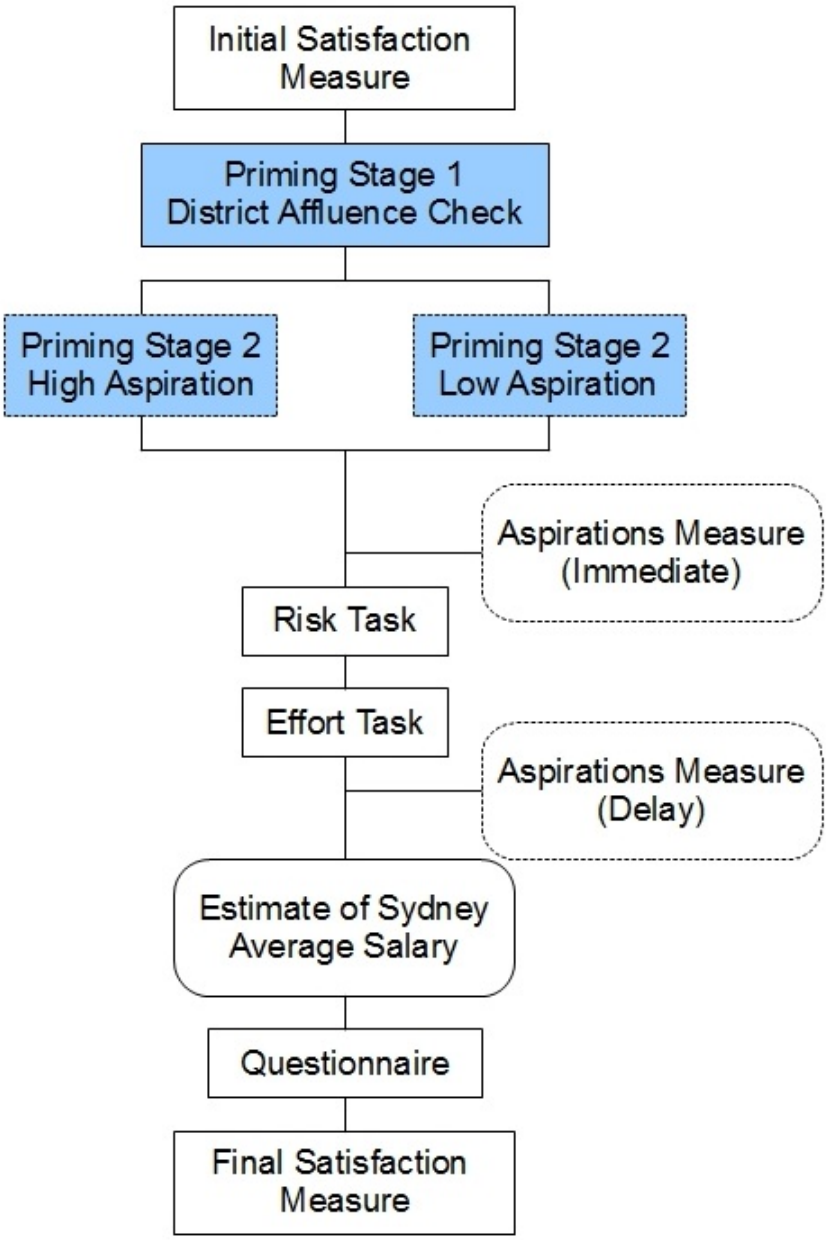
The experiment consists of six components: a priming item including a check of awareness of affluence reputations of the districts of Sydney, a risk task similar to that of Eckel and Grossman (2008) albeit markedly simplified, an effort task similar to that of Segal (2008), a measure of aspirations, life satisfaction measures and a questionnaire. There are four treatment groups in a two by two design along dimensions of whether the participants have been presented with a priming mechanism designed to elicit higher aspirations or lower aspirations and whether the aspiration measure is obtained immediately following the priming or after a delay of several minutes where attention is drawn to tasks that require some consideration (see Table 1).

Table 1: Treatment Groups

	Aspiration Measured Before Risk & RE tasks	Aspiration Measured After Risk & RE tasks
Eastern Priming	High Immediate	High Delay
Western Priming	Low Immediate	Low Delay

Figure 1 shows the arrangement of the elements. The ordering of each task takes into consideration concerns of participants inadvertently having their focus drawn to issues that may result in their providing different responses in later stages (Kahneman, Krueger, Schkade, Schwarz, and Stone, 2006).

Figure 1: Experiment Structure



Aspiration Measure

An aspirational income is obtained by asking participants to envision themselves in a future scenario where they have completed their studies and are living on their own. The question posed is as follows:

Suppose that you have finished your studies and have been working as a pro-

fessional in the field of your choice for a few years. Also suppose that you are living on your own in Sydney.

Please indicate what gross (before tax) annual salary you feel would be necessary for you to maintain a reasonably comfortable standard of living.

Ignore inflation and answer in today's dollar values.

This measure is used as opposed to directly asking one's goal income level as doing so may result in the aim of this study being sufficiently transparent that demand effects would become a concern[3]. Long and complicated measures of aspirations such as that utilised in Koo and Fishbach (2010) are avoided for this reason. An additional benefit of the minimum income measure is its being comparable to the aspiration measure utilised in Stutzer (2004). A minimum income for a future stage of life measure is considered a reasonable proxy to income aspiration levels while being sufficiently opaque that demand effects do not need to be considered.

The majority of participants of the study are undergraduate university students. Consequently a substantial variation in what participants believe to be the costs of independent living in one's post study phase of life is anticipated. To account for this the participants are also asked:

What do you think is the current average gross salary for Sydney residents?

The focal aspiration measure is the ratio of the aspirational income to the average salary estimate.

Figure 1 indicates where in the experiment the aspiration measures are placed. The average salary estimate for all treatment groups is placed after the risk and effort task to ensure perceptions of average salaries do not influence one's willingness to accept risk or effort contribution decisions.

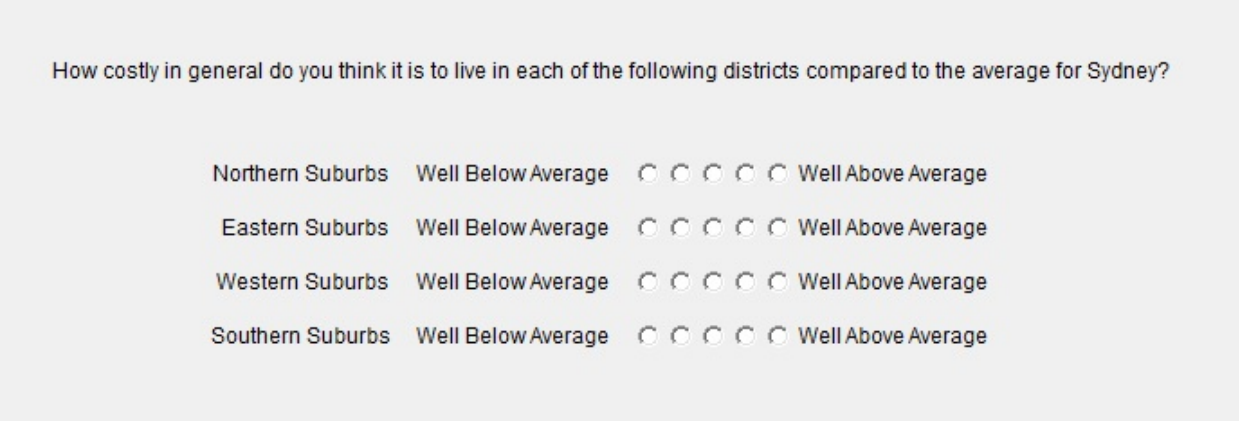
Priming Mechanism

The priming mechanism is intended to subtly remind participants of commonly held perceptions regarding the affluence of either a relatively wealthy district of Sydney or one

[3]As truthful reporting of aspirational incomes cannot be incentivised with monetary payments demand effects would not be preventable.

considered to be less affluent than the average. The Eastern Suburbs is selected as the high aspiration prime as it is widely regarded as an upper class district while the Western Suburbs is selected as the low aspirations prime as it is perceived broadly as a working class district. As the priming only makes salient the perceptions already held by participants, it is necessary to check that the participants indeed are familiar with the reputations of each of the districts of Sydney. Thus the first stage of the priming mechanism asks the participants to rate on a five point scale how costly it is in general to live in each of the Northern, Southern, Eastern and Western Suburbs of Sydney (see Figure 2). Only responses from participants who rate living in the Eastern Suburbs to be more costly than the Western Suburbs (the two districts to be used in the following stage of priming) are accepted as the priming mechanism would be ineffective for anyone not holding this perception. As the relative affluence of each of the districts of Sydney is largely undisputed and common knowledge to virtually all Sydney residents, it is considered reasonable to elicit social comparison sentiments by referring to costliness of living in each of the Eastern and Western Suburbs.

Figure 2: District Affluence Check



The first stage directly requiring participants to associate preconceived beliefs of affluence and districts also serves to make these concerns salient for the second stage of the priming that involves a short fictional narrative being presented. The narrative is in text form and is of a professional in her early thirties describing how she is fairly satisfied with her life (see Appendix B, p. 52). For the High Aspiration treatment groups the priming

states the subject of the narrative has lived in the Eastern Suburbs (generally considered to be highly affluent) for several years while the Low Aspiration treatment groups are informed she has lived in the Western Suburbs for several years. The remaining content of the narrative is identical. Although attempting to reflect a plausible account of an individual's perceptions of their lifestyle participants should nonetheless find it apparent that it is contrived. All participants are also informed the narrative is 'stylised' prior to viewing the item. To ensure the participants read the narrative the program executing the experiment remained on the narrative stage for one minute, more than twice the time necessary for a native English speaker to read the material.

To address the research interest of this study it is critical to verify that the priming mechanism both changes the aspiration measure through a genuine change in aspirations rather than an alternate reason and is a realistic representation of the narrative commonly underlying everyday media items. These criteria are likely to be satisfied as care is taken to ensure the priming mechanism does not include any explicit suggestions of wealth or affluence. No numbers were shown in the priming (with the exception of the stage count-down timer) and the priming narrative for all treatment groups included no comments regarding material or consumption considerations. It is highly likely any change observed in the aspirational to average income ratio is due to a genuine change in aspirations along a material dimension. Also the exploitation of pre-existing notions of affluence in the priming is considered highly typical of many forms of advertising, especially luxury and fashion goods.

Another core requirement of the priming mechanism that it not convey any new information is satisfied by the participants not shown any factual statements. Their thoughts regarding costliness of living in each of the listed districts are garnered but without feedback being provided while the narrative was described as being stylised. The notion of a fictional character being satisfied with various qualities of her life in either an affluent or working class district would not overturn any pre-existing notions nor say anything unexpected.

Risk and Effort Tasks

The risk task is a simplification of that used in Eckel and Grossman (2008) with participants presented with a panel asking them their preference between six options (see Appendix B). The first option entails no risk while each following option has increasing expected payouts but also increasing distribution of potential payments. Of the options involving change the probabilities of each outcome is 50% to ensure participants are able to clearly observe expected payout increases with each riskier option. All treatment groups are presented with the same risk task.

In the effort task participants are asked to match words with numbers provided in a key displayed in a panel above the questions (see Appendix B). This is very similar in design to Segal (2008) although that study measured respondents' time and accuracy to complete the task while this study allows participants the option to skip the task at any point. Participants will be offered a very large monetary incentive to match as many words as possible in four minutes which is intended to be moderately restrictive. Effort will be measured by the number of words correctly matched in the time provided. The hefty monetary incentive for each correct response ($2 for a potential payout of $60) is to ensure all participants will at least attempt to match a few words and avoid a clustering of responses with no attempt made. As Segal (2008) found that performance in a coding speed test of this nature is not strongly predicted by ability but rather motivation to perform, any significant differences in performance between High Aspiration and Low Aspiration treatment groups is likely to be based on aspirations influencing one's motivation to perform.

Questionnaire, Satisfaction and Mood Measures

The questionnaire is presented following the average salary estimate and includes questions of parental education levels, region of birth and field of study (see Appendix B).

Satisfaction is measured at the beginning of the experiment to introduce it as a control and to ensure that it is not compromised by any element within the experiment. The satisfaction measure from one to ten is identical to question 22 of the World Values Survey 2005-2006 and is measured. The question asks:

All things considered, how satisfied are you with your life as a whole these days?

In the same panel a question asks participants to identify how positive is their mood at the moment. The scale ranges from one to seven and is labelled from "Very Negative/Unhappy" to "Very Positive/Happy". This is to ensure participants separate considerations of their long run satisfaction from life considerations with how they are feeling in that moment. Also the difference in scale of measurement somewhat inhibits the participants from simply choosing the same rating for both without considering them independently.

Mood is measured again at the conclusion of the experiment to check whether any notable change in mood has arisen as a consequence of the priming or participating in the experiment otherwise.

The mood at the conclusion of the experiment is also measured on a scale from one to seven to ensure the result is clearly comparable to the initial mood measure.

Procedure

The sessions were conducted on computer terminals using zTree, a program designed for carrying out economics experiments (Fischbacher, 2007).

Participants were invited through the University of Sydney's online pool of registered participants. The potential pool of participants are all recruited on campus and are predominantly undergraduate students at the University of Sydney. The majority are within the Business faculty or Economics School but almost all fields of study are represented to some extent.

As the experiment did not involve participants interacting with one another the experiment was conducted on a revolving door basis throughout the day. Care was taken to ensure participants who had completed the experiment did not communicate with those not yet undertaking the experiment but as there is no strategy element to the paid component of the experiment there would be little useful information participants would have been able to pass on.

The experiment was conducted over two days with participants informed that only one in ten will be paid for their responses prior to accepting an invitation. Payment was determined by a randomly determined number being matched to a unique identifying code all participants were presented with when arriving at the lab. For details of how payment was determined see Appendix C. Payment was made on a separate day once the experiment was concluded.

4 Results

222 observations were obtained. Of these 27 participants failed to identify higher living costs in the Eastern Suburbs of Sydney as compared to the Western Suburbs. As the priming mechanism requires that participants be aware of the relative affluence of these districts, these observations were discarded.

Only 4 participants indicated being born in Middle East/North Africa, 6 indicated Europe and 8 indicated Americas. To reduce potential for spurious results due to small sample size all such observations are grouped into 'Other' in an adjusted birth region variable. Similarly only 4 participants indicated their parent language as an Indian dialect and 7 indicated a European language, hence these observations are grouped into 'Other' in an adjusted parent language variable. 2 participants indicating their chosen major as econometrics are grouped with economics in 'Econ/metrics' category in adjusted field of study variable. All following results are obtained using these adjusted control variables [4].

A summary of key dependent variables is shown in Table 2. The table reveals the presence of outliers which is confirmed by plotting aspirational income against average income estimates (see Figure 3).

The five extreme observations are accounted for by identifying them as such in an "Outlier" dummy variable. A sixth observation is also identified as an Outlier as it boasted an aspirational to average income ratio of 14 due to an average annual salary estimate of only AU$2500. The resulting distribution of aspirational income to average income estimates according to treatment group does not reveal any immediately apparent differences between treatments (see Figure 7, p.61).

Dummy variables are created for each response of the categorical variables of parent language, birth region and area of study.

Risk is coded to integer values between 0 (for the certain choice) and 5 (highest gamble between $80 and $0). Similarly parental education is coded to integer values between 1 and 5 with responses of "unknown" recoded as missing. 8 observations were excluded from some estimates due to unknown parental education attainment.

[4]Estimates using the unadjusted variables were also conducted but arrived at the same outcomes for the treatment variables and thus not included.

Table 2: Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
High Immediate					
Aspirational Income	51	67088.24	20315.93	30000	150000
Average Salary Estimate	51	52362.75	13831.51	20000	95000
Aspiration-Average Ratio	51	1.305689	.3065522	.7142857	2.111111
Low Immediate					
Aspirational Income	50	52320	15602.77	25000	100000
Average Salary Estimate	50	55100	16667.52	24000	110000
Aspiration-Average Ratio	50	.9794683	.2400336	.4285714	1.538462
High Delayed					
Aspirational Income	49	100857.1	147889.2	5000	900000
Average Salary Estimate	49	52683.67	25435.52	2500	200000
Aspiration-Average Ratio	49	2.123284	2.712889	.025	14
Low Delayed					
Aspirational Income	45	69533.33	72355.37	4000	500000
Average Salary Estimate	45	55755.56	76932.42	4000	550000
Aspiration-Average Ratio	45	1.3439043	.5219176	.3	2.857143

Dummy variables for whether the treatment was High or Low and also whether they were Immediate or Delayed along with interaction terms are created[5].

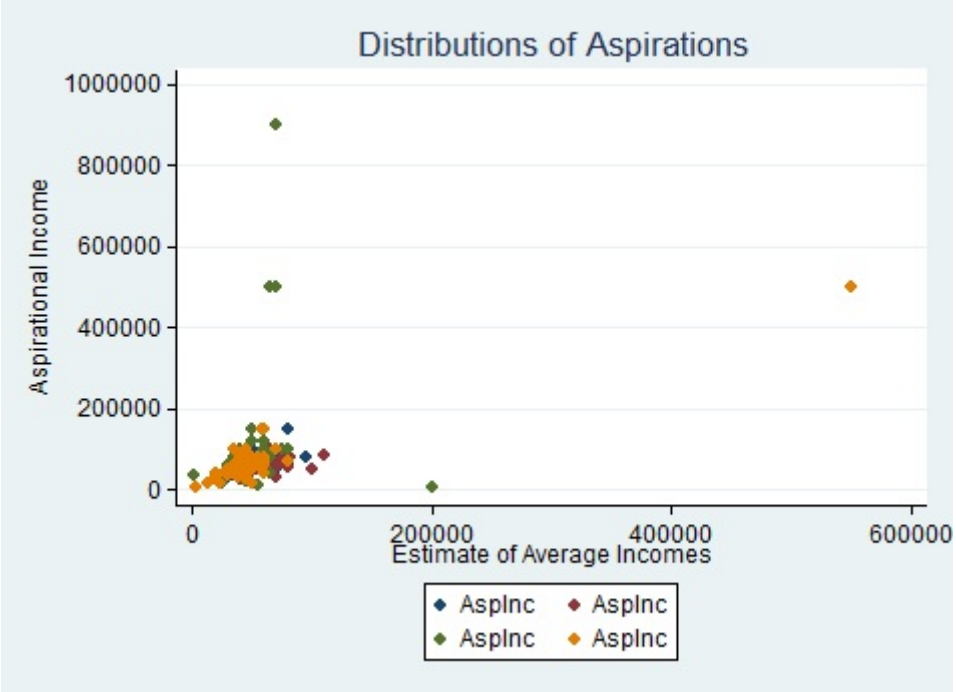
Estimating the effect of the priming without any control variables yields a significant result along all dimensions (Table 3, column 1). Including all available control variables the priming is found to have a statistically significant effect only for the treatment groups where the aspirational income and average salary estimates were measured immediately following the priming (excerpt shown in Table 3, column 2; complete estimate shown in Table 10, p.58). This result is still observed when a more restrictive criteria for whether the control variables are relevant is used and several control variables are dropped from the estimation[6] (Table 3, column 3).

The 27 discarded observations are checked to see whether the priming had a reverse effect on those who indicated the Western Suburbs as being more costly. Only 7 participants indicated the Western Suburbs being strictly more costly on average than the Eastern. There are too few observations in each treatment to ascertain whether the priming had

[5]See page 56 for description of variables

[6]Satisfaction, final mood, parental education, area of study, year of study and whether the participant registered as an outlier retained

Figure 3: Aspirational Income against Average Salary Estimate



the reverse effect for these participants. No results are reported for these observations.

The relative effect of priming on aspirational income ratio is shown in Table 11 (p.60). This reveals the priming is still significant to the 1% confidence level for the immediate treatment groups. However the relative estimation also indicates a significant change in aspirations between the Low Immediate and Low Delayed treatment groups as well as the outliers no longer being significant while gender now appears to be. No clear explanation can be provided for these divergent results.

The effect of priming on risk is estimated using ordered probit regression. Table 4 column 1 estimates risk against the treatment dummies only and finds no statistically significant difference across treatment groups. This is also suggested by Figure 8 (p.63) showing histograms of risk preferences across treatment groups. When control variables are included in the estimation however a significant difference is observed between the High and Low Delayed treatments. Table 4 column 2 shows an excerpt of the risk estimated against the treatment dummies as well as all available control variables (complete estimate shown in Table 12, p.62).

Table 3: Effect of Priming on Aspirational to Average Income Ratio

Aspirational to Average Income ratio	**Regression Series (1)**	**(2)**	**(3)**
Low to High Immediate	**0.33*** **	**0.39*** **	**0.38*** **
	(0.05)	(0.12)	(0.11)
Low to High Delayed	**0.78** **	0.53	0.43
	(0.40)	(0.35)	(0.31)
High Immediate to Delayed	**0.82** **	0.32	0.24
	(0.39)	(0.22)	(0.20)
Low Immediate to Delayed	**0.36*** **	0.18	0.19
	(0.08)	(0.20)	(0.19)

Notes:
** Significant at 5% level
*** Significant at 1% level
Series (1) includes only treatment dummies as independent variables
Series (2) includes all control variables
Series (3) includes some control variables

Table 4: Effect of Priming on Risk

Risk	**Regression Series (1)**	**(2)**	**(3)**
Low to High Immediate	0.04	-0.1	0.06
	(0.20)	(0.22)	(0.22)
Low to High Delayed	-0.34	**-0.59** **	**-0.46** *
	(0.23)	(0.25)	(0.25)
High Immediate to Delayed	-0.19	-0.32	-0.17
	(0.21)	(0.23)	(0.23)
Low Immediate to Delayed	0.19	0.16	0.23
	(0.22)	(0.24)	(0.23)

Notes:
* Significant at 10% level
** Significant at 5% level
Estimates obtained by ordered probit regression
Series (1) includes only treatment dummies as independent variables
Series (2) includes all control variables
Series (3) includes some control variables

Table 5: Effect of Priming on Real Effort

	Regression Series		
Real Effort	**(1)**	**(2)**	**(3)**
Low to High Immediate	-0.02	0.63	0.30'
	(1.40)	(1.41)	(1.39)
Low to High Delayed	-1.51	0.76	0.07
	(1.52)	(1.53)	(1.56)
High Immediate to Delayed	-0.67	0.50	0.43
	(1.42)	(1.42)	(1.46)
Low Immediate to Delayed	0.82	0.37	0.66
	(1.50)	(1.48)	(1.43)

Notes:
Estimates obtained by tobit regression
Series (1) includes only treatment dummies as independent variables
Series (2) includes all control variables
Series (3) includes some control variables

The effect of priming on real effort is estimated using tobit regression due to a large clustering of results at the maximum real effort outcome. Table 5 column 1 shows real effort estimated against the dummy variables only while column 2 is an excerpt of the estimate including all control variables (complete estimation shown in Table 13, p.64). Priming is not found to have an effect on real effort in these estimates.

An ordered probit estimation is conducted with satisfaction against the control variables in addition to risk, real effort and aspirational income ratio. The treatment group dummies were not included as satisfaction was measured prior to exposure to priming and participants were allocated to treatment groups randomly. Table 14 (p.65) indicates initial and final mood are related with satisfaction.

A histogram of satisfaction indicates responses are similar to prior studies with a mode close to the upper range and a negative skew (see Figure 4).

Mood change is estimated using ordered probit estimation against the treatment dummies and all control variables and not found to differ between treatments (see Table 6). It is found to be influenced by one's aspirational income ratio, one's initial mood and one's parents' language (see Table 15, p.66).

Figure 4: Satisfaction Histogram

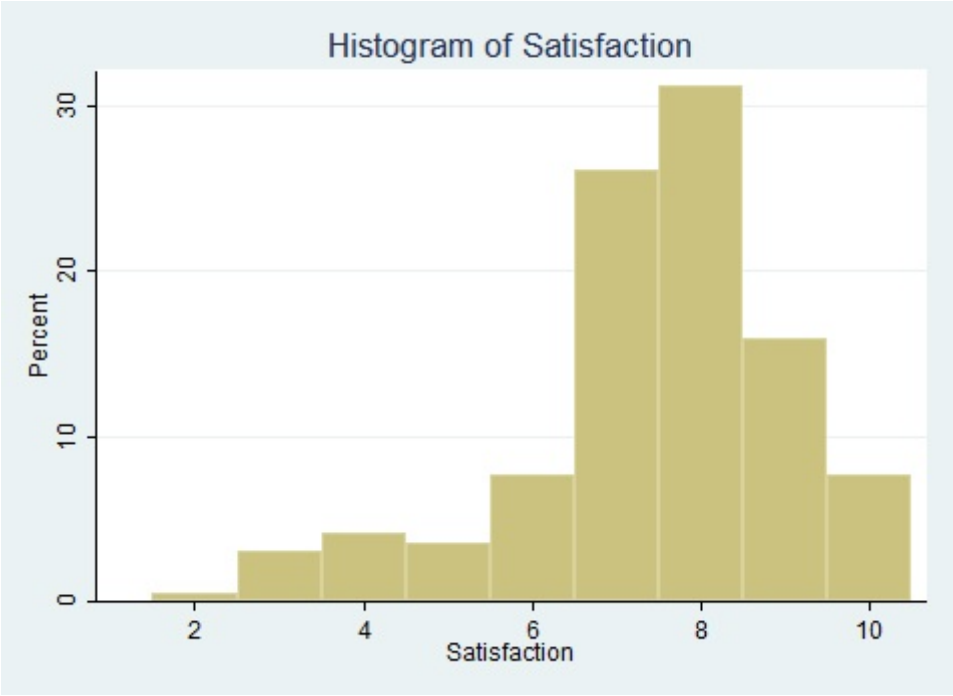


Table 6: Excerpt of Influences on Mood Change

	Regression Series		
Change in Mood	**(1)**	**(2)**	**(3)**
Low to High Immediate	0.05	0.02	0.05
	(0.23)	(0.27)	(0.26)
Low to High Delayed	-0.22	-0.19	-0.17
	(0.22)	(0.26)	(0.25)
High Immediate to Delayed	-0.15	-0.05	-0.04
	(0.21)	(0.26)	(0.24)
Low Immediate to Delayed	-0.12	-0.16	-0.17
	(0.24)	(0.25)	(0.25)

Notes:
Estimate by ordered probit
Series (1) includes only treatment dummies as independent variables
Series (2) includes all control variables
Series (3) includes some control variables

5 Robustness Tests

As the experiment implemented a between subjects design it is perhaps also necessary that participants in the High aspiration treatment groups consider the Eastern Suburbs to be strictly above average in costliness and those in the Low aspirations groups consider the Western Suburbs to be average or below average. The data is re-analysed by applying a requirement that participants of the High aspiration treatments identify the average costliness of living in the Eastern Suburbs as being 4 or 5 while those in the Low aspiration treatments identify the costliness of the Western Suburbs being 3 or lower (recall the scale has 5 points with 1 labelled "Well Below Average" and 5 labelled "Well Above Average"). Table 16 p.68 shows some additional observations are discarded from the High aspiration treatments but the data largely is unaltered. The analysis with this set of observations provides the same findings as those already reported and are thus not included.

Squared terms for the control variables of risk, real effort, father and mother education and year of study are included in estimates of the effect of the priming (excerpt of estimate shown in Table 17, p.68). The squared and linear terms are not significant at the 5% level and the conclusions regarding the priming and the other control variables are unchanged. As inclusion of the squared terms do not meaningfully contribute to the interpretation they are not included in the main analysis.

The estimate of satisfaction and mood change revealed the potential for multicollinearity problems arising from initial and final mood and satisfaction being highly correlated. A pairwise correlation matrix is obtained (see Table 18, p.70). This reveals potential multicollinearity issues between area of birth and parental language, area of birth and international student, mother's education, father's education and satisfaction and mood.

The variance inflation factor is obtained for each of the estimates of the effect of priming on aspiration income ratio (Tables 20 and 21, p.69). As none of the VIF values exceed 5 the estimates of priming influencing aspirations are not considered to suffer from multicollinearity.

The priming is dependent on participants being aware of the Eastern Suburbs of Sydney being more affluent than the Western Suburbs however there is a potential for the

results to be distorted should there have been a large enough proportion of the participants being ignorant of this but correctly guessing the Eastern Suburbs being more costly on average. Domestic students are expected to overwhelmingly be aware of the wealth divide in Sydney which is confirmed by the observation of 109 of 113 (96%) domestic students indicating living costs in the Eastern Suburbs are strictly greater on average compared to the Western Suburbs. Meanwhile 86 of 109 (81%) international students indicated the Eastern Suburbs to be more costly. Although there is no indication of international students systematically guessing at the affluence of each district it is worthwhile examining whether the results are significantly different if only the sub-sample of domestic students are used. The results are indicated in Table 22 (p.72). This reduces the number of observations to 101 (some observations lost due to missing values for parental education) and results in the Low to High Immediate treatments no longer being statistically significant at the 5% confidence level if all control variables are included. However the priming coefficient is statistically significant when the restrictive criteria for inclusion of control variables is applied.

Table 7 reveals that the average aspiration ratio across the treatment groups for the domestic student sub-sample is comparable to the averages for the entire sample. This coupled with the reduction of the expected change in aspirational income ratio due to the priming from 0.39 for the entire sample to 0.25 for the domestic student sub-sample suggests the priming does affect the aspirations of domestic students but some differences emerge regarding interaction with the control variables. It is not clear what these differences may be however as none of the control variables for the domestic student sub-sample have changed sufficiently to become significant at the 5% confidence level. Outliers are no longer significant but only represented six observations in the full sample analysis and thus are unlikely to account for the extent of the change.

Table 7: Mean of Aspirational Income Ratio (Domestic Students only)

Aspirational to Average Income ratio			
East Immediate	1.34	East Delayed	1.67
	(0.32)		(1.43)
West Immediate	0.99	West Delayed	1.37
	(0.25)		(0.42)

Standard Deviation in parentheses

6 Discussion

An inspection of the summary results without outliers (Table 9, p.58) offers an indication of a significant influence of the priming on aspirational income ratio when aspirations are measured immediately following the priming. Participants of the High Aspirations Immediate group indicated a higher aspirational income ratio ($M = 1.31, SD = 0.31$) compared to those of the Low Aspirations Immediate group ($M = 0.98, SD = 0.24$), $t(99) = 5.96$, $p < 0.01$. This result appears borne out of the priming changing perceptions of the minimum income necessary for a reasonable quality of life (($M = 67088, SD = 20316$) for High Immediate and ($M = 52320, SD = 15603$) for Low Immediate, $t(99) = 4.10$, $p < 0.01$) rather than a change in the mean income estimates (($M = 52363, SD = 13832$) for High Immediate and ($M = 55100, SD = 16668$) for Low Immediate, $t(99) = -0.90$, $p > 0.10$).

The summary statistics also suggest the effect of the priming is diminished when aspiration is measured following the risk and effort tasks. The High Delayed reported only a slightly higher aspirational income ratio ($M = 1.42, SD = 0.58$) compared to Low Delayed ($M = 1.35, SD = 0.52$), $t(92) = 1.97$, $p < 0.10$.

OLS estimates of the influences on aspiration including all measured control variables and only a subset of control variables both reveal the priming to influence aspirations if measured immediately following the priming (Table 10, p.58). With the exception of outliers no other variable is significant in influencing aspirations. The magnitude of the effect is noteworthy with a log-linear estimate revealing approximately a 30% decrease in expected aspirational income ratio if the Eastern Suburbs priming is replaced with the Western Suburbs priming (Table 11, p.60). These results need to be treated somewhat cautiously as the result of the Low Delayed to Low Immediate treatment groups having a statistically significant difference on aspirations disagrees with the linear-linear estimate. If the relative estimate is considered more convincing it suggests the High priming did not influence aspirations while those in the Low priming had their aspirations reduced momentarily[7]. This would be consistent with Dickson (1982) finding greater weight being

[7]Perhaps a narrative describing someone living in an affluent district being pleased with her life failed to move people but the narrative of someone living in a working class district but quite content left a stronger

placed on a negative narrative.

Table 10 (p. 58) reveals a larger influence of priming on aspirations for the Delayed groups than the Immediate groups but with a far larger error. This is not reflected by the summary statistics nor the log-linear model, both suggesting a smaller change in aspirations between the Low Delayed and High Delayed groups relative to the Immediate groups. As none of these are found to be significant at the 5% confidence level they suggest the priming influence is largely lost after one completes a risk and real effort task. It is unclear however whether the effect being dissipated is a result of a short period of time having elapsed, one needing to focus attention on an unrelated matter or whether the risk and real effort tasks introduced a new reference point (effectively functioning as priming mechanisms themselves) and consequently diluted the effect of the priming.

The risk and real effort tasks are believed to have had a small priming effect, possibly by making the potential for high monetary payouts salient, given the summary statistics and Table 10 reveal higher aspirations if the risk and real effort tasks were performed prior to aspirations being measured. If the risk and real effort tasks did not introduce a higher reference point aspirations would be expected to converge towards a point bounded by the levels of the Low Immediate and High Immediate groups.

The lack of a significant result on aspirations for the Delayed groups when estimating with the log-linear model is consistent with the conclusion that the priming's influence on aspirations is greatly diminished following the risk and real effort tasks. The results of the log-linear model still need to be regarded with caution however and cannot independently demonstrate the priming effect does not persist after risk and real effort tasks.

The ephemeral nature of the priming is also supported by risk attitudes being influenced by the priming only if one completed the risk choice immediately following viewing the priming item (see Table 4 and Figure 8, p.63). The risk measure not being significantly influenced by aspirational income ratio indicates one's ex ante aspiration level did not have an effect on risk preferences. This suggests ex ante aspiration is not applied to the risk task performed in the context of a laboratory experiment but the change in aspirations induced within the experiment did influence risk preferences.

impression

Of significant interest is the result being in the opposite direction than anticipated. Participants exposed to the higher aspiration priming had a stronger preference for less risky choices. Some caution must be taken as ordered probit estimation is not significant at the 5% level of confidence if using the more restrictive criteria for what control variables to include in the estimation. Nevertheless the direction of the result is clear and contradicts the model proposed by March (1988) and experimental evidence obtained in Sokolowska (2006) which demonstrated those with a larger gap between their actual wealth and their goal wealth would be more inclined to accept riskier choices.

A potential explanation is offered by Diecidue and van de Ven (2008) which augments von Neumann and Morgenstern Expected Utility theory by incorporating an additional utility gain derived from attaining one's aspiration level. This results in participants being more risk tolerant if the only options that offer a chance of achieving their aspiration levels are more risky while they may be risk averse should the safer options assure them of achieving their aspiration level. This is most clearly illustrated with an example.

Consider an experiment where participants are implicitly primed with an aspiration level similar to the method of Sokolowska (2006). They are offered two gambles as shown in Table 8 and asked to report which they prefer. Here gamble A is riskier with a greater variation but also higher expected return. Assume an equal number of participants would prefer each gamble if participants are first explicitly primed with an aspiration level of \$20. If however the aspiration level was \$40, Diecidue and van de Ven (2008) and general intuition would suggest a higher proportion of participants would choose gamble B. Hence an increase in aspiration level from \$20 to \$40 would be expected to decrease the observed risk tolerance. The same intuition and model would suggest however that an increase in aspiration from \$40 to \$80 should induce more participants to prefer gamble A than B given gamble A is the only option with any possibility of achieving the aspiration level. Hence this demonstrates risk preferences may exhibit a U shape with respect to aspirations, initially decreasing as aspirations increase from a very low starting point but eventually increasing as aspirations continue to rise.

Recalling that participants were not primed with an explicit aspiration level in this study it is impossible to translate the aspiration level reported by the aspirational income

Table 8: Hypothetical Gamble Choices

	50% Chance	**50% Chance**
Gamble A	\$100	\$20
Gamble B	\$60	\$40

ratio into benchmarks for the risk task. Hence it is possible risk preferences were lower for the High Delayed treatment relative to the Low Delayed due to the aspiration levels being on the descending portion of a U shaped function but this cannot be verified with the available data.

Effort is not found to be related to treatment group nor to the aspirational income ratio (see Table 13, p.64). Instead risk and whether the participant was a domestic or international student were significant predictors. This suggests that those who were more driven to achieve the highest possible monetary payout contributed more effort but ability was also a relevant factor with those perhaps less familiar with English struggling more with the task. The observation that ability may be a relevant factor for some identifies some restrictions to the claim of Segal (2008) that performance on such an encryption task is dependent almost exclusively on motivation. However the observation that those more risk tolerant did perform better supports the claim that motivation is a strong predictor of effort contribution. Assuming this claim is upheld for this experiment the lack of an observed priming effect suggests the priming was unable to stimulate or depress motivation in the real effort task.

As the effort task followed the risk task in all treatment groups this may be a consequence of too much time having elapsed between the priming and effort task, the loss of focus with the risk task commanding all of one's attention, the priming having no influence on effort at any time or the reward to difficulty/unpleasantness ratio of the task being too high. The potential reward offered of AU\$2 for every correct response is considered extremely generous to prevent data clustering should too many participants choose to skip the task entirely. Unfortunately the reverse complication appears to have arisen with approximately half the observations clustered at the maximum score. This highly generous monetary reward for the task may have crowded out any intrinsic mo-

tivation that might otherwise have been present, including any motivation from ex ante aspiration levels (Pokorny, 2008). Should effort and aspirations be measured using such an encryption task in future studies it would be advisable to reduce the monetary incentive substantially, possibly not offer monetary reward at all, reduce the amount of time available (from 4 minutes to 3 minutes) and to create another set of treatment groups where the risk and real effort task order is reversed such that in at least one treatment group the real effort task immediately follows the priming.

Satisfaction was not found to be significant with any of the measured control variables with the exception of mood (see Table 14 p.65). Mood change is more intriguing with the observation that the aspirational income ratio is a significant and negative predictor of mood change (Table 15 p.66). Two sample t-tests reveal no significant effect of the treatment group on mood change (High to Low Immediate: $t(99) = 0.13$, $p > 0.10$; High to Low Delayed: $t(92) = -1.00$, $p > 0.10$). Given that the main result demonstrates the priming to have a very significant effect on aspirations for the Immediate treatment groups, these results indicate the effect of the priming has effectively dissipated by the end of the experiment but one's inherent aspiration level influences whether one leaves the experiment with a more positive or negative mood. This may be due to those with higher ex ante aspiration levels also having higher expectations prior to starting the experiment and are thus more likely to be disappointed. Unexpectedly participants with parents that spoke to them in a language other than English or a Chinese dialect would more likely have a positive mood change. It is possible they had lower expectations prior to the experiment but no intuitive justification for this argument is forthcoming.

Influences on Susceptibility to Priming

Characteristics captured by the control variables such as gender and risk preferences may also be indicators of how susceptible one is to aspirations being augmented by media stimuli. This is examined by including interaction variables for both treatment variables and the control variable in question. This effectively results in a $2 \times 2 \times 2$ estimation with three individual variables of interest, three 2-way interaction terms and one 3-way interaction term. The analysis of the influence of risk preference on susceptibility (Table

23, p. 74) reveals no significant result at 5% confidence level for the low*risk nor the high*risk terms. The lack of significance of the low*risk term indicates there is no expected difference for someone more risk averse compared to someone less risk averse were he to be in the Low Immediate group compared to the High Immediate group. Similarly high*risk result suggests there is no expected difference in susceptibility for those in the Delayed groups. An important observation is that the coefficient of the low variable in the left panel is not significant at the 5% confidence level. This is a consequence of the variable capturing the expected change in aspiration due to the priming for only those who chose the certain gamble. There are only 9 observations in the High Immediate group and 12 in the Low Immediate group that selected the certain gamble. This small sample size inflates the standard error. Hence the finding of the priming no longer being significant in Table 23 can be safely discounted. The analysis of the influence of gender on susceptibility confirms the priming is significant provided a reasonable number of observations are obtained in each category (Table 24).

Gender, parental education and satisfaction are each similarly checked for any influence on susceptibility of having one's aspirations augmented. Tables 24 to 27 reveal that only mother education may have an effect on susceptibility. The results need to be treated with some caution however as mother education only influences the priming in the Delayed groups and the absolute coefficients on High and InteractionHI both exceed 2. The signs on the coefficients imply that for participants whose mother did not complete high school the priming persisted beyond the risk and effort tasks to significantly influence aspirations. The effect is significantly diminished amongst those indicating higher maternal education levels. Mother education not being an indicator of susceptibility amongst the Immediate treatment groups implies that it influences the persistence of the priming more than susceptibility to the priming. However there are only 4 observations in each of High Delayed and Low Delayed indicating their mother did not complete secondary education. This suggests a very substantial chance the result is an anomaly and would not be reliably reproduced. Further investigation specifically focusing on the influence of mother education is necessary to adequately identify whether it influences susceptibility to or persistence of the priming.

Whether the magnitude of the perceived difference in affluence between the Eastern and Western Suburbs influences the strength of the priming is also checked and not found to have a significant effect (see Table 28 p.76). The coefficient on the low variable is not significant at the 5% confidence level also due to a small number of observations inflating the standard error (18 participants in the Low Immediate indicated a East West affluence gap of 1 and 9 did so in the High Immediate).

Some Concerns

Although the robustness tests do not invalidate the conclusions initially reached there are a number of issues that need to be addressed. Firstly the validity of the operational definition of aspirations used can be contested due to the lack of an universally satisfactory representation of aspirations. For the result obtained to be interpretable it is crucial the income ratio reflects participants' aspirations rather than some unidentified quality. When considering the minimum income necessary to enjoy a particular standard of living one would interact a reference point for typical incomes and one's perception of the cost of consuming a variety of goods and services. Thus the minimum income measure can be augmented either by a change in one's perceptions of the expense of a given basket of goods and services or a change in the goods and services one aspires to consume. The latter is considered a change in aspirations while the former is considered simply a change in one's perception of purchasing power.

Thus the income ratio may fail to reflect changes in aspirations if the perception of purchasing power is somehow augmented. The priming mechanism exposed all participants to an identical narrative with the exception of "Eastern" or "Western" Suburbs. It offered no information the participants were not already aware of. It did not highlight any material aspects of living in Sydney nor any associated costs. Care was taken to ensure participants were not primed with any numbers prior to the aspiration measure. It is thus considered exceedingly unlikely participants had their perceptions of purchasing power augmented. No explanation can thus be offered for the observed income ratio difference between High and Low Immediate treatment groups other than the priming inducing a change in aspirations.

The priming and income ratio are exclusively concerned with material or consumption aspirations. There needs to be some consideration for the possibility of other dimensions of aspirations being crowded out. No literature has yet been identified to investigate possible crowding out between material, family, relationship, educational and occupational aspirations. Should material aspirations have been increased at the expense of other dimensions this can have unexpected consequences for risk preferences, educational attainment, satisfaction etc. Further research is necessary to investigate whether priming augmenting a specific dimension of aspiration is effective in augmenting other dimensions and whether the change in behaviour is dependent on the nature of aspirations being augmented. For example it would be informative to investigate whether risk preferences are influenced in the same manner by an increase in educational aspirations as they are by an increase in material aspirations or whether a material priming mechanism can have an impact on educational aspiration.

Also there is a concern that the experiment paying only one in ten participants may have caused self selection amongst participants and under represent those who are risk averse. As 23% of participants (45 of 195) who selected the certain gamble and risk preferences were not found to influence susceptibility or persistence of the priming it is not expected that the validity of the results are diminished by any self selection effect.

A further concern is the average salary estimate immediately following the absolute aspirational income measure in the Delayed groups but following the risk and effort tasks in the Immediate groups. This allows the risk and effort task to potentially augment the average salary estimate and complicate comparison between the Immediate and Delayed treatments. However there is no reason to suspect the risk and effort tasks would bias estimates of average salary in opposite directions for the High Immediate and Low Immediate groups. Thus there is no reason to diminish the validity of the finding that aspirations are strongly influenced by this priming mechanism but without an effect persisting after a risk and effort task. Any further research using this aspiration measure would likely avoid such concerns if the aspirational income and average salary estimate were asked simultaneously. For example participants may be asked their estimate of the average salary and in the same stage then asked what percentage of this they considered

the minimum necessary for a reasonable quality of life (with the clarification that they can report more than 100%). This would provide a more explicit and transparent measure of material aspirations but also risks an increased proportion of participants reporting 100% aspiration level while not reflecting their true position. An alternative is to obtain the average salary estimate at the beginning of the experiment and to offer payment for accurate estimates but this risks the estimate affecting the prime unintentionally. Some pilot studies prior to any future research examining this dynamic are advisable to ensure the aspiration measure does not suffer from these complications.

Implications for Individual Decision Making Theory

The manipulability of aspirations challenges the fundamental assumptions of IDMT by allowing preferences to be changed without any new information being presented and more surprisingly without the message directly relating to goals. The change in goal preferences can be explained by existing IDMT framework if the priming can be considered to have either expanded the budget set of goals one can aspire to or induced a change in the choice rule being used.

A change in budget set is strictly ruled out as there is no reason to suggest participants were not previously aware they would be able to aspire to a higher income goal. Also the lack of any new information being communicated ensures the budget set must remain unchanged.

A change in the choice rule being used is possible but cannot explain why the effect does not persist. Also there is no clear reason why a high aspiration prime appears not to change the choice rule while the low aspiration prime does.

Another possibility is that aspirations are obtained using a disjunctive choice rule and the priming alters the reference level from which the search for a satisfactory option begins. A disjunctive choice rule selects the first option considered that satisfies some minimum criteria (Dawes, 1964; Zhang, Hsee, and Xiao, 2005). Butler and Loomes (2007) meanwhile showed the initial reference point to be a strong influence on preferences. If the priming changed the level from which goal incomes begin to be considered the observed change in aspirations is explained within the current IDMT framework. However this approach

is not quite satisfactory either as the ephemeral nature of the aspiration change requires some memory element to be introduced.

The most parsimonious method of reconciling IDMT with the results is to incorporate in the choice rule an element representing both a reference point and a memory dimension. Refer to this as *focus* F. Hence the modified choice rule is of the form $C(B, F) \subset B$[8]. Thus focus operates by changing the weight one places on various qualities when making a decision by altering the reference point. For example listening to a radio interview with a relationship counsellor discussing divorce might temporarily establishing a starting reference point of devoting oneself fully to one's family and sacrificing one's career. This could induce individuals to weigh time with the family more heavily and income less so in determining occupation goals as individuals tend to prefer options more closely resembling the initial reference (Butler and Loomes, 2007). The effect will be lost after some period of time or other matters of consideration crowd out the memory of the radio program causing the focus to return to its former state.

The focus term can operate simultaneously with a changed budget set if new information permanently expands the agent's budget set from B to B' ($B \subset B'$ and $B, B' \in \mathcal{B}$) while also temporarily influencing F.

For example if an individual's occupational goal is to be a teacher, $C(B, F_0) = \{teacher\}$ with F_0 representing her focus not being relevant for this decision. She then views a television crime program and begins to consider forensic science as being equally as attractive a career objective. She had not previously identified the possibility of working in this field, thus her budget set expands to $B' = \{B$, forensic scientist$\}$. Her choice rule would be $C(B', F_1) = \{$*teacher, forensic scientist*$\}$ with F_1 indicating she is being influenced by the television program. After a period of her attention being diverted to other matters she is no longer consciously or subconsciously being influenced by the program and her focus reverts to F_0. Her budget set remains B'. Thus if her preferences revert to strictly preferring teaching over all other options her choice rule would be $C(B', F_0) = \{teacher\}$.

[8]No specific choice rule is presupposed as the available data does not reveal any particular choice rule to be operating.

Stimuli can have different durations of influence which are likely dependent on how vivid and memorable the agent finds the stimulus item. Thus an engrossing film may have a significantly longer and more powerful influence than viewing a billboard on one's journey to work. However repetition may have a cumulative effect and result in the billboard imparting greater influence overall. Further research is necessary to uncover the impact if any of more vivid media or repeated exposure.

Although focus reflects a temporary effect it is possible focus may be unceasingly influencing preferences should individuals be constantly confronted with relevant stimuli. Further research is necessary to ascertain whether this is the case and whether this increases the likelihood of media messages leaking into a permanent influence on preferences.

7 Conclusion

Aspirations and more generally preferences are shown to be susceptible to manipulation by a simple textual narrative. This implies exposure to mass media may have indirect consequences of which the viewers and producers of media may be unaware. The effect of the narrative used in this study is found to be short lived but this does not dismiss the potential for media to be perpetually influencing aspirations. This is due to the high frequency of exposure to media as well as the potential for more vivid items to have a more enduring effect.

Individuals wishing to maintain autonomy over their aspirations should limit their exposure to any form of media that may induce peer comparisons. Examples include news articles and celebrity magazines discussing the exploits of the highly affluent and charity adverts appealing for donations.

More research is necessary to identify whether there are cumulative effects to exposure and also to ascertain whether more vivid stimuli (such as an engrossing film) can impart a stronger or more enduring influence. Also there is scope to investigate whether narratives communicating dimensions other than peer comparison, such as perceptions of fate control and self efficacy, would similarly influence aspirations.

Risk preferences and aspirations are revealed to be more sophisticated than prior models suggest with individuals showing a greater risk aversion with increasing aspirations. A U-shaped relation between risk and aspirations is hypothesised but this cannot be tested with the existing data. Further investigation with explicit aspirational targets is necessary to offer deeper insights regarding the relationship between risk and aspiration.

IDMT is shown to be inadequate, unable to account for the change in goal preferences without new information being presented. An additional component of *focus* is incorporated in the choice rule to reflect the role of reference points and memory in determining preferences. Further studies are required to evaluate whether the focus term is itself robust to real world observations or whether an alternate model for determining preferences and choices is warranted.

A key limitation of the study is the aspiration measure relying upon an evaluation of

what one considers to be the minimum income necessary to maintain a reasonable standard of living. Although the measure is framed such that participants consider themselves in a future stage of life no evidence can be offered demonstrating this necessarily is associated with a proportional shift in aspirational incomes.

Another limitation of the aspiration measure is that although aspirational income is expected to correlate with a range of other aspirations such as education, occupation and social status, the current data cannot provide any indication of the effect of the priming mechanism on these and other aspiration dimensions.

Finally there are external validity questions due to the laboratory environment of the experiment. Hence the context under which participants viewed the narrative is significantly divergent to the typical circumstances where one is exposed to media items. Although participants were neither told reading the priming item was mandatory nor that doing so would be rewarded the lack of any distractions or option to skip to the next stage effectively forced participants to consciously absorb the material. This is not comparable to a significant proportion of ordinary media exposure where individuals are often actively attempting to avoid viewing the material (although with other material such as news articles one consciously chooses to absorb the content). Hence this study is unable to comment on whether media items that individuals are momentarily exposed to but do not consciously absorb result in any observable aspiration change.

Several steps need to be undertaken in future studies to overcome these limitations. Firstly concerns regarding the aspirations measure can be addressed by obtaining a more inclusive aspiration measure. This includes directly measuring aspirational goals if demand effects can be prevented and using priming that more closely resemble a range of media items. Secondly the aspect of whether consciously absorbing a media item is required for aspirations to change can be examined by incorporating treatments where the priming mechanism is subtly presented. For example in an explicit priming treatment participants are asked to rate the effectiveness of a poster advertising a luxury car. In the subtle priming treatment the same poster is displayed on the wall of the laboratory but no mention is made of it in the course of the experiment. Finally future studies utilising field data would overcome external validity concerns. Such data could include surveys

of aspiration before and after major publicity campaigns (such as China advertising the 2010 World Expo) or a significant change in the media landscape (such as television being introduced in Bhutan in 1999 or the increasing sophistication of mobile phones delivering news, entertainment and advertisements).

This study provides the first step towards a deeper understanding of how media may be influencing aspirations. In doing so it has raised significantly more questions than it has been able to answer. It is hoped a greater awareness of how media may manipulate aspirations will arise with further studies and in turn reduce harm and promote positive behavioural change.

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Appendices

A Individual Decision Making Theory Framework

Define X as the set of all goals that one can aspire to. Define $\mathcal{B} \subset X$ to be a family of all nonempty subsets of X such that every element of $\mathcal{B}$ is a set $B \subset X$. Call $B \in \mathcal{B}$ the *budget set*. The *choice rule* $C(\cdot)$ assigns a nonempty set of chosen elements $C(B) \subset B$ for every budget set $B \in \mathcal{B}$. The set $C(B)$ may contain a single element if this is the preferred goal for the individual among the alternatives in B but may contain multiple elements if they are all acceptable goals. Assume that one of the acceptable goals is randomly chosen to be reported should the agent be requested to indicate their most preferred option. Let a high material aspiration be represented by the choice rule selecting a greater material attainment goal.

B Experiment Design

Priming Item

The following is the narrative presented to High Aspiration treatment participants. The Low Aspiration group had "Eastern Suburbs" replaced by "Western Suburbs".

> Samantha (not her real name) is a former graduate of the University of Sydney having studied Economics. She has lived in the Eastern Suburbs for the past eleven years. She has a mortgage and a daughter of primary school age.
>
> I notice a sense of community here in the Eastern Suburbs with the neighbours all being fairly friendly. There's plenty to get out and do to keep the kids entertained and there's a few nice restaurants and cafes in walking distance.
>
> We live near a big train hub so getting about isn't too hard. That's fairly

important as my husband and I both work a little way from home but the commute's quite tolerable.

Another really important thing for me is decent schools. I'm quite happy with the local primary school my daughter goes to. You just get a sense that it's a safe, friendly environment and you can tell the teachers just love what they do.

Risk Item

The following is the risk question all participants were presented with.

Please indicate which option you prefer among the following gambles:

- 100% chance of earning $30
- 50% chance of earning $24 and 50% chance of earning $40
- 50% chance of earning $18 and 50% chance of earning $50
- 50% chance of earning $12 and 50% chance of earning $60
- 50% chance of earning $6 and 50% chance of earning $70
- 50% chance of earning $6 and 50% chance of earning $70
- 50% chance of earning $0 and 50% chance of earning $80

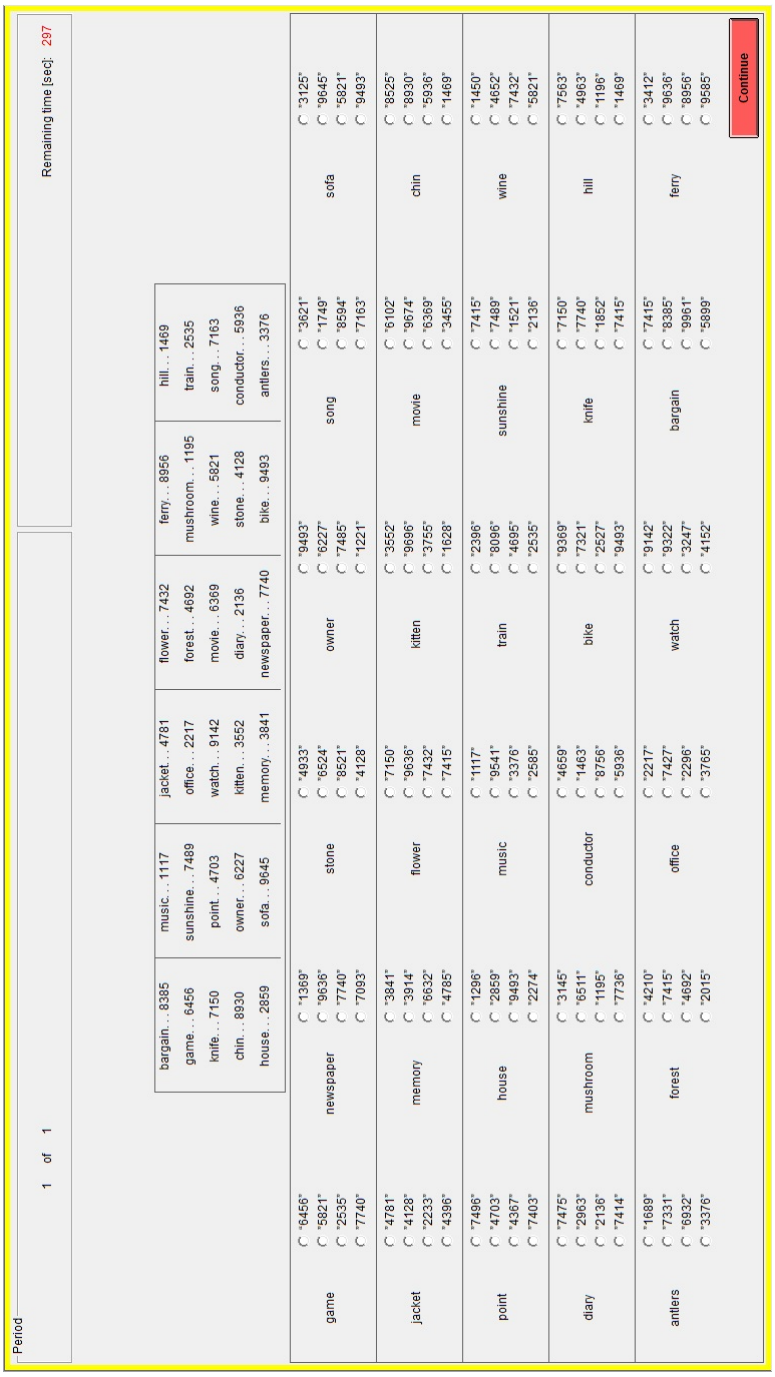
Effort Task

The following is a screenshot of the coding speed that constituted the real effort task.

Questionnaire

The following is a screenshot of the questionnaire.

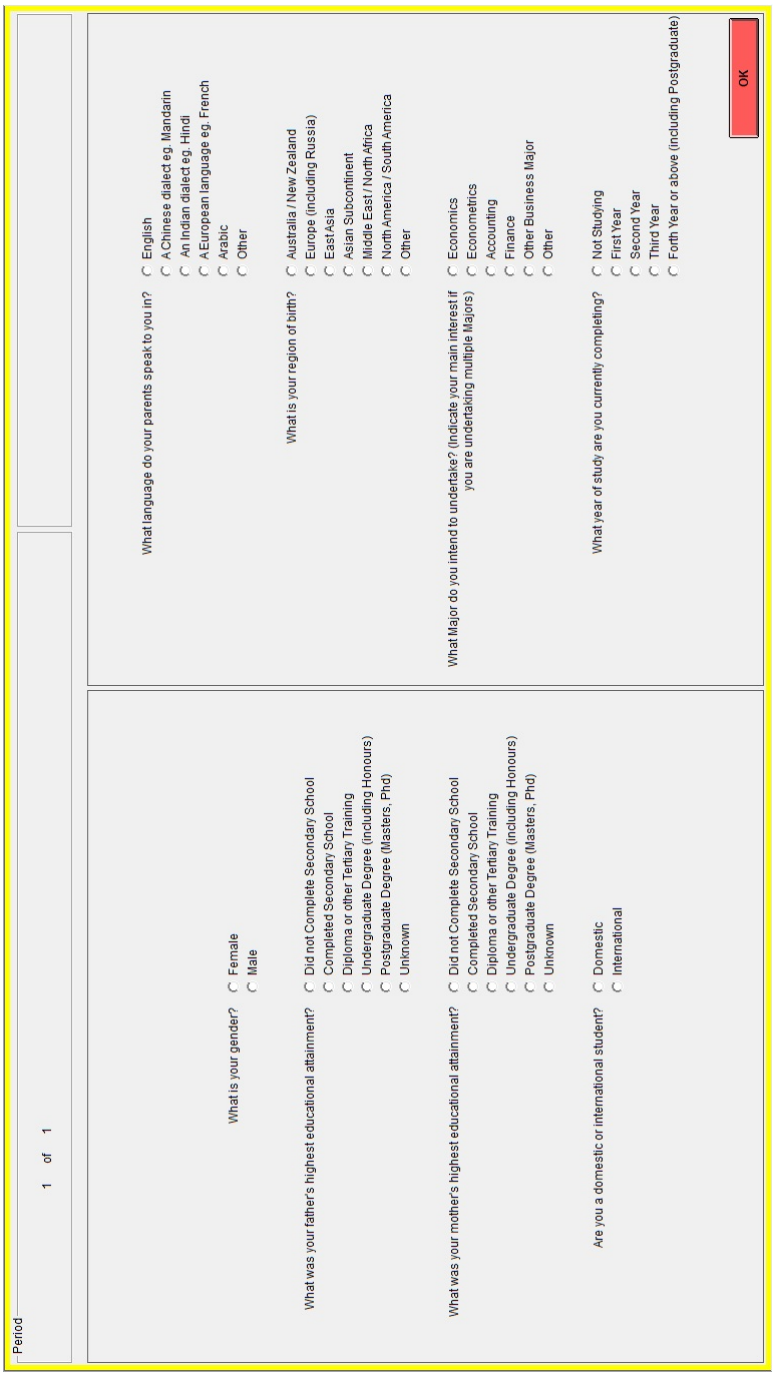
Figure 5: Coding Speet Test



C Payment Mechanism

Participants were informed only one in ten would be paid on the basis of their responses in the email inviting them to sessions for the experiment, in the Participant Information Statement provided with the email and also prior to beginning the experiment when they

Figure 6: Questionnaire



arrived at the laboratory.

The mechanism for determining who was paid was described as follows:

> One in ten participants will be randomly chosen to receive payment. In Week 2 you will be sent an email indicating the winning number which is the unit

value of the S&P/ASX 200 at its close on Tuesday 2nd August. If the unit value of your Individual ID (as indicated on the card you received at the start of the experiment) matches this number you will be paid for your responses in the experiment.

For example:

You have Group ID number 3 and Individual ID number 38. On Tuesday 2nd August the closing value of the S&P/ASX 200 is 4468.1. The winning number is therefore 8. As your Individual ID ends in 8 you will be paid based on your responses.

The email in week 2 will include details of how to collect payment. **You will need to bring your card with you when collecting payment so please retain your card.**

D Additional Results

Description of Variables

Aspiration Ratio Ratio of minimum income for reasonable standard of living to average salary estimate

Low Treatment group dummy variable

High Treatment group dummy variable

Delayed Treatment group dummy variable

Immediate Treatment group dummy variable

InteractionLD Treatment group dummy variable

InteractionHD Treatment group dummy variable

Satisfaction Ascending indicator of life satisfaction from 1 - 10

Father Edu five point parental education scale, 1 - no secondary, 2 - completed secondary, 3 - diploma, 4 - undergraduate, 5 - postgraduate

Mother Edu five point parental education scale, 1 - no secondary, 2 - completed secondary, 3 - diploma, 4 - undergraduate, 5 - postgraduate

Study... Field of study dummy variables, Economics/econometrics comparison category

Year of Study Indicator from 1 - 4 with 4 representing 4th year or above

Initial Mood Ascending mood indicator from 1 - 7 measured at start of experiment

Final Mood Ascending mood indicator from 1 - 7 measured at end of experiment

outlier Dummy variable indicating

whether observation identified as outlier

Risk Indicator of risk choice from 0 (certain outcome) to 5 (most risky option)

Real Effort Score obtained on effort task (possible score from 0 - 30)

Male Dummy Gender dummy variable, female comparison category

International Student Domestic/international student dummy variable, domestic comparison category

Parent Lang... Parent language dummy variables, English comparison category

Born... Region of birth dummy variables, Aus/NZ comparison category

Tables and Figures

Table 9: Summary Statistics without Outliers

	Obs	Mean	Std. Dev.	Min	Max
HighImmediate					
Aspirational Income	51	67088.24	20315.93	30000	150000
Average Salary Estimate	51	52362.75	13831.51	20000	95000
Aspiration-Average Ratio	51	1.305689	.3065522	.7142857	2.111111
LowImmediate					
Aspirational Income	50	52320	15602.77	25000	100000
Average Salary Estimate	50	55100	16667.52	24000	110000
Aspiration-Average Ratio	50	.9794683	.2400336	.4285714	1.538462
HighDelayed					
Aspirational Income	44	68227.27	27358.82	10000	150000
Average Salary Estimate	44	49409.09	11422.78	2500	80000
Aspiration-Average Ratio	44	1.416446	.5786999	.1818182	3
LowDelayed					
Aspirational Income	44	59750	30818.39	4000	150000
Average Salary Estimate	44	44522.73	15692.52	4000	80000
Aspiration-Average Ratio	44	1.353786	.5236756	.3	2.857143

Table 10: Effect of Priming on Aspirational to Average Income Ratio

Aspirational to	**Regression Series**					
Average Income ratio	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Low	**-0.33*** **	**-0.39*** **	**-0.38*** **			
	(0.05)	(0.12)	(0.11)			
Delayed	**0.82** **	0.32	0.24			
	(0.39)	(0.22)	(0.20)			
InteractionLD	-0.45	-0.13	-0.05			
	(0.40)	(0.39)	(0.36)			
High				**0.78** **	0.53	0.43
				(0.40)	(0.35)	(0.31)
Immediate				**-0.36*** **	-0.18	-0.19
				(0.08)	(0.20)	(0.19)
InteractionHI				-0.45	-0.13	-0.05
				(0.40)	(0.39)	(0.36)
Satisfaction		0.06	0.06		0.06	0.06
		(0.07)	(0.05)		(0.07)	(0.05)
Father Edu		0.05	0.05		0.05	0.05

Continued on Next Page...

Aspirational to Average Income ratio	**Regression Series** (1)	(2)	(3)	(4)	(5)	(6)
		(0.09)	(0.09)		(0.09)	(0.09)
Mother Edu		-0.13	-0.11		-0.13	-0.11
		(0.11)	(0.11)		(0.11)	(0.11)
Study Accounting		0.48	0.45		0.48	0.45
		(0.32)	(0.30)		(0.32)	(0.30)
Study Finance		-0.06	-0.02		-0.06	-0.02
		(0.20)	(0.18)		(0.20)	(0.18)
Study other business		0.18	0.20		0.18	0.20
		(0.19)	(0.18)		(0.19)	(0.18)
Study other		-0.08	-0.07		-0.08	-0.07
		(0.13)	(0.12)		(0.13)	(0.12)
Year of Study		0.02	0.04		0.02	0.04
		(0.08)	(0.09)		(0.08)	(0.09)
Final Mood		-0.16	-0.17		-0.16	-0.17
		(0.11)	(0.11)		(0.11)	(0.11)
outlier		**5.41****	**5.47*****		**5.41****	**5.47*****
		(2.17)	(2.10)		(2.17)	(2.10)
Initial Mood		0.02			0.02	
		(0.11)			(0.11)	
Risk		0.06			0.06	
		(0.06)			(0.06)	
Real Effort		-0.02			-0.02	
		(0.02)			(0.02)	
Male Dummy		-0.17			-0.17	
		(0.15)			(0.15)	
International Student		-0.17			-0.17	
		(0.14)			(0.14)	
Parent Lang Chinese		0.01			0.01	
		(0.29)			(0.29)	
Parent Lang Other		0.04			0.04	
		(0.20)			(0.20)	
Born East Asia		0.09			0.09	
		(0.32)			(0.32)	
Born Asia Sub cont		0.02			0.02	
		(0.20)			(0.20)	
Born Other		0.28			0.28	
		(0.20)			(0.20)	
_cons	**1.31*****	**2.23****	**1.87****	**1.34*****	**2.02***	**1.68****
	(0.04)	(0.98)	(0.79)	(0.08)	(1.03)	(0.83)

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

Table 11: Relative Effect of Priming on Aspirational Income Ratio

Log of Aspirational to Average Income ratio	**Regression Series**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Low	**-0.29*** **	**-0.32*** **	**-0.31*** **			
	(0.05)	(0.07)	(0.07)			
Delayed	0.10	0.06	0.03			
	(0.14)	(0.11)	(0.10)			
InteractionLD	0.17	0.19	0.21			
	(0.16)	(0.15)	(0.15)			
High				0.12	0.13	0.10
				(0.15)	(0.12)	(0.12)
Immediate				**-0.27*** **	**-0.25*** **	**-0.24*** **
				(0.07)	(0.09)	(0.09)
InteractionHI				0.17	0.19	0.21
				(0.16)	(0.15)	(0.15)
Satisfaction		0.01	0.01		0.01	0.01
		(0.03)	(0.02)		(0.03)	(0.02)
Father Edu		0.04	0.04		0.04	0.04
		(0.04)	(0.04)		(0.04)	(0.04)
Mother Edu		-0.09	-0.09		-0.09	-0.09
		(0.06)	(0.06)		(0.06)	(0.06)
Study Accounting		0.04	0.04		0.04	0.04
		(0.15)	(0.14)		(0.15)	(0.14)
Study Finance		-0.02	-0.01		-0.02	-0.01
		(0.13)	(0.12)		(0.13)	(0.12)
Study other business		0.13	0.18		0.13	0.18
		(0.11)	(0.12)		(0.11)	(0.12)
Study other		-0.05	-0.02		-0.05	-0.02
		(0.08)	(0.07)		(0.08)	(0.07)
Year of Study		-0.02	-0.02		-0.02	-0.02
		(0.04)	(0.04)		(0.04)	(0.04)
Final Mood		-0.05	-0.06		-0.05	-0.06
		(0.06)	(0.05)		(0.06)	(0.05)
outlier		0.57	0.60		0.57	0.60
		(0.90)	0.91		(0.90)	0.91
Initial Mood		0.00			0.00	
		(0.05)			(0.05)	
Risk		0.00			0.00	
		(0.03)			(0.03)	
Real Effort		-0.02			-0.02	
		(0.01)			(0.01)	
Male Dummy		**-0.16** **			**-0.16** **	
		(0.08			(0.08	
International Student		-0.08			-0.08	
		(0.12)			(0.12)	
Parent Lang Chinese		0.07			0.07	
		(0.14)			(0.14)	

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Log of Aspirational to Average Income ratio	**Regression Series** (1)	(2)	(3)	(4)	(5)	(6)
Parent Lang Other		0.02			0.02	
		(0.10)			(0.10)	
Born East Asia		-0.11			-0.11	
		(0.18)			(0.18)	
Born Asia Sub cont		-0.01			-0.01	
		(0.12)			(0.12)	
Born Other		0.17			0.17	
		(0.13)			(0.13)	
_cons	**0.24*** **	**1.20***	0.62	**0.22*** **	**1.14***	0.54
	(0.03)	(0.63)	(0.43)	(0.06)	(0.64)	(0.43)

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

Figure 7: Aspirational against Average Income without outliers

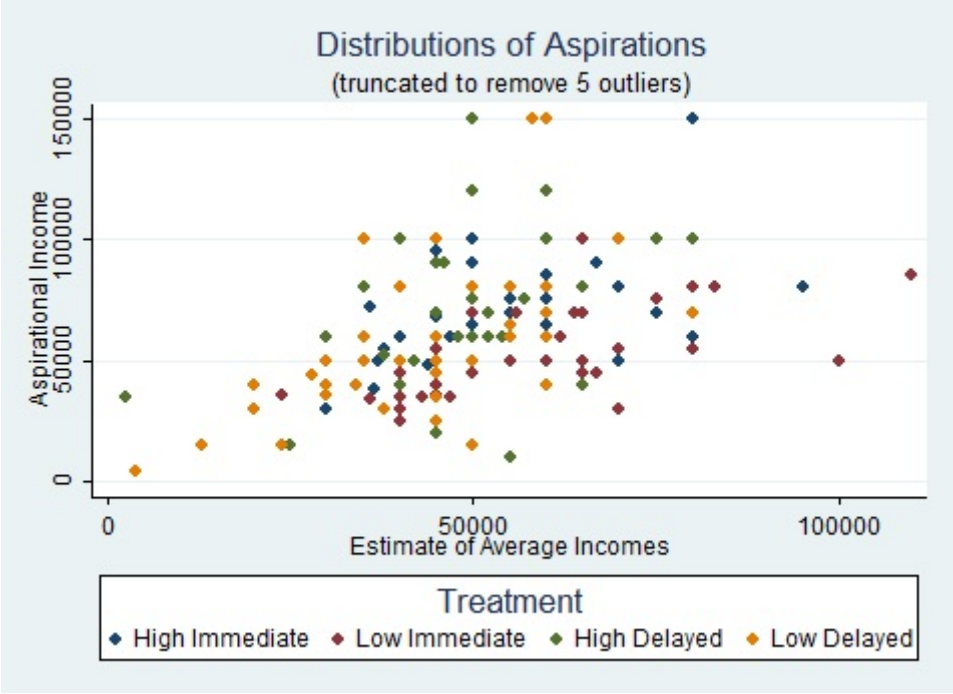

Table 12: Ordered Probit Estimate of Influences on Risk

	Regression Series					
Risk	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Low	-0.04	0.1	-0.06			
	(0.20)	(0.22)	(0.22)			
Delayed	-0.19	-0.32	-0.17			
	(0.21)	(0.23)	(0.23)			
InteractionLD	0.38	0.49	0.40			
	(0.31)	(0.33)	(0.32)			
High				-0.34	**-0.59****	**-0.46***
				(0.23)	(0.25)	(0.25)
Immediate				-0.19	-0.16	-0.23
				(0.22)	(0.24)	(0.23)
InteractionHI				0.38	0.49	0.40
				(0.31)	(0.33)	(0.32)
Aspiration Ratio		0.08	0.05		0.08	0.05
		(0.07)	(0.07)		(0.07)	(0.07)
Satisfaction		-0.04	-0.05		-0.04	-0.05
		(0.07)	(0.06)		(0.07)	(0.06)
Father Edu		-0.09	-0.08		-0.09	-0.08
		(0.08)	(0.08)		(0.08)	(0.08)
Mother Edu		**0.19****	**0.17***		**0.19****	**0.17***
		(0.09)	(0.09)		(0.09)	(0.09)
Study Accounting		-0.35	-0.30		-0.35	-0.30
		(0.29)	(0.29)		(0.29)	(0.29)
Study Finance		0.30	0.29		0.30	0.29
		(0.31)	(0.30)		(0.31)	(0.30)
Study other business		-0.40	-0.42		-0.40	-0.42
		(0.34)	(0.35)		(0.34)	(0.35)
Study other		-0.30	-0.31		-0.30	-0.31
		(0.25)	(0.25)		(0.25)	(0.25)
Year of Study		-0.03	-0.05		-0.03	-0.05
		(0.09)	(0.08)		(0.09)	(0.08)
Final Mood		0.01	-0.02		0.01	-0.02
		(0.11)	(0.10)		(0.11)	(0.10)
outlier		-0.20	-0.25		-0.20	-0.25
		(0.32)	(0.34)		(0.32)	(0.34)
Initial Mood		-0.10			-0.10	
		(0.12)			(0.12)	
Real Effort		**0.04***			**0.04***	
		(0.02)			(0.02)	
Male Dummy		**0.32***			**0.32***	
		(0.17)			(0.17)	
International Student		0.19			0.19	
		(0.24)			(0.24)	
Parent Lang Chinese		0.09			0.09	
		(0.24)			(0.24)	

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	Regression Series					
Risk	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Parent Lang Other		-0.15			-0.15	
		(0.28)			(0.28)	
Born East Asia		-0.19			-0.19	
		(0.30)			(0.30)	
Born Asia Sub cont		0.19			0.19	
		(0.31)			(0.31)	
Born Other		-0.09			-0.09	
		(0.39)			(0.39)	

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

Figure 8: Risk Histograms

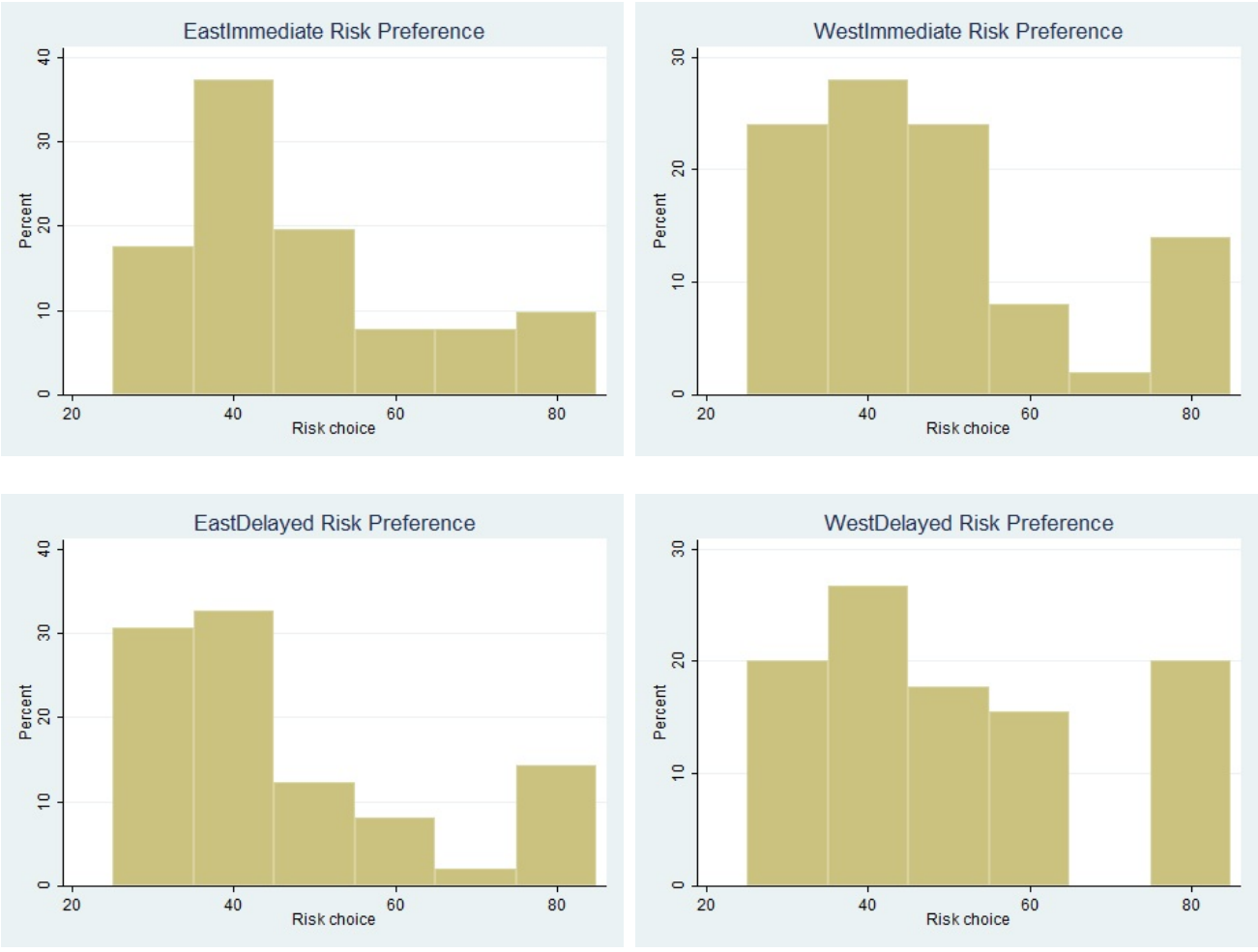

Table 13: Tobit Estimate of Influences on Real Effort

	Regression Series					
Real Effort	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Low	0.02	-0.63	-0.30			
	(1.40)	(1.41)	(1.39)			
Delayed	-0.67	0.50	0.43			
	(1.42)	(1.42)	(1.46)			
InteractionLD	1.49	-0.13	0.23			
	(2.07)	(2.08)	(2.09)			
High				-1.51	0.76	0.07
				(1.52)	(1.53)	(1.56)
Immediate				-0.82	-0.37	-0.66
				(1.50)	(1.48)	(1.43)
InteractionHI				1.49	-0.13	0.23
				(2.07)	(2.08)	(2.09)
Aspiration Ratio		-0.67	-0.56		-0.67	-0.56
		(0.43)	(0.47)		(0.43)	(0.47)
Satisfaction		0.59	0.55		0.59	0.55
		(0.38)	(0.47)		(0.38)	(0.47)
Father Edu		0.39	0.28		0.39	0.28
		(0.44)	(0.45)		(0.44)	(0.45)
Mother Edu		-0.81	-0.68		-0.81	-0.68
		(0.50)	(0.50)		(0.50)	(0.50)
Study Accounting		-1.08	-0.82		-1.08	-0.82
		(2.00)	(1.95)		(2.00)	(1.95)
Study Finance		-2.78	-2.00		-2.78	-2.00
		(1.88)	(1.89)		(1.88)	(1.89)
Study other business		1.30	0.88		1.30	0.88
		(2.39)	(2.41)		(2.39)	(2.41)
Study other		0.20	-0.21		0.20	-0.21
		(1.58)	(1.61)		(1.58)	(1.61)
Year of Study		0.12	0.21		0.12	0.21
		(0.46)	(0.46)		(0.46)	(0.46)
Final Mood		0.67	0.65		0.67	0.65
		(0.76)	(0.58)		(0.76)	(0.58)
outlier		1.42	0.55		1.42	0.55
		(3.88)	(4.15)		(3.88)	(4.15)
International Student		**-4.20*** **	**-3.03*** **		**-4.20*** **	**-3.03*** **
		(1.31)	(1.10)		(1.31)	(1.10)
Initial Mood		-0.01			-0.01	
		(0.78)			(0.78)	
Risk		**0.69** **			**0.69** **	
		(0.31)			(0.31)	
Male Dummy		-0.38			-0.38	
		(1.06)			(1.06)	
Parent Lang Chinese		0.91			0.91	
		(1.55)			(1.55)	

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	Regression Series					
Real Effort	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Parent Lang Other		-1.01			-1.01	
		(1.71)			(1.71)	
Born East Asia		1.28			1.28	
		(1.68)			(1.68)	
Born Asia Sub cont		1.89			1.89	
		(1.93)			(1.93)	
Born Other		1.55			1.55	
		(1.98)			(1.98)	
_cons	**30.07*** **	**24.01*** **	**25.67*** **	**30.91*** **	**23.8*** **	**26.04*** **
	(1.04)	(4.52)	(3.89)	(1.17)	(4.55)	(3.94)

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

Table 14: Ordered Probit Estimate of Influences on Satisfaction

	Regression Series	
Satisfaction	**(1)**	**(2)**
Aspiration Ratio	0.05	0.06
	(0.07)	(0.06)
Father Edu	0.06	0.07
	(0.07)	(0.07)
Mother Edu	0.04	0.04
	(0.08)	(0.08)
Study Accounting	0.02	-0.12
	(0.35)	(0.31)
Study Finance	0.28	0.32
	(0.33)	(0.31)
Study other business	-0.12	-0.03
	(0.41)	(0.33)
Study other	-0.12	0.03
	(0.41)	(0.27)
Year of Study	-0.01	-0.01
	(0.09)	(0.08)
Final Mood	**0.28** **	**0.72*** **
	(0.13)	(0.10)
outlier	-0.27	-0.20
	(0.42)	(0.45)
International Student	0.21	
	-0.26	
Initial Mood	**0.62*** **	

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Satisfaction	Regression Series (1)	(2)
	(0.13)	
Risk	-0.02	
	(0.05)	
Male Dummy	-0.14	
	(0.15)	
Parent Lang Chinese	-0.20	
	(0.21)	
Parent Lang Other	-0.17	
	(0.30)	
Born East Asia	-0.09	
	(0.29)	
Born Asia Sub cont	0.01	
	(0.38)	
Born Other	0.30	
	(0.36)	

Notes:
Ordered probit estimation implemented.
Treatment dummies not included as satisfaction measured prior to priming.
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

Table 15: Ordered Probit Estimate of Influences on Moodchange

Change in Mood	Regression Series (1)	(2)	(3)	(4)	(5)	(6)
Low	-0.05	-0.02	-0.05			
	(0.23)	(0.27)	(0.26)			
Delayed	-0.15	-0.05	-0.04			
	(0.21)	(0.26)	(0.24)			
InteractionLD	0.27	0.21	0.22			
	(0.32)	(0.36)	(0.35)			
High				-0.22	-0.19	-0.17
				(0.22)	(0.26)	(0.25)
Immediate				-0.12	-0.16	-0.17
				(0.24)	(0.25)	(0.25)
InteractionHI				0.27	0.21	0.22
				(0.32)	(0.36)	(0.35)
Aspiration Ratio		**-0.12****	**-0.13****		**-0.12****	**-0.13****
		(0.05)	(0.05)		(0.05)	(0.05)
Satisfaction		**0.15***	**0.14***		**0.15***	**0.14***
		(0.08)	(0.07)		(0.08)	(0.07)
Father Edu		0.05	0.05		0.05	0.05
		(0.08)	(0.08)		(0.08)	(0.08)
Mother Edu		-0.03	-0.04		-0.03	-0.04

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	Regression Series					
Change in Mood	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
		(0.10)	(0.09)		(0.10)	(0.09)
Study Accounting		0.15*	0.03		0.15*	0.03
		(0.33)	(0.31)		(0.33)	(0.31)
Study Finance		-0.19	-0.31		-0.19	-0.31
		(0.31)	(0.30)		(0.31)	(0.30)
Study other business		-0.17	-0.21		-0.17	-0.21
		(0.39)	(0.38)		(0.39)	(0.38)
Study other		-0.19	-0.18		-0.19	-0.18
		(0.27)	(0.24)		(0.27)	(0.24)
Year of Study		0.05	0.04		0.05	0.04
		(0.09)	(0.09)		(0.09)	(0.09)
outlier		**0.85****	**0.76****		**0.85****	**0.76****
		(0.37)	(0.33)		(0.37)	(0.33)
Initial Mood		**-0.68*****	**-0.66*****		**-0.68*****	**-0.66*****
		(0.11)	(0.11)		(0.11)	(0.11)
Risk		-0.01			-0.01	
		(0.05)			(0.05)	
Real Effort		0.03			0.03	
		(0.03)			(0.03)	
Male Dummy		0.13			0.13	
		(0.18)			(0.18)	
International Student		-0.30			-0.30	
		(0.25)			(0.25)	
Parent Lang Chinese		0.18	0.17		0.18	0.17
		(0.24)	(0.19)		(0.24)	(0.19)
Parent Lang Other		**0.60****	**0.55****		**0.60****	**0.55****
		(0.29)	(0.26)		(0.29)	(0.26)
Born East Asia		0.11			0.11	
		(0.31)			(0.31)	
Born Asia Sub cont		0.17			0.17	
		(0.34)			(0.34)	
Born Other		-0.02			-0.02	
		(0.34)			(0.34)	

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

E Robustness Test Results

Table 16: Summary With Alternate Inclusion Rule and Without Outliers

	Obs	Mean	Std. Dev.	Min	Max
HighImmediate					
Aspirational Income	46	67641.3	20555.25	30000	150000
Average Salary Estimate	46	52836.96	13190.93	30000	95000
Aspiration-Average Ratio	46	1.299654	.3125227	.7142857	2.111111
LowImmediate					
Aspirational Income	50	53220	15586.87	25000	100000
Average Salary Estimate	50	54700	16542.15	24000	110000
Aspiration-Average Ratio	50	1.000897	.2376628	.5	1.538462
HighDelayed					
Aspirational Income	40	68050	28180.69	10000	150000
Average Salary Estimate	40	49175	10805.71	25000	80000
Aspiration-Average Ratio	40	1.415729	.5976884	.1818182	3
LowDelayed					
Aspirational Income	45	62222.22	30454.8	15000	150000
Average Salary Estimate	45	44777.78	15162.59	10000	80000
Aspiration-Average Ratio	45	1.483561	.8639004	.3	6

Table 17: Excerpt of Estimate with Squared Control Terms

Aspirational to Average Income ratio			
Low	**-0.33*** **	High	0.49
	(0.12)		(0.33)
Delayed	0.37	Immediate	-0.21
	(0.23)		(0.19)
InteractionLD	-0.16	InteractionHI	-0.16
	(0.38)		(0.38)
Father Edu	**-0.06***	Father Edu	**-0.06***
	(0.37)		(0.37)
Father Edu^2	**0.11***	Father Edu^2	**0.11***
	(0.06)		(0.06)
Mother Edu	**0.71***	Mother Edu	**0.71***
	(0.41)		(0.41)
Mother Edu^2	**-0.14***	Mother Edu^2	**-0.14***
	(0.08)		(0.08)
Risk	-0.17	Risk	-0.17
	(0.11)		(0.11)
Risk^2	0.04	Risk^2	0.04
	(0.03)		(0.03)
Real Effort	**0.50***	Real Effort	**0.50***

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	Aspirational to Average Income ratio		
	(0.27)		(0.27)
Real Effort^2	**-0.01***	Real Effort^2	**-0.01***
	(0.01)		(0.01)
outlier	**5.46*****	outlier	**5.46*****
	(2.01)		(2.01)

Estimate includes all control variables. Only relevant measures reported.

Table 20: VIF of Aspirational Income Estimate

	VIF
Born E Asia	3.22
InteractionLD	3.18
Initial Mood	3.15
Study other	2.59
Final Mood	2.58
International	2.36
Delayed	2.28
PL Chinese	2.28
Born Asia SC	2.26
Accounting	2.23
Low	2.15
Satisfaction	2.04
Finance	1.91
Born Other	1.86
Other business	1.64
PL other	1.59
Mother Edu	1.59
Father Edu	1.45
Real Effort	1.18
Male	1.15
Yr of Study	1.15
outlier	1.14
Risk	1.13

Mean VIF 2.00
High Immediate is comparison treatment in this estimate

Table 21: VIF of Aspirational Income Estimate (continued)

	VIF
InteractionHI	3.58
Born E Asia	3.22
Initial Mood	3.15
Study other	2.59
Final Mood	2.58
High	2.53
International	2.36
Immediate	2.30
PL Chinese	2.28
Born Asia SC	2.26
Accounting	2.23
Satisfaction	2.04
Finance	1.91
Born Other	1.86
Other business	1.64
PL other	1.59
Mother Edu	1.59
Father Edu	1.45
Real Effort	1.18
Male	1.15
Yr of Study	1.15
outlier	1.14
Risk	1.13

Mean VIF 2.04
Low Delayed is comparison treatment in this estimate

Table 18: Pairwise Correlation of Independent Variables

	High	Immediate	InteractionHI	Satisfaction	Initial Mood	Risk	Real Effort	Male	Father Edu
High	1.0000								
Immediate	-0.0163	1.0000							
InteractionHI	0.5801*	0.5741*	1.0000						
Satisfaction	-0.0384	-0.1105	-0.0536	1.0000					
Initial Mood	-0.0137	-0.0821	-0.054	0.6827*	1.0000				
Risk	-0.0656	-0.0147	-0.0041	-0.0652	-0.0751	1.0000			
Real Effort	-0.0476	0.0097	0.0001	0.1624*	0.1679*	0.0986	1.0000		
Male	0.1097	-0.1879*	-0.0421	-0.0198	0.0191	0.0986	-0.0481	1.0000	
Father Edu	0.0104	0.0630	0.1036	0.1057	0.0883	-0.0299	-0.0185	0.0213	1.0000
Mother Edu	0.1398	-0.0017	0.1427*	0.0274	0.0156	0.0516	-0.0382	0.0166	0.4896*
International	0.0392	-0.0732	-0.0351	0.1145	0.0934	0.0118	-0.2079*	0.0386	0.0115
Yr of Study	-0.0641	0.0305	0.0501	-0.0259	-0.0473	0.0056	0.0087	-0.1128	-0.1005
Final Mood	-0.0423	-0.0845	-0.0499	0.5816*	0.7665*	-0.0607	0.1887*	0.0363	0.1049
outlier	0.1143	-0.1847*	-0.106	0.0064	0.0436	-0.0341	-0.0935	0.0119	0.0108
PL Chinese	-0.0430	-0.0934	-0.0935	0.0188	0.0637	0.0158	0.0079	-0.1079	-0.0651
PL other	0.0459	0.0700	0.1343	-0.0195	-0.0236	-0.0557	-0.0383	0.0570	0.0670
Born E Asia	-0.0618	0.0168	-0.0192	-0.0726	-0.0761	-0.0160	-0.0886	0.0273	-0.0012
Born Asia SC	0.1650*	-0.044	0.0225	0.0956	0.1177	0.0281	-0.0042	-0.0899	0.0249
Born Other	-0.0416	-0.0128	0.0460	0.1024	0.0483	-0.0191	-0.0109	-0.0087	0.0350
Accounting	-0.0962	-0.0722	-0.1244	-0.0195	-0.062	-0.0299	-0.1156	-0.0285	0.0259
Finance	0.0773	0.0438	0.0558	0.0776	0.0256	0.1613*	-0.0956	0.0274	-0.0474
Other business	0.0466	-0.0657	0.0643	-0.0167	0.0047	-0.0205	0.0033	-0.0340	0.0711
Study other	-0.0859	-0.0134	-0.0949	-0.0477	-0.003	-0.1061	0.1211	0.0014	-0.0608

Note: * significant at 5% confidence level

Table 19: Pairwise Correlation of Independent Variables (continued)

	Mother Edu	International	Yr of Study	Final Mood	outlier	PL Chinese	PL other	Born E Asia
Mother Edu	1.0000							
International	-0.082	1.0000						
Yr of Study	-0.0715	0.0679	1.0000					
Final Mood	0.0116	0.0533	-0.0156	1.0000				
outlier	-0.0584	0.0810	0.0371	0.0264	1.0000			
PL Chinese	-0.1877*	0.2910*	-0.0757	0.0503	0.0249	1.0000		
PL other	0.0575	0.0793	0.0285	0.0765	-0.076	-0.3709*	1.0000	
Born E Asia	-0.0788	0.4120*	0.0434	-0.0444	0.0566	0.4935*	-0.1331	1.0000
Born Asia SC	0.0210	0.2548*	0.0235	0.1159	-0.073	0.0868	0.1902*	-0.2996*
Born Other	-0.0334	0.1729*	0.1481*	0.0374	0.0303	-0.2775*	0.2972*	-0.2609*
Accounting	0.0413	0.3083*	-0.0776	0.0093	0.0886	0.3179*	-0.0242	0.2547*
Finance	-0.2055*	0.1959*	0.0235	-0.0086	0.0117	0.1458*	-0.0935	0.1300
Other business	0.0779	0.0550	0.0791	0.0027	0.0502	-0.0119	0.1705*	-0.0354
Study other	0.1224	-0.3429*	-0.0886	-0.0448	-0.0494	-0.3035*	-0.0329	-0.2604*

	Born Asia SC	Born Other	Accounting	Finance	Other business	Study other
Born Asia SC	1.0000					
Born Other	-0.1460*	1.0000				
Accounting	0.1091	-0.1071	1.0000			
Finance	0.0408	0.0389	-0.1746*	1.0000		
Other business	-0.0229	0.1196	-0.1318	-0.1265	1.0000	
Study other	-0.1233	0.0526	-0.4030*	-0.3870*	-0.2921*	1.0000

Table 22: Effect of Priming on Domestic Students Only

Aspirational to Average Income ratio	**Regression Series**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Low	**-0.36*** **	**-0.25***	**-0.26****			
	(0.07)	(0.13)	(0.12)			
Delayed	0.33	0.34	0.32			
	(0.30)	(0.23)	(0.23)			
InteractionLD	0.05	-0.12	-0.18			
	(0.31)	(0.31)	(0.34)			
High				0.30	0.37	0.44
				(0.30)	(0.26)	(0.28)
Immediate				**-0.38*** **	-0.22	-0.14
				(0.09)	(0.16)	(0.16)
InteractionHI				0.05	-0.12	-0.18
				(0.31)	(0.31)	(0.34)
Satisfaction		-0.05	-0.03		-0.05	-0.03
		(0.05)	(0.04)		(0.05)	(0.04)
Father Edu		0.03	0.02		0.03	0.02
		(0.06)	(0.05)		(0.06)	(0.05)
Mother Edu		0.04	0.04		0.04	0.04
		(0.06)	(0.06)		(0.06)	(0.06)
Study Accounting		0.14	0.10		0.14	0.10
		(0.24)	(0.24)		(0.24)	(0.24)
Study Finance		0.07	0.08		0.07	0.08
		(0.29)	(0.30)		(0.29)	(0.30)
Study other business		**0.58***	0.54		**0.58***	0.54
		(0.33)	(0.34)		(0.33)	(0.34)
Study other		-0.16	-0.05		-0.16	-0.05
		(0.15)	(0.14)		(0.15)	(0.14)
Year of Study		0.07	0.08		0.07	0.08
		(0.08)	(0.08)		(0.08)	(0.08)
Final Mood		-0.02	-0.02		-0.02	-0.02
		(0.07)	(0.05)		(0.07)	(0.05)
outlier		2.37	2.67		2.37	2.67
		(1.77)	(1.96)		(1.77)	(1.96)
Initial Mood		0.09			0.09	
		(0.11)			(0.11)	
Risk		-0.05			-0.05	
		(0.04)			(0.04)	
Real Effort		**-0.05***			**-0.05***	
		(0.02)			(0.02)	
Male Dummy		-0.16			-0.16	
		(0.11)			(0.11)	
Parent Lang Chinese		-0.22			-0.22	
		(0.20)			(0.20)	
Parent Lang Other		-0.05			-0.05	
		(0.19)			(0.19)	

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Aspirational to Average Income ratio	**Regression Series**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Born East Asia		0.18			0.18	
		(0.19)			(0.19)	
Born Asia Sub cont		0.08			0.08	
		(0.26)			(0.26)	
Born Other		0.57			0.57	
		(0.33)			(0.33)	
_cons	**1.34*** **	**2.42*** **	**1.22*** **	**1.37*** **	**2.39*** **	**1.10** **
	(0.06)	(0.68)	(0.46)	(0.08)	(0.66)	(0.45)

High Immediate is comparison treatment in columns 1 - 3
Low Delayed is comparison treatment in columns 4 - 6
Comparison Categories of Dummy Variables:
Parent Lang English, Born Aus/NZ, Study Economics/Econometrics

F Influences on Susceptibility Results

Table 23: Susceptibility of Priming with Risk

Aspirational to Average Income ratio			
Low	**-0.28***	High	0.56
	(0.15)		(0.48)
Delayed	0.15	Immediate	0.14
	(0.33)		(0.29)
Risk	0.02	Risk	0.11
	(0.04)		(0.08)
InteractionLD	-0.29	InteractionHI	-0.29
	(0.50)		(0.50)
Low*risk	-0.06	High*risk	-0.03
	(0.07)		(0.18)
Delayed*risk	0.06	Immed*risk	**-0.15***
	(0.16)		(0.09)
Low*Delay*risk	0.09	High*Imm*risk	0.09
	(0.17)		(0.17)

High Immediate and Female comparison treatment in left panel
Low Delayed and Female comparison treatment in right panel
Estimate includes all control variables. Only relevant measures reported.

Table 24: Susceptibility of Priming with Gender

Aspirational to Average Income ratio			
Low	**-0.43*****	High	0.72
	(0.14)		(0.55)
Delayed	0.40	Immediate	-0.12
	(0.38)		(0.31)
Male	**-0.21***	Male	0.06
	(0.12)		(0.30)
InteractionLD	-0.29	InteractionHI	-0.29
	(0.58)		(0.58)
Low*male	0.12	High*male	-0.43
	(0.18)		(0.61)
Delayed*male	-0.16	Immed*male	-0.15
	(0.53)		(0.30)
Low*Delay*male	0.31	High*Imm*male	0.31
	(0.63)		(0.63)

High Immediate and Female comparison treatment in left panel
Low Delayed and Female comparison treatment in right panel
Estimate includes all control variables. Only relevant measures reported.

Table 25: Susceptibility of Priming with Father Education

Aspirational to Average Income ratio			
Low	0.07	High	1.83
	(0.29)		(1.22)
Delayed	1.03	Immediate	0.88
	(0.92)		(0.79)
InteractionLD	-1.91	InteractionHI	-1.91
	(1.31)		(1.31)
Low*FatherEdu	**-0.13***	High*FatherEdu	-0.41
	(0.08)		(0.32)
Delayed*FatherEdu	-0.24	Immed*FatherE	-0.30
	(0.28)		(0.18)
Low*Delay*FEdu	0.54	High*Imm*FEdu	0.54
	(0.34)		(0.34)

High Immediate and Female comparison treatment in left panel
Low Delayed and Female comparison treatment in right panel
Estimate includes all control variables. Only relevant measures reported.

Table 26: Susceptibility of Priming with Mother Education

Aspirational to Average Income ratio			
Low	-0.21	High	**3.04****
	(0.27)		(1.21)
Delayed	**1.89****	Immediate	0.94
	(0.87)		(0.77)
InteractionLD	**-2.83****	InteractionHI	**-2.83****
	(1.20)		(1.20)
Low*MotherEdu	-0.05	High*MotherEdu	**-0.81****
	(0.08)		(0.32)
Delayed*MotherEdu	**-0.52***	Immed*MotherE	**-0.34***
	(0.27)		(0.20)
Low*Delay*MEdu	**0.86*****	High*Imm*MEdu	**0.86*****
	(0.33)		(0.33)

High Immediate and Female comparison treatment in left panel
Low Delayed and Female comparison treatment in right panel
Estimate includes all control variables. Only relevant measures reported.

Table 27: Susceptibility of Priming with Satisfaction

Aspirational to Average Income ratio			
Low	-0.69	High	1.63
	(0.47)		(1.04)
Delayed	1.06	Immediate	-0.11
	(0.95)		(0.44)
Satisfaction	0.05	Satisfaction	**0.10***
	(0.06)		(0.06)
InteractionLD	-0.95	InteractionHI	-0.95
	(1.03)		(1.03)
Low*Satisfaction	0.04	High*Satisfaction	-0.16
	(0.06)		(0.14)
Delayed*Satisfaction	-0.11	Immed*Satisfaction	-0.01
	(0.95)		(0.06)
Low*Delay*Sat	0.11	High*Imm*Sat	0.11
	(0.14)		(0.14)

High Immediate and Satisfaction=2 control treatment in left panel
Low Delayed and Satisfaction=2 control treatment in right panel
Estimate includes all control variables. Only relevant measures reported.

Table 28: Susceptibility of Priming with East - West Cost Difference

Aspirational to Average Income ratio			
Low	**-0.41***	High	0.71
	(0.25)		(1.10)
Delayed	-0.19	Immediate	0.50
	(0.60)		(0.73)
East West Diff	0.03	East West Diff	0.38
	(0.09)		(0.30)
InteractionLD	-0.31	InteractionHI	-0.31
	(1.14)		(1.14)
InteractionLowEW	-0.01	InteractionHighEW	-0.13
	(0.11)		(0.44)
InteractionDelayedEW	0.23	InteractionImmEW	-0.36
	(0.24)		(0.30)
InteractionLowDelEW	0.13	InteractionHighDelEW	0.13
	(0.44)		(0.44)

High Immediate and E - W Difference = 1 control treatment in left panel
Low Delayed and E - W Difference = 1 control treatment in right panel
Estimate includes all control variables. Only relevant measures reported.