

**AUSTRALIA NEW ZEALAND WORKSHOP IN EXPERIMENTAL ECONOMICS
UNIVERSITY OF AUCKLAND
NOVEMBER 26-27, 2018**

Abstracts

Tuesday, November 27

Parallel Sessions #4; 10:10 AM till 11:10 AM

Session 7: Information; Location: Case Room 2

Woods D.

Competition and Bayesian Persuasion: An Experimental Test of 'Competitive Information Disclosure in Search Markets

The emergence of new technologies has yielded substantial information gains, which has proven beneficial for consumers in terms of searching for the best price of a homogenous product. With the emergence of the internet, one could argue that in classic search models (e.g. Stahl, 1989), search costs in the price dimension has decreased substantially. However, consumers additionally search for information about products when they are unsure what product is best for them. The benefit of the internet to consumers on the information dimension is less clear. Tracking cookies and Big Data/Machine Learning methods can provide an accurate signal of a consumer's type, which enables firms to condition the level of information they provide. Firms would prefer to direct consumers to the product with the highest markup, but face a tradeoff as consumers want some information in order to make a purchase decision. In the monopoly case, this is a situation of Bayesian Persuasion (Kamenica & Gentzkow, 2011).

We consider a two product case for tractability in experimental implementation. The two products are a high markup and low markup product, and a consumer has some prior probability of preferring the high markup product. The monopolist would provide partial information to consumers that would not initially purchase the high markup product based on their initial prior. The information structure would be a binary signal that directs the consumer to their reservation prior for the high markup product with some probability, and otherwise direct them to the low markup product. The monopolist would provide no information to a consumer over their reservation prior, as providing information may reveal the consumer should actually purchase the low markup product. Board & Lu (2018) study a model of Bayesian Persuasion which introduces competition through a search market, in that consumers can pay a fixed cost to search for an additional signal from a randomly matched firm.

This paper experimentally tests some of the predictions of Board & Lu (2018), in particular the dimension of whether a firm can observe the consumer's prior with or without noise. The model predicts that the monopoly level of information is a unique equilibrium under certain conditions without noise, despite the introduction of competition. With noise, however, the level of information converges to full as the cost of searching decreases, suggesting an economic rationale for policy intervention. We conduct three treatments in which the model predicts increasing levels of information: without noise, with noise at a high cost, and with noise at a low cost.

Jiao Q., Ke, C. and Liu, Y.

Should the number of contestants be disclosed: Endogenous entry into contests

This paper investigates whether a contest organiser should disclose the actual number of contestants when entry is endogenous. In particular, we examine how the disclosure policy should vary with the cost function of effort. Our theoretical model predicts: (1) when entry is costly and endogenous, irrespective of whether the cost function of effort is concave, convex or linear, both equilibrium entry

rate and rent dissipation will not be affected by the disclosure policy; (2) Disclosure (concealment) policy is expected to elicit higher total effort when the cost function is concave (convex), while both policies elicit the same amount of total effort when cost function is linear. Our experimental results are largely consistent with the theoretical predictions except: (1) subjects in general over-enter into contests compared to the theoretical predictions; (2) rent dissipation is not invariant to disclosure policy. Our results also suggest that the ubiquitous over-dissipation observed in previous experimental studies diminishes substantially when over-entry is taken into consideration.

Rabanal, J., Rud, O., Sharifova, M and Horowitz, J.

Dynamic entry and exit decisions with noisy information: An experiment

We conduct a laboratory experiment to study individual market entry and exit decisions under varying levels of uncertainty. In our environment, when a player enters the market, she selects a risky strategy. The information about the risky payoff is available only when this option is exercised in the baseline treatment. To control for possible exploration effects, we include a counterfactual treatment with information on forgone payoffs. We find that subjects exit the market at significantly higher rates when counterfactual information is provided. This suggests that, under certain conditions, uncertainty can lead to shorter spells of inactivity and therefore shorter recessions.

Session 8: Communication; Location: Case Room 3

Feltovich, N.

What kind of communication is best? Cheap talk with two senders and one receiver

We investigate communication and decision making in a setting with two senders and one receiver. Each sender knows both senders' quality, while the receiver is completely uninformed. After a round of communication, the receiver chooses to match with one of the senders. The receiver prefers to match with the higher-quality sender, while each sender simply prefers to be matched. We vary the form of communication. In our Byte treatment, a sender sends a single number, indicating her quality. In our Rich treatment, a sender sends a single free-form text message. In our Chat treatment, the receiver can chat with each sender individually, in two simultaneous two-way conversations. Our main result is that in the Chat treatment, receivers perform substantially better than chance in picking the higher-quality sender, while in the Byte and Rich treatments, receivers fare no better than chance. This difference seems to be due to receivers being able to extract more truthful and more precise information in the Chat treatment compared to the other two treatments.

Feess, E., Nieken, P. and Data, S.

Lying and Reciprocity

Recent literature has shown that lying behavior in the laboratory can well be explained by a combination of (internal) lying costs and (external) reputation concerns. We extend the literature on behavioral preferences in lying experiments to strategic interactions. As reciprocal behavior plays an important role in many interactions, we study a theoretical model on reciprocity that assumes that a player's degree of altruism depends on her perception of the other player's altruism towards herself. Specifically, we consider a sequential two player contest where we vary the second mover's degree of information on the first mover's lying behavior. This allows us to derive predictions on the second mover's behavior which we test empirically in a large scale online experiment and in the laboratory. We find no evidence that reciprocity plays a role for lying behavior.

Page, L.

Too big to prevail: Coalition formations in the presence of a superpower.

In this study we investigate the effect of players' power on the formation of coalitions to divide a prize when the assumption that coalition formation involves binding agreements on how to split the prize is relaxed. In our experimental setup with one powerful ('strong') player and three standard ('weak') players, we vary the strong player's voting rights in one dimension and manipulate the timing of

agreement and communication on the prize division in the other dimension (i.e., whether binding agreement on prize division and furthermore whether non-binding communication on prize-split intentions at the stage of coalition formation is available). We predict and find: first, with binding agreement, the results of the game and the players' average payoff are in line with the relative power of the players as measured by their Shapley value. Second, when binding agreement on the division of the prize is not possible at the stage of coalition formation, the strong player's likelihood to be part of the winning coalition and his average payoff stays high if he is not "too strong" but it decreases significantly if his voting rights increase further. Third, communication at the coalition formation stage mitigates this negative effect of the absence of binding agreements for powerful players.

Parallel Sessions #5: 11:40 AM till 12:40 PM

Session 9: Nudges; Location: Case Room 2

Cheung, S. and Guo, M.

A weak commitment is worse than no commitment at all

Background: When agents are present-biased, they may have trouble completing unpleasant tasks in a timely manner. A commitment device may help; however, an agent will only voluntarily impose commitment upon herself if she is sophisticated (aware of her own self-control problem). Previous research generally finds rather limited demand for commitment. This could be due to a lack of sophistication, or because the form of commitment is too costly.

Objective: The aim of this study was to examine the effect of varying the costliness of commitment upon i) the rate at which commitment is voluntarily taken up, and ii) whether having the option to commit improves the completion of a series of mundane tasks.

Methods: 201 University of Sydney students participated in our online experiment. To successfully complete the study, and hence qualify for payment, participants had to complete four short, mildly unpleasant, effort tasks within four weeks. Participants in the baseline group were not given the choice to opt in for any intervention, while those in the reminder treatment were offered the choice to opt in for weekly reminder emails (a pure nudge). Participants in two deadline treatments had the choice to self-impose an exogenous set of weekly deadlines (a costly commitment); the two treatments varied the penalty for failing to meet these deadlines.

Results: Almost all participants who were offered reminders elected to receive them. We observed surprisingly high take-up of costly deadlines, which did not vary with the costliness of noncompliance. Relative to the baseline, only the offer of reminders was effective in increasing the rate of task completion. Participants who were offered deadlines with a high cost of noncompliance were no more likely to successfully complete than those in the baseline, while those who were offered deadlines with a low cost of noncompliance were less likely to do so.

Discussion: Our results are puzzling at several levels; however, the clear implication is that reminders – which are costless, and do not restrict participants' choice architecture – were the most effective intervention. On the other hand, the option of a "soft" deadline – a commitment device with a low cost of noncompliance – may backfire.

Smith, T., Hamill, D. and Venn, B.

Is Fast Food Addictive? Evidence from an experiment utilising continuous glucose Monitoring

The dynamics of blood sugar response to highly processed foods have strong parallels to the effects of addictive drugs. We hypothesize that if glycemic response is indeed an important determinant of habit formation--and hence product demand--then the largest producers of proprietary commercial foods will have formulated their products accordingly. We asked 12 non-diabetic adult subjects to wear a continuous glucose monitor for 7 days while consuming at least one globally branded fast food meal, yielding a pooled time series dataset with nearly 25,000 observations. We find strong evidence that addiction-like dynamic properties of the glycemic response (dose, rate of absorption, and withdrawal)

are greater for these foods as compared to fresh-prepared or off-brand processed foods. These differences are largely maintained when controlling for size of meal and nutrient content, suggesting that standard food labels may be insufficient to resolve what appears to be an important asymmetric information problem.

Snijders, V.

Applying Behavioural Insights to Public Policy

Almost everything government does involves behaviour in one way or another, whether is asking people to pay their taxes or fines, requiring defendants to comply with bail conditions or aiming to decrease our ecological footprint. This means we need to develop a deep understanding of human behaviour that acknowledges that people will not always respond “rationally” to our incentives, information and legislation.

Behavioural insights aims to do that by combining empirical evidence from social sciences, such as social psychology and behavioural economics, with human-centred design and robust evaluation techniques, such as randomised controlled trials. In practice, behavioural insights often involve making small tweaks to existing processes, which can have a disproportionate impact on process efficiency and user outcomes – this is sometimes called “nudging”. This approach has received increased attention over the last years with two Nobel prizes for Economics (for Daniel Kahneman and Richard Thaler), and with nearly 200 public agencies globally establishing behavioural insights functions. This increased interest leads to new challenges and opportunities, including in New Zealand.

In this presentation, I propose to discuss some of those challenges and opportunities while also linking it to examples of recent work in New Zealand.

Session 10: Risk and Uncertainty: Location: Case Room 3

Nguyen, V.

Loss Aversion and Investment Decision: An Empirical and Experimental Study of Traders in Stock Market

We collaborate with several brokerage houses in Dhaka stock market to obtain daily trading data of more than 350 retail stock market traders/investors and conduct field experiments among them. Our experiment results show that these small traders' behaviour is consistent with myopic loss aversion (MLA). We then examine if MLA could be associated with other behavioural channels such as ambiguity, risk and time preference of these investors. Finally, we combine the experiment results with a unique dataset on daily transactions and portfolio positions of these traders over two years to study the link between individual investment decision under controlled experiment setting and their natural domain. Our results suggest that experimental behaviour could predict but not fully capture important real-world trading analogues.

Gauriot, R., Page, L. and Wooders. J.

Nash at Wimbledon: Evidence from Half a Million Serves

Minimax and its generalization to mixed strategy Nash equilibrium is the cornerstone of our understanding of strategic situations that require decision makers to be unpredictable. Using a dataset of nearly half a million serves from over 3000 matches, we examine whether the behavior of professional tennis players is consistent with the Minimax Hypothesis. The large number of matches in our dataset requires the development of a novel statistical test, which we show is more powerful than the tests used in prior related studies. We find that win rates conform remarkably closely to the theory for men, but conform somewhat less neatly for women. We show that the behavior in the field of more highly ranked (i.e., better) players conforms more closely to theory.

Rojo Arjona D., Fragiadakis, D. and Kovaliukaite, A.

The Predictive Success of Theories of Strategic Thinking: A Non-parametric Evaluation

Theories of non-equilibrium strategic thinking (e.g. Level-k and Cognitive Hierarchy) intend to describe how individuals actually behave. But how much of their descriptive accuracy is driven by being more permissive theories? We modify Selten [1991] axiomatic measure of predictive success to ensure individual consistency. By applying restrictions over observables to the individual data (echoing the revealed preference literature), we test the necessary and sufficient conditions of these theories and quantify the economic losses for deviations from the theory. The non-parametric results are favourable for these theories and show that their predictive success is not mechanically due to their permissiveness.

Parallel Sessions #6; 1: 30 PM till 2:30 PM

Session 11: Incentives; Location: Case Room 2

Incekara, H., Xiao, E., Lee, G. and Siah, A.

Incentives to Persevere

To achieve success often requires persistent efforts. We conduct two randomized controlled trials to test the effectiveness of an all-or-nothing rewarding mechanism aimed at incentivizing a full completion of repeated tasks over a period of time. We find the full completion rate under the all-or-nothing mechanism does not differ from that under the regular piece-rate mechanism. However, when given the option between the all-or-nothing and the piece rate mechanisms in a self-select treatment, a significant number of participants chose the all-or-nothing mechanism in spite of the risk. The overall full completion rate is significantly higher in the self-select treatment than the piece rate condition. Our results highlight the importance of autonomy in incentivizing persistent efforts.

Dorner, Z. and Lancsar, E.

Intrinsic motivation, health and the crowding out effect of temporary extrinsic incentives

There is substantial international policy interest in incentivising healthy behaviours. When considering extrinsic incentives, policymakers should be mindful of the potential for crowding out of intrinsic motivation. Focusing on monetary incentives, there is conflicting evidence on whether it is better to go big (Gneezy and Rustichini, 2000b) or to go small (Pokorny, 2008). In this paper, we investigate the effect on intrinsic motivation of a range of extrinsic incentives, which vary by size and type, both during their application and after their removal. Additionally, we investigate whether intrinsic motivation predicts health outcomes. The laboratory experiment is comprised of a rich within and between subject design that allows us to estimate a difference in differences model of the treatment effects. Our subject pool was a heterogeneous adult population. Subjects were given four time limited rounds of a real effort task. Round 1 measured intrinsic motivation. Extrinsic incentives were applied in round 2, varying between subjects. Extrinsic incentives were removed in rounds 3 and 4 to measure crowding out and persistence of crowding out. On average, we find support for the “pay – but do not pay too much” rule (of Pokorny, 2008). However, we find that “pay enough or don’t pay at all” (of Gneezy and Rustichini, 2000b) better fits the results for individuals with low motivation. The high powered monetary incentive is most likely to crowd out intrinsic motivation after its removal. Intrinsic motivation is found to partially explain waist-to-height ratio, highlighting the relevance of our findings for health policy.

Grossman, P. Gangadharan L. Vecci, J.

Moving on up: The impact of income mobility on antisocial behaviour

A defining feature of democratic capitalist societies is disparity in the distribution of income and wealth. Recent reports indicate that income inequality in OECD countries has reached its highest level in decades. The top 10% of income earners now receive nine times that received by the bottom 10% of earners. This disparity in income is likely to grow.

What has puzzled many about this disparity in economic fortunes is the fact that in democratic nations, the majority with below median wealth have not used their numbers to enact tax and transfer policies that redistribute wealth to themselves. The “prospect of upward mobility (POUM)” hypothesis argues

that those who are poorer than average expect that either they or their children will succeed and become richer than average. The faith that an individual can climb the ladder of success is a central feature of the "American dream." Their envy, rather than being directed at taking what others have, compels them to increase their productivity, try to be more creative, and do their utmost to become one of the rich.

Faith in POUM may affect people's behaviour in other ways. In the same way the prospect of upward mobility suppresses support for redistributive policies, the prospect of upward mobility may also suppress antisocial behaviour. If upward mobility is possible (or believed possible), an aspirant may not feel the need to behave antisocially. If, however, there is little or no prospect of upward mobility (what some term an inequality of opportunity), people frustrated with their inability to improve their lot may resort to antisocial behaviour. This may be because limited economic opportunities are perceived as unjust and unfair. Despite these behavioural implications and the recent downward trend in mobility, whether the prospect of mobility influences antisocial behaviour is still an open question.

We test experimentally if the prospect of upward mobility influences antisocial behaviour. In particular, we focus on three research questions. First, does the prospect of income mobility discourage antisocial behaviour? Second, what is the impact of POUM on antisocial behaviour under different initial income class assignments (based on effort or luck)? Finally, does the nature of mobility, i.e., whether one moves up the income distribution through effort or luck, influence antisocial behaviour?

We design and conduct a survey as well as a unique laboratory experiment with treatments that vary along two dimensions: how initial income is assigned and how mobility may be achieved. Initially, participants are allocated to the high-income group or the low-income group. High (low) income participants have a larger (smaller) initial endowment and a higher (lower) rate of return to their investments. In half the treatments, luck determines the initial income allocation; in the other half, performance in a real effort task determines the allocation. Treatments also differ along a second dimension; whether mobility is possible and how it is attained. In two treatments, there is no possibility of mobility; in the other treatments, low-income subjects have an opportunity (via luck or effort) to change their income group.

Session 12: Norms and Preferences; Location; Case Room 3

te Velde, V., Louis, W.

How do descriptive norms influence behavior?

Abstract: Descriptive norms, which measure the prevalence of moral behavior ("cooperation") in a population, and injunctive norms, which measure beliefs about the moral imperative to cooperate, are known to be powerful motivators of cooperation. Understanding the channels of these effects is complicated by the fact that injunctive and descriptive norms are tightly related: descriptive norms provide information about others' injunctive beliefs, about the costs and benefits of cooperation, and about the likelihood of sanction. Injunctive beliefs, in turn, are affected by the costs and benefits of cooperation and affect sanctioning behavior. We study the informative influence of descriptive norms by exogenously changing the relationship between descriptive norms and the public benefit to cooperation (which then naturally affects injunctive norms). By comparing behavior in games in which higher descriptive norms translate into either higher, lower, or constant marginal social benefit from cooperation (while private costs remain constant) and in which descriptive expectations are exogenously determined to be either high or low, we find that descriptive norms powerfully influence behavior independently of their informational content. Injunctive norms, as well, track descriptive norms more than the actual costs and benefits of cooperation. This reveals a preference for moral conformity that is divorced from the material marginal costs and benefits to cooperation, either private or social.

Ip, E. and Vecci, J.

Egalitarian or Utilitarian: Non-Separability of Social Preferences

In this paper, we propose a new elicitation method that can determine the additive separability of preferences over any two goods, attributes or outcomes. To better understand social preferences, we

use this method to study the additive separability of preference over payoff for oneself and payoff for others.

The method involves eliciting a subject's preference over two lotteries, which involves payoffs for the subject (Subject A) and another subject (Subject B):

Lottery A:

50% chance: Subject A gets paid $\$X$ and Subject B gets paid $\$0$

50% chance: Subject A gets paid $\$0$ and Subject B gets paid $\$X$

Lottery B:

50% chance: Subject A gets paid $\$X$ and Subject B gets paid $\$X$

50% chance: Subject A gets paid $\$0$ and Subject B gets paid $\$0$

In both lotteries, both subjects have a 50% chance of getting paid and 50% chance of getting nothing, the main difference lies in the ex-post outcomes. If the subjects are not indifferent between the two lotteries, then theoretically they must have non-additively separable preferences.

Non-additively separable preferences can be classified as complementary or globally non-linear substitutable. In this context, positive complementarity (utility is weakly increasing in both payoff for self and payoff for others) implies egalitarian preference and Lottery B is strictly preferred. Negative complementarity (utility is weakly increasing in payoff for self but weakly decreasing in payoff for others) implies competitive preference and Lottery A should be strictly preferred. On the other hand, substitutability implies utilitarian preference. If the subject is risk averse over utilitarian outcomes, then Lottery A is strictly preferred. If the subject is risk seeking over utilitarian outcomes, then Lottery B is strictly preferred.

If subjects have additively separable preferences, then they are indifferent between Lottery A and Lottery B. Separable preference can come from subjects having risk neutral utilitarian preference, or subjects not having any other-regarding preference.

We implement a simplified and non-incentivised version of the design on MTurk as a pilot ($N=85$). We ask subjects whether they prefer Lottery A, Lottery B or are indifferent between the two. Each subject then justifies his/her choice in a textbox. This justification, alongside the choice over the lotteries are then used to classify subjects into different type of decision makers.

We find that 52% of the subjects exhibit egalitarian preference, 4% exhibit competitive preference, 24% of the subjects are risk averse utilitarian, 9% are risk neutral utilitarian and 12% do not have any other-regarding preference.

These results show that other-regarding preference is complex, diverse and mostly non-separable. This has implications on our understanding of distributive preferences, and more broadly, public choice theory and other areas of economics, which often assume a risk neutral utilitarian social planner.

We have also used the present method to analyse the additive separability of time preference as well as preference over consumption and leisure. In both cases, we find that preferences are not additively separable, contradicting one of the most common and important assumptions in consumption theory and labour economics respectively.

Casoria, F. Peeters, R. and Riedl, A.

Labor market gift-exchange and output market competition

In this paper we study gift-exchange in labor relations when firms have to compete on the output market. Workers and firms are engaged in a contractually incomplete relationship where firms offer wages and workers respond with effort. Effort determines the output quantity firms can bring to the market. We study three different output market competition scenarios: monopoly, duopoly, and quadropoly. We derive theoretical predictions for standard selfish preferences as well as for reciprocal preferences using a reduced form model. In line with the reciprocity model, our experimental results show that wages and effort respond to the intensity of output market competition and decrease with increasing competition.

Importantly, the wage-effort relationship is largely unaffected by competition, showing that reciprocal firm-worker relations are not destroyed when firms face competition. In consequence, more competition theoretically and empirically increases efficiency but leads to a redistribution of surplus from firms to workers and consumers.