T.C.
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AN EXPERIMENTAL STUDY ON HOMOPHILY AND IN-GROUP BIAS IN POVERTY AND PENSION GAMES

MASTER'S THESIS

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PREFACE

The starting point of this study that has stirred my curiosity was the fact that groups tend to be assembled and localized around own similarities like a moving organism we have studiec during lectures on social networks. Then, I started to study these topics by wondering how this situation would have implications for social and economic policies that require cooperation. In this experimental study, a game-theoretic environment is generated and subjects' cooperative behaviour under artificial identity is analysed.

Due to the insufficiency of an experimental economics laboratory in our university, this study was a hard task to design and to operate and due to the pandemic, we have undertaken this experiment online. We have set up our design with o-tree, which is experimental software for social sciences, and deployed to Internet via Heroku, which is a cloud application platform. In this way, our experiment design could have been operated also remotely. I would like to thank the people who have contributed scientifically and technically to my study.

I owe many thanks to all my instructors in GSU Economics MA program for teaching me during two years; all instructors in YU Economics where I am working as a research assistant for supporting me; Prof. Dr. Ahmet Özçam for contributing to my academic career with his supporting and criticizing views; my thesis advisor Assoc. Prof. Bilge Öztürk Göktuna for sharing her statistical technical skills about the study; Assist. Prof. Arhan Ertan for helping in undertaking the experiment during his class hours with his students and last but not least Assist. Prof. Umut Öneş for listening to all my personal and academic problems and advising me.

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Lastly, I owe my greatest thanks to my parents, Emrullah Yurdakurban and Türkan Yurdakurban, for financially supporting and emotionally motivating me, and for all they did and still doing and a list would be impossible to provide.

Emine Özge Yurdakurban

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ABBREVIATIONS

PAYG : Pay as you go pension scheme

CONT : Control treatment

CONT-N : Non-information control treatment

EXO : Exogenous treatment

ENDO : Endogenous treatment

ENDO-L : Endogenous Left treatment

ENDO-R : Endogenous Right treatment

WTP : Willingness to pay

LIST OF SYMBOLS

$\mathbf{T_i}$	: Transfer amount for each player i
$\mathbf{T_j}$	: Transfer amount for each player j
$\mathbf{U_i}$	: Utility function for each player i
$\mathbf{C_{i\,D}}$	: Consumption function of Decider for each player i
$\mathbf{C_{i\,R}}$	: Consumption function of Receiver for each player i
$\mathbf{P_i}$	: Player i
$\mathbf{P_j}$	: Player j
$\mathbf{ED_i}$	: Earnings of Decider for each player i. It equals to $C_{i\,D}$.
$\mathbf{ER_i}$	: Earnings of Receiver for each player i. It equals to $C_{i\,R}$.
$\mathbf{E_i}$	: Expected transfer amount for each player i

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RESUME

Dans cette étude, nous analysons deux types de comportement courant qui impliquent un certain degré de discrimination dans les interactions sociales dans le contexte de l'équilibre coopératif: homophilie et biais au sein du groupe. Dans les réseaux sociaux, les sous-groupes inhérents ou créés ultérieurement ont des effets psychologiques sur les individus et le groupement donne naissance à l'identité. La loyauté au groupe façonne directement le comportement social des individus. D'un autre côté, le comportement de réciprocité au sens de philanthropie conditionnelle est un type de comportement très courant dans les interactions sociales et il apparaît comme une norme sociale qui renforce la coopération. Dans notre étude, nous montrons l'effet du regroupement sur la coopération. Nous examinons les attitudes de réciprocité, de récompense et de punition dans les jeux de transfert où le transfert mutuel est efficace mais les transferts sont individuellement coûteux. Nous analysons la relation du biais de groupe et de l'homophilie avec l'équilibre coopératif à travers leurs effets sur la réciprocité dans les jeux de pauvreté et de retraite.

De nombreuses études scientifiques ont montré que la première impulsion de l'individu est de coopérer plutôt que de rivaliser. Les scientifiques qui étudient l'évolution soutiennent que l'altruisme a des racines profondes dans la nature humaine, car l'aide et la coopération encouragent la survie de notre espèce. Cependant, cela ne signifie pas que la première impulsion de l'individu est la coopération; la concurrence et la coopération fonctionnent ensemble et même se déclenchent et se soutiennent mutuellement. L'opinion selon laquelle il existe une coopération significative entre les individus confrontés à des dilemmes sociaux attire l'attention des économistes et des psychologues sur le plan théorique ou expérimental.

Il existe un véritable argument égoïste qui sous-tend le mécanisme de décision inhérent à l'individu: la coopération. La raison pour laquelle les individus égoïstes sont philanthropiques et enclins à la coopération est qu'ils agissent dans leur propre intérêt. Le comportement d'abnégation ne contredit pas l'égoïsme, au contraire il fonctionne avec l'égoïsme et peut même en résulter. S'il y a une certaine conviction que le sacrifice d'aujourd'hui a un effet positif sur les intérêts personnels futurs, la solidarité et la coopération peuvent être compatibles avec un égoïsme complet. Bien que cette attitude ne soit pas altruiste, l'individu peut croire qu'un comportement philanthropique peut encourager l'altruisme si nécessaire dans le futur. Si les gens croient être dans un environnement dynamique où demain se produira toujours, la coopération intertemporelle est possible, et la coopération intertemporelle peut se produire

sous la forme d'un comportement bienveillant. Nous pouvons voir que cela se produit également en réalité lorsque les jeunes font des transferts aux retraités par le biais de régimes de retraite par répartition. Dans le contexte des programmes d'assistance sociale représentés par le jeu de pauvreté dans une version statique sans information, la coopération peut exister sous la forme d'un pot-de-vin, mais le pot-de-vin peut être facilement distingué de l'aide. Il doit y avoir un engagement de réciprocité, et cet engagement peut apparaître comme une relation de confiance. S'il y a de la "confiance" en une reconnaissance de la philanthropie, alors il y a place pour une coopération mutuellement avantageuse.

C'est ici que l'on peut distinguer la réciprocité du sacrifice en tant que norme sociale. Le sacrifice est l'état de penser au bien-être de quelqu'un d'autre, même s'il est risqué ou coûteux pour lui. La réciprocité est l'entraide, qui comprend la récompense et la punition. Par réciprocité, les individus dont les intérêts personnels sont en conflit peuvent agir en coopération pour obtenir des résultats plus productifs. L'impact et la réaction sont au cœur des interactions sociales. Nous réagissons en réponse au comportement d'influence des autres. Cela permet au mécanisme de récompense et de punition impliqué dans la réciprocité de bien fonctionner.

Nous établissons des liens sociaux dans de nombreuses interactions de la vie quotidienne, de la coopération professionnelle aux relations étroites comme l'amitié et le mariage, nous révélons des préférences sur nos liens et prenons position dans ces interactions. Le terme identité peut être proposé comme un groupement artificiel externe en plus des dimensions de similitude telles que l'ethnicité, le sexe et les croyances. Dans tous les cas, la préférence pour une attitude positive envers la similitude ou l'interaction avec des éléments similaires implique un certain degré de discrimination en tant que phénomènes sociaux. Notre étude vise à expliquer le pouvoir du biais de groupe et de l'homophilie en ajoutant un groupement externe aux jeux de pauvreté et de retraite décrits par Hammond (1975) montrant que les comportements bienveillants peuvent résulter de l'égoïsme dans le contexte de l'investissement de retraite et d'aide sociale. Dans le cadre de l'assistance sociale, une communauté non homogène décide du montant de l'aide à apporter aux pauvres. Cela devient plus compliqué dans la décision de retraite parce que le changement générationnel ainsi que la diversité et l'homogénéité affectent les décisions de transfert des jeunes aux personnes âgées. Dans les économies d'aujourd'hui où les régimes de retraite sont en cours ou au bord de transformations structurelles, il est particulièrement important d'étudier comment les décisions de transfert sont prises et les facteurs qui influent sur ces décisions. La principale contribution de cette étude est l'analyse des préférences et des comportements lors de la création d'une appartenance artificielle. Nous cherchons des réponses à la manière dont la mutualité est influencée par l'identité, à la manière dont la

récompense et la punition se développent en présence du groupement, et enfin si l'appartenance favorise la collaboration. L'identité dont nous parlons est en fait liée à la taille et à la typologie des liens sociaux plutôt qu'aux croyances de l'individu sur ses préférences d'appartenance sociale.

Selon des preuves expérimentales courantes, les individus peuvent montrer un népotisme de groupe dans les interactions sociales. Ce phénomène, appelé préjugé au sein du groupe, est étroitement lié au concept d'identité et produit des résultats de bien-être en affectant les comportements et les modèles d'interaction dans des sociétés fragmentées. L'identité et l'appartenance sont des faits importants dans les questions de politique telles que les communautés parallèles, l'éducation désagrégée, le degré approprié d'homogénéité culturelle, la gestion des études ethniques et la conception d'institutions de jumelage équitables et efficaces. On observe que le biais au sein du groupe se produit en présence d'appartenance au groupe. En conséquence, les individus traitent les membres de leur groupe de manière relativement positive par rapport à ceux qui ne font pas partie du groupe. Les préjugés intragroupe apparaissent dans des appartenances telles que l'appartenance ethnique, les idéologies politiques, les croyances religieuses et les identités géographiques dans la vie quotidienne. Selon la théorie de l'identité sociale développée pour comprendre la base psychologique de la discrimination entre les groupes, la perception sociale d'une personne dépend des groupes sociaux auxquels elle appartient. Cela signifie que, contrairement à l'analyse économique standard de la prise de décision basée sur des incitations individuelles, l'identité de groupe joue un rôle important. L'homophilie est essentiellement un taux d'interaction plus élevé entre des personnes similaires que des personnes non similaires et a été placée dans un cadre scientifique dans les études de réseautage. L'homophilie apparaît dans de nombreux contextes tels que le racisme, les préférences sexistes et la discrimination dans l'établissement de relations d'amitié et d'affaires. Si ces phénomènes ont récemment suscité un grand intérêt dans les sciences sociales, l'analyse de l'équilibre coopératif fait encore défaut en présence d'homophilie et de biais au sein du groupe.

Nous analysons la relation entre la tendance au groupement et la tendance au groupement et l'équilibre coopératif dans le cadre des jeux de pauvreté et de retraite. Dans le jeu de la pauvreté, nous comparons les participants par paires et mutuellement et dans le jeu de la pension, par paires, séquentiellement et consécutivement. Il y a 4 procédures dans les traitements du jeu de pauvreté et de retraite dans notre expérience en ligne sur ordinateur, avec la participation de 80 étudiants ou diplômés universitaires et parmi eux, 32 ont participé au jeu de la pauvreté et 48 ont participé au jeu de la retraite. Dans les jeux de pauvreté et de retraite, nous examinons le comportement de transfert en comparant les

procédures avec le regroupement et la volonté d'interaction avec les similaires avec les procédures de contrôle.

Dans le jeu de la pauvreté, la réciprocité est détectée en comparant le jeu de transfert séquentiel avec information et sans information du choix de transfert du premier décideur par le second. Dans les autres traitements de l'expérience du jeu de la pauvreté, nous ajoutons un regroupement artificiel qui ne conduit pas à des gains individuels et nous analysons les décisions de transfert pour détecter comment la réciprocité est affectée. Dans le traitement avec appariement exogène et aléatoire, nous observons si le groupement artificiel que nous avons formé crée une appartenance et une identité parmi les sujets et si un biais de groupe se produit. Dans l'autre traitement avec appariement endogène par révélation de la volonté d'être apparié avec des similaires, nous mesurons le choix du participant d'auto-assortatif / homophilie en termes de susceptibilité du participant à un partenaire du même groupe. Ce traitement vise à montrer si l'appartenance à un groupe crée à la fois un biais et une préférence pour l'interaction avec des similares quand l'appartenance à un groupe et l'interaction ne génèrent pas de changement dans le revenu final et nous testons si l'équilibre coopératif est positivement affecté par le groupement et le désir d'interagir avec des similaires.

Dans l'expériment du jeu de retraite, la structure d'appariement passe de l'appariement bilatéral à l'appariement séquentiel. Le premier comprend un mappage binaire, tandis que le second utilise une configuration de mappage ordonnée. Alors que l'appariement bilatéral est une analogie du jeu de la pauvreté avec une population riche et pauvre changeant de rôle tout au long du jeu, l'appariement séquentiel représente des générations qui se chevauchent. Fondamentalement, dans ces deux structures d'appariement, il y a deux rôles: le réalisateur de transfert et le récepteur de transfert. Tous les traitements de l'expériment de retraite sont effectués sous information parfaite. Dans le traitement avec appariement aléatoire exogène, les joueurs sont placés à une position dans la séquence de joueurs. Dans le traitement avec appariement endogène, nous avons deux alternatives: les participants peuvent affecter le groupe de leur partenaire lorsqu'ils effectuent des transferts et lorsqu'ils reçoivent des transferts.

À la fin de l'expérience, nous avons vu que les individus n'agissent pas stratégiquement dans des structures d'appariement binaire et séquentiel et le regroupement fait une différence significative. D'après nos résultats généraux, une observation cohérente avec Heijden et al. (1988b) est que les participants ont montré un comportement incompatible avec une rationalité stricte, assurant ainsi un transfert socialement efficace. De plus, les gains de nos résultats sont plus

proches du transfert socialement efficace que les résultats de Heijden et al. (1988b). Les participants étaient plus coopératifs en général.

Dans le jeu de la pauvreté, nous avons mené un traitement sans priorité informationnelle par paires en montrant que les transferts sont plus élevés dans le traitement de contrôle de priorité informationnelle et en trouvant des preuves de réciprocité, car le premier intervenant est plus susceptible d'effectuer des transferts plus élevés avec l'espoir de recevoir des transferts plus élevés en retour. Il existe des preuves de réciprocité dans la structure d'appariement binaire tant que la condition d'information est fournie. De plus, nous avons constaté grâce à l'analyse de la corrélation entre les décisions de transfert des joueurs précédents et suivants que dans les structures d'appariement séquentielles qui simulent les interactions entre générations imbriquées des modèles de retraite, les agents sont moins réticents à rendre la pareille que dans la configuration binaire.

Nous avons trouvé des preuves de la présence d'homophilie (agents de sélection de groupe lorsque l'appariement endogène est autorisé), même si l'appariement préférentiel n'a pas d'avantage stratégique. Sur la base de l'intensité des demandes d'appariement, compte tenu des définitions d'homophilie forte, d'homophilie faible et de neutralité données à la section 4.3.1. nous avons montré qu'une proportion élevée de participants était faiblement homophile. De plus, nous avons montré que les agents fortement homophiles qui manifestent dans tous les cas une volonté de s'accorder sont plus disposés à faire des transferts. Bien que les gains productifs de la coopération aient été réalisés dans une large mesure dans notre étude, le regroupement a également contribué au résultat de la coopération.

L'existence d'un regroupement dans les deux structures d'appariement augmente les niveaux de transfert. Les résultats positifs que nous avons trouvés dans le regroupement en moyenne sont liés à la similitude mais quand on regarde l'impact de la réciprocité, on voit qu'il y a un mécanisme de récompense et de punition à l'œuvre lorsque les agents ont un impact sur le groupe de leur partenaire. Nous avons trouvé des transferts plus élevés dans le traitement d'appariement exogène, mais lorsque nous examinons la configuration endogène, nous voyons des transferts encore plus élevés dans les appariements intra-groupe par rapport à des transferts plus faibles dans les autres appariements. Comme il y a une punition très élevée des partenaires hors groupe dans l'appariement endogène, le résultat moyen est inférieur au traitement d'appariement exogène.

En plus de révéler l'importance d'identifier le regroupement, nous avons montré l'impact de la structure d'appariement sur les décisions de transfert et le résultat de la coopération. Nous avons vu que les participants étaient plus proches d'un résultat coopératif efficace dans l'appariement bilatéral que d'une structure d'appariement séquentielle. Les résultats se distinguent de manière significative de l'appariement bilatéral à séquentiel et nous avons montré que lorsque les appariements étaient séquentiels, les participants étaient moins réciproques et généreux. Cela a notamment des implications pour un certain nombre de dimensions politiques importantes, car dans la plupart des pays, des régimes de retraite redistributifs sont utilisés.

ABSTRACT

In this study, we analyse two common types of behaviour that involve some degree of discrimination in social interactions in the context of cooperative equilibrium: homophily and in-group bias. In social networks, subgroups that are inherent or created later have psychological effects on individuals and grouping gives birth to identity. Group loyalties directly shape social behaviour of individuals. On the other hand, reciprocity behaviour in the sense of conditional philanthropy is a very common type of behaviour in social interactions and it appears as a social norm that reinforces cooperation. In our study, we show the effect of grouping on cooperation. We examine reciprocity; reward and punishment attitudes in transfer games where mutual transfer making is effective but transfers are individually costly. We analyse the relation of group bias and homophily with cooperative equilibrium through their effects on reciprocity in poverty and pension games.

Many scientific studies have found that the first impulse of the individual is to cooperate rather than compete. Scientists who study evolution argue that altruism has deep roots in human nature, because help and cooperation encourages the survival of our species. However, this does not mean that the individual's first impulse is cooperation; competition and cooperation work together and even trigger and support each other. The view that there is a significant cooperation between individuals in social dilemmas attracts the attention of both economists and psychologists theoretically or experimentally.

There is a true selfish argument underlying the decision-making mechanism inherent in the individual: cooperation. The reason why selfish individuals are philanthropic and prone to cooperation is that they act in their own interests. Self-sacrificing behaviour does not contradict selfishness; on the contrary it works with selfishness and may even result from it. If there is a certain belief that today’s sacrifice has a positive effect on future personal interests, solidarity and cooperation can be compatible with complete selfishness. Although this attitude is not altruistic, the individual may believe that philanthropic behaviour can encourage altruism when needed in the future. If people believe that they are in a dynamic environment where tomorrow will always happen, intertemporal cooperation is possible, and intertemporal cooperation can occur in the form of benevolent behaviour. We can see that this also happens in real life when young people transfer to elderly through PAYG (pay as you go) pension schemes. In the context of social assistance programs represented by the poverty game in a static version with no information, cooperation may exist in the form of a bribe but the bribe can be easily

distinguished from aid. There should be a commitment for reciprocity, and this commitment may appear as trust. If there is “trust” that philanthropy will be responded to, then there is room for mutually beneficial cooperation.

This is where we can distinguish reciprocity from sacrifice as a social norm. Sacrifice is the state of thinking about the well being of someone else, even if it is risky or costly to him. Reciprocity is mutual aid, which includes rewarding and punishment. By mutuality, individuals whose personal interests are in conflict can act in cooperation to achieve more productive results. Impact and reaction lie at the heart of social interactions. We respond in response to the influence behaviour of others. This allows the rewarding and punishment mechanism involved in its reciprocity to work well.

We establish social ties in many interactions in daily life, from professional cooperation to close relationships such as friendship and marriage; we display preferences about our ties and take a stand in these interactions. The term identity can be proposed as an external artificial grouping in addition to similarity dimensions such as ethnicity, gender and belief. In any case, the preference for positive attitude towards similarity or interacting with the like involves some degree of discrimination as social phenomena. Our study aims to explain the power of group bias and homophily by adding an external grouping to poverty and pension games described by Hammond (1975) showing that benevolent behaviour may result from selfishness in the context of retirement investment and social assistance. Within the scope of social assistance, a non-homogeneous community decides how much aid should be provided to the poor. This becomes more complicated in the retirement decision because both generational change and diversity and homogeneity will affect decisions of transfers from young to old. In today's economies where pension programs are on going or on the verge of structural transformations, it is especially important to study how transfer decisions are made and the factors affecting these decisions. The main contribution of this study is the analysis of preferences and behaviours when an artificial belonging is created. We seek answers to how mutuality is influenced by identity, how reward and punishment develop in the presence of grouping, and finally whether belonging promotes collaboration. The identity we are talking about is actually related to the size and typology of the social ties rather than the beliefs of the individual about their social belonging preferences.

According to common experimental evidence, individuals can show group nepotism in social interactions. This phenomenon, which is called bias within the group, is closely related to the concept of identity and produces welfare results by affecting behaviour and interaction patterns in fragmented societies.

Identity and belonging are important facts in policy issues such as parallel communities, disaggregated education, appropriate degree of cultural homogeneity, the management of ethnic studies, and the design of fair and effective twinning institutions. It is observed that bias within the group occurs in the presence of group belonging. Accordingly, individuals treat their group members relatively positively than those outside the group. Intragroup bias appears in belongings such as ethnicity, political ideologies, religious beliefs and geographical identities in daily life. According to the social identity theory developed to understand the psychological basis of discrimination between groups, a person's social perception depends on the social groups to which he belongs. This means that, unlike standard economic analysis of decision-making based on individual incentives, group identity plays an important role. Homophily is basically a higher rate of interaction between similar people compared to non-similar people and has been put into a scientific framework in networking studies. Homophily appears in many contexts such as racism, sexist preferences and discrimination in establishing friendship and business relations. Although these phenomena have recently attracted great interest in social sciences, the analysis of cooperative equilibrium is still lacking in the presence of homophily and in-group bias.

We analyse the relationship between grouping and grouping tendency and cooperative equilibrium in the framework of poverty and pension games. In the poverty game, we match the participants in pairs and mutually and in the pension game, sequentially and consecutively. There are 4 procedures in both poverty and pension game treatments in our online experiment on the computer, with the participation of 80 university students or graduates and of those, 32 participated in the poverty game, and 48 participated in the pension game. In both poverty and pension games, we examine transfer behaviour by comparing procedures with grouping and willingness to match with control procedures.

In the poverty game, reciprocity is detected by comparing the sequential transfer making game with information and without information of the transfer choice of the first mover by the second mover. In the other treatments in the poverty game experiment, we add an artificial grouping that does not lead to individual gains and we analyse transfer decisions to detect how reciprocity is affected. In the treatment with exogenous and random matching, we observe whether the artificial grouping we have formed creates a belonging and identity among the subjects and whether in-group bias occurs. In the other treatment with endogenous matching through the revelation of the willingness to be matched with similars, we measure the participant's choice of self-assortative/homophily in terms of the susceptibility of the participant to a partner from the same group. This treatment is aimed at showing whether belonging creates both a bias and a preference for interaction with similars as belonging to and interacting with a

group do not generate any change in the final earnings and we test whether the cooperative equilibrium is positively affected by grouping and the desire to interact with similars.

In the pension game experiment, the matching structure changes from bilateral to sequential matching. The first includes a binary mapping, while the second uses an ordered mapping setup. While the bilateral matching is an analogy for the poverty game with a rich and poor population changing roles throughout the game, the sequential matching represents overlapping generations. Basically, in both of these matching structures, there are two roles: transfer maker and transfer receiver. All treatments of the pension experiment are carried out under full information. In the treatment with exogenous random matching, players are assigned to a position in the player sequence. In the treatment with endogenous matching, we have two alternatives: participants may affect the group of their partner when they are making transfers and when they are receiving transfers.

As a result of the experiment, we have seen that individuals do not act strategically in both binary and overlapping matching structures and grouping makes a significant difference. According to our general results, an observation consistent with Heijden et al. (1988b) is that participants have exhibited a behaviour that is incompatible with strict rationality, thus providing a socially efficient transfer. In addition, the gains in our results are closer to the socially efficient transfer than the results in Heijden et al. (1988b). Participants were more cooperative in general.

In the poverty game, we have conducted a treatment without information priority in pairings whereby showing that transfers are higher in the information priority control treatment and finding evidence of reciprocity, as the first mover is more likely to make higher transfers with the expectation of higher transfers in return. There is evidence for reciprocity in the binary matching structure as long as the information condition is provided. Moreover, we have found through the analysis of the correlation between previous and next player's transfer decisions that in sequential matching structures that simulate the interactions between generations in retirement systems, agents are less reluctant to reciprocate compared with binary setup.

We found evidence for the presence of homophily (group selection agents when endogenous matching is allowed), even though preferential matching does not have a strategic benefit. Based on the intensity of the matching requests, given the definitions of strong homophily, weak homophily and neutrality given

in Section 4.3.1. we have shown that a high proportion of participants was weakly homophilous. Moreover, we showed that strong homophilous agents who show a desire to match in all cases have more willingness to pay. Although productive gains from cooperation were realized to a great extent in our study, grouping further contributed to the cooperative outcome.

The existence of grouping in both matching structures increases the levels of transfer. The positive results that we have found in grouping on average are related to the similarity but when we look at the impact of the reciprocity, we see that there is a reward and punishment mechanism at work when agents have an impact on the group of their partner. We have found higher transfers in exogenous matching treatment, however when we look at the endogenous setup we see even higher transfers in in-group matches compared with out-group matches. As there is a very high punishment of the out-group partners in endogenous matching, the average result is lower than the exogenous matching treatment.

In addition to revealing the importance of identifying grouping, we have shown the impact of matching structure on transfer decisions and cooperative outcome. We have seen that participants were closer to cooperative efficient outcome in bilateral matching than sequential matching structure. Results differentiate significantly from bilateral to sequential matching and we have shown that when pairings were sequential, participants have been less reciprocal and generous. This in particular has implications for a number of important policy dimensions as in most countries redistributive pension schemes are used.

ÖZET

Bu çalışma, işbirlikçi denge bağlamında sosyal etkileşimlerde bir dereceye kadar ayrımcılık içeren iki yaygın davranış türü olan homofili (türcülük) ve grup içi yanlılığının incelemektedir. Sosyal ağlarda, doğasında var olan veya sonradan oluşturulan alt grupların bireyler üzerinde psikolojik etkileri vardır ve gruplaşma aidiyet ve kimliği doğurur. Grup aidiyetleri bireylerin sosyal davranışlarını doğrudan biçimlendirir. Diğer taraftan, koşullu hayırseverlik anlamındaki karşılıklılık davranışı, sosyal etkileşimlerde oldukça sık rastlanan bir davranış türüdür ve işbirliğini pekiştiren bir sosyal norm olarak karşımıza çıkar. Araştırmamızda, gruplaşmanın yarattığı davranış ve tercihlerin işbirliğine etkisini ve karşılıklı transferin etkili olduğu ancak transferlerin bireysel olarak maliyetli olduğu transfer oyunlarında karşılıklılık, ödüllendirme ve cezalandırma tutumlarını inceliyoruz. Grup yanlılığı ile homofilinin kooperatif dengeye etkisini, işbirlikçi dengenin incelenmesini mümkün kılan yoksulluk ve emeklilik oyunlarında, karşılıklılığın üzerindeki etkileri aracılığıyla çalışıyoruz.

Birçok bilimsel çalışma, bireyin ilk dürtüsünün rekabet etmek yerine işbirliği yapmak olduğunu bulmuştur. Evrimi inceleyen bilim adamları, diğergamlığın insan doğasında derin kökleri olduğunu savunurlar, çünkü yardım ve işbirliği türümüzün hayatta kalmasını teşvik eder. Ancak bu, bireyin ilk dürtüsünün işbirliği olduğu anlamına gelmez; rekabet ve işbirliği birlikte çalışır ve hatta birbirini tetikler ve destekler. Sosyal ikilemlerde bireyler arasında önemli bir işbirliği olduğu görüşü teorik ve deneysel olarak hem iktisatçıların hem de psikologların dikkatini çekmektedir.

Bireyin doğasında bulunan karar verme mekanizmasının altında gerçek bir bencil argüman yatar: işbirliği. Bencil bireylerin hayırsever ve işbirliğine yatkın olmalarının nedeni, kendi çıkarları için hareket etmeleridir. Özverili davranış, bencillikle çelişmez, aksine bencillikle çalışır ve hatta bundan kaynaklanabilir. Bugün fedakarlık yapmanın gelecekteki kişisel çıkarlar üzerinde olumlu bir etkiye sahip olduğuna dair kesin bir inanç varsa, dayanışma ve işbirliği, bencillikle uyumlu olabilir. Her ne kadar bu tutum diğergam olmasa da, birey hayırsever davranışların gelecekte ihtiyaç duyulduğunda diğergamlığı teşvik edebileceğine inanabilir. İnsanlar yarının her zaman gerçekleşeceği dinamik bir ortamda olduklarına inanırlarsa, zamanlararası işbirliği mümkündür ve zamanlararası işbirliği yardımsever davranış şeklinde gerçekleşebilir. Gençlerin dağıtım emeklilik planları aracılığıyla yaşlılara transfer yaptıklarında bunun gerçek hayatta da olduğunu görebiliriz. Yoksulluk oyununun bilgi içermeyen statik versiyonunun temsil ettiği sosyal yardım programları bağlamında, rüşvet şeklinde işbirliği olabilir, ancak rüşvet yardımdan kolayca ayırt edilebilir.

Karşılıklılık için bir taahhüt olmalıdır ve bu taahhüt güven olarak görülebilir. Hayırseverliğe yanıt verileceğine dair bir "güven" varsa, o zaman karşılıklı yarar sağlayan işbirliğine yer vardır.

Karşılıklılığı sosyal bir norm olarak fedakarlıktan ayırabileceğimiz yer burasıdır. Fedakarlık, kendisi için riskli veya maliyetli olsa bile, başkasının iyiliği hakkında düşünme halidir. Karşılıklılık, ödüllendirme ve cezayı içeren karşılıklı yardımlaşmadır. Karşılıklılıkla, kişisel çıkarları çatışan bireyler daha verimli sonuçlar elde etmek için işbirliği içinde hareket edebilir. Sosyal etkileşimlerin merkezinde etki ve tepki yatar. Başkalarının etki davranışına cevaben tepki veririz. Bu, karşılıklılıkta yer alan ödüllendirme ve cezalandırma mekanizmasının iyi çalışmasını sağlar.

Mesleki işbirliğinden arkadaşlık, evlilik gibi yakın ilişkilere kadar günlük yaşamdaki birçok etkileşimde sosyal bağlar kurar, bağlarımızla ilgili tercihler gösterir ve bu etkileşimlerde yer alırız. Kimlik terimi, etnisite, cinsiyet ve inanç gibi benzerlik boyutlarına ek olarak harici yapay bir gruplama olarak önerilebilir. Her halükarda, benzerliğe karşı olumlu tutum tercihi veya benzerleriyle etkileşimde bulunma, sosyal fenomen olarak bir dereceye kadar ayrımcılığı içerir. Çalışmamız, Hammond (1975) tarafından tanımlanan yoksulluk ve emeklilik oyunlarına, yardımsever davranışların emeklilik yatırımı ve sosyal yardım bağlamında bir dış gruplama ekleyerek grup önyargısının ve homofilinin gücünü açıklamayı amaçlamaktadır. Sosyal yardım kapsamında homojen olmayan bir topluluk, yoksullara ne kadar yardım sağlanacağına karar veriyor. Emeklilik kararında bu daha karmaşık hale gelir çünkü hem değişim hem de çeşitlilik ve homojenlik, gençlerden yaşlıya transfer kararlarını etkileyecektir. Emeklilik programlarının yapısal dönüşümlerin geçirdiği ve bu değişimlerin eşiğinde olduğu günümüz ekonomilerinde, transfer kararlarının nasıl alındığını ve bu kararları etkileyen faktörleri incelemek özellikle önemlidir. Bu çalışmanın temel katkısı, yapay bir aidiyet yaratıldığında tercihlerin ve davranışların analizidir. Karşılıklılığın kimlikten nasıl etkilendiğine, gruplaşmanın varlığında ödül ve cezanın nasıl geliştiğine ve son olarak aidiyetin işbirliğini teşvik edip etmediğine dair cevaplar arıyoruz. Bahsettiğimiz kimlik, aslında bireyin sosyal aidiyet tercihleri hakkındaki inançlarından çok, sosyal bağların boyutu ve tipolojisi ile ilgilidir.

Ortak deneysel kanıtlara göre, bireyler sosyal etkileşimlerde grup kayırmacılığı gösterebilirler. Grup içi önyargı olarak adlandırılan bu fenomen, kimlik kavramı ile yakından ilgilidir ve parçalı toplumlarda davranış ve etkileşim kalıplarını etkileyerek refah sonuçları üretir. Kimlik ve aidiyet, paralel topluluklar, ayrıştırılmış eğitim, uygun kültürel homojenlik derecesi, etnik çalışmaların yönetimi ve adil ve etkili eşleştirme kurumlarının tasarımı gibi

politika konularında önemli gerçeklerdir. Grup içerisindeki yanlılığın, gruba aidiyet varlığında meydana geldiği görülmektedir. Buna göre, bireyler grup üyelerine, grup dışındakilere göre nispeten olumlu davranırlar. Grup içi önyargı, günlük yaşamda etnik köken, siyasi ideolojiler, dini inançlar ve coğrafi kimlikler gibi aidiyetlerde görülür. Gruplar arası ayrımcılığın psikolojik temelini anlamak için geliştirilen sosyal kimlik teorisine göre, bir kişinin sosyal algısı ait olduğu sosyal gruplara bağlıdır. Bu, bireysel teşviklere dayalı karar vermenin standart ekonomik analizinden farklı olarak, grup kimliğinin önemli bir rol oynadığı anlamına gelir. Homofili, temel olarak benzer kişiler arasında benzer olmayan kişilere göre daha yüksek bir etkileşim oranıdır ve ağ çalışmalarında bilimsel bir çerçeveye konulmuştur. Irkçılık, cinsiyetçi tercihler ve ayrımcılık gibi pek çok bağlamda arkadaşlık ve iş ilişkileri kurmada homofili davranışı görülür. Bu fenomenler son zamanlarda sosyal bilimlerde büyük ilgi çekmesine rağmen, homofili ve grup içi önyargı varlığında kooperatif denge analizi, hala eksiktir.

Gruplaşma ve gruplaşma eğilimi ile kooperatif dengesi arasındaki ilişkiyi yoksulluk ve emeklilik oyunları çerçevesinde analiz ediyoruz. Yoksulluk oyununda katılımcıları ikili ve karşılıklı olarak ve emeklilik oyununda sırayla ve ardışık olarak eşleştiriyoruz. 80 üniversite öğrencisi ya da mezunun katılımıyla (32'si yoksulluk oyununa, 48'i de emeklilik oyunu) gerçekleştirilen çevrimiçi deneyimizde hem yoksulluk hem de emeklilik oyunu için 4 prosedür bulunmaktadır. Hem yoksulluk hem de emeklilik oyunlarında, transfer davranışını, gruplandırma ve eşleşme istekliliği bulunan prosedürleri kontrol prosedürleri ile karşılaştırarak inceliyoruz.

Yoksulluk oyununda karşılıklılık, sıralı transfer yapma oyununda ilk karar veren transfer seçimi ikinci karar veren tarafından bilindiği ve bilinmediği durumlar karşılaştırılarak tespit edilir. Yoksulluk oyunu deneyindeki diğer prosedürlerde, bireysel kazanımlara yol açmayan yapay bir gruplama ekliyoruz ve karşılıklılığın nasıl etkilendiğini tespit etmek için transfer kararlarını analiz ediyoruz. Dışsal ve rastgele eşleşme ile yapılan prosedürde oluşturduğumuz yapay gruplaşmanın denekler arasında bir aidiyet ve kimlik yaratıp yaratmadığını ve grup içi yanlılığın oluşup oluşmadığını gözlemliyoruz. Benzerlerle eşleştirilme isteğinin açığa çıkarılması yoluyla içsel eşleştirme ile yapılan diğer prosedürde, katılımcının aynı gruptan bir ortağa duyarlılığı açısından katılımcının kendi seçimine dayalı / homofilik seçimini ölçüyoruz. Bu prosedür, bir gruba ait olma ve grupla etkileşimde bulunma nihai kazançlarda herhangi bir değişiklik yaratmadığı için, aidiyetin hem bir önyargı hem de benzerlerle etkileşim tercihi yaratıp yaratmadığını göstermeyi amaçlamaktadır ve kooperatif dengenin gruplamadan ve benzerlerle etkileşim arzusundan olumlu etkilenip etkilenmediğini test etmekteyiz.

Emeklilik oyunu deneyinde, eşleme yapısı ikili eşlemeden sıralı eşlemeye değişir. Yoksulluk oyunu ikili eşleme içerirken emeklilik oyunu sıralı bir eşleme kurulumu kullanır. İkili eşleştirme, oyun boyunca rolleri değişen zengin ve yoksul nüfuslu yoksulluk oyunu için bir benzetme iken, sıralı eşleştirme, örtüşen nesilleri temsil eder. Temel olarak, bu eşleşen yapıların her ikisinde de iki rol vardır: transfer yapıcı ve transfer alıcısı. Emeklilik deneyinin tüm prosedürleri tam bilgi altında gerçekleştirilir. Dışsal rastgele eşleme ile yapılan prosedürde, oyuncular oyuncu dizisindeki bir pozisyona atanır. İçsel eşleştirme prosedüründe iki alternatifimiz var: katılımcılar transfer yaparken ve transfer alırken eşleştikleri partnerlerinin grubunu etkileyebilir.

Yapılan deney sonucunda, hem ikili hem de örtüşen eşleme yapılarında bireylerin stratejik davranmadığını ve gruplaşmanın önemli ölçüde fark yarattığını gördük. Genel sonuçlarımıza göre Heijden vd. (1988b) ile uyumlu bir gözlem, kişilerin katı rasyonalite ile uyumsuz bir davranış sergileyerek sosyal açıdan etkin transfer düzeyini büyük oranda sağlamalarıdır. Bunun yanında sonuçlarımız sosyal açıdan etkin transferden elde edilen kazançlara Heijden vd. (1988b) sonuçlarına göre daha yakındır. Deneyimizde katılımcılar genel olarak daha kooperatif davrandılar.

Yoksulluk oyununda, eşleştirmelerde bilgi önceliği olmayan bir prosedür uyguladık, bu sayede bilgi önceliğinin sağlandığı kontrol işleminde transferlerin daha yüksek gerçekleşeceğini gösterdik ve ilk hareket eden kişinin daha yüksek transfer dönüşü beklentisiyle daha yüksek transfer yapması daha muhtemelen olduğundan için karşılıklılık kanıtı bulduk. Bilgi koşulu sağlandığı sürece ikili eşleme yapısında karşılıklılık için kanıt vardır.

Dahası, önceki ve sonraki oyuncunun transfer kararları arasındaki korelasyonun analizi sayesinde, emeklilik sistemlerinde nesiller arasındaki etkileşimleri simüle eden sıralı eşleştirme yapılarında, temsilcilerin ikili kuruluma kıyasla karşılık verme konusunda daha az isteksiz olduğunu bulduk.

Tercihli eşleştirmenin stratejik bir yararı olmasa da, homofilinin (içsel eşleşmeye izin verildiğinde benzer katılımcıları seçme yoluyla) varlığına dair kanıt bulduk. Bölüm 4.3.1'de verilen güçlü homofilik, zayıf homofilik ve tarafsızlık tanımları verilen eşleştirme taleplerinin yoğunluğuna dayanmaktadır. Katılımcıların büyük bir kısmının zayıf bir şekilde homofilik olduğunu gösterdik. Dahası, her durumda eşleşme arzusu gösteren güçlü homofilik ajanların ödeme yapmaya daha istekli olduklarını gösterdik. Çalışmamızda işbirliğinden elde edilen etkinlik kazanımları büyük ölçüde gerçekleşmiş olsa da, gruplaşma, kooperatif sonuca ulaşmaya daha da katkıda bulunmuştur.

Her iki eşleşen yapıda da gruplamanın varlığı transfer düzeylerini artırır. Ortalama olarak gruplamada bulduğumuz olumlu sonuçlar benzerlikle ilgilidir, ancak karşılıklılığın etkisine baktığımızda, aracıların eşlerinin grubunu etkilediğinde bir ödül ve ceza mekanizması olduğunu görürüz. Eksojen eşleştirme tedavisinde daha yüksek transferler bulduk, ancak endojen kuruluma baktığımızda, grup içi maçlarda grup dışı maçlara kıyasla daha yüksek transferler görüyoruz. İçsel eşleştirmede grup dışı partnerler çok yüksek cezalandırıldığından, ortalama sonuç dışsal eşleştirme tedavisinden daha düşüktür.

Gruplandırmanın belirlenmesinin önemini ortaya koymanın yanı sıra, eşleştirme yapısının transfer kararları ve işbirlikçi sonuç üzerindeki etkisini de gösterdik. Katılımcıların iki taraflı eşleştirmede sıralı eşleştirme yapısından çok işbirlikçi verimli sonuca daha yakın olduklarını gördük. Sonuçlar, iki taraflı ve sıralı eşleşmeden önemli ölçüde farklıdır ve eşleştirmeler sıralı olduğunda, katılımcıların daha az karşılıklı ve cömert davrandıklarını gösterdik. Çoğu ülkede yeniden dağıtıcı emeklilik planlarının kullanıldığı gibi, bunun özellikle birkaç önemli politika boyutu için etkileri vardır.

CHAPTER 1 INTRODUCTION

For thousands of years, people worked in farms and total production in the economy was mostly made up of agricultural output. The production was bounded by the cultivable land and was not changing significantly through the years. In those circumstances, economic agents could get better off only by making others worse off and their strategic interaction resembled a zero-sum game. Societies invaded other societies' land constantly to get more from the pie creating extreme economic inequality. This was the state of the economy for a very long time until the Industrial Revolution changed everything. The development of machinery, better crops, better fertilizers led to skyrocketing agricultural output, which in turn altered the nature of societies. Everybody got the chance to have more without harming the rest of the population and there appeared a genuine selfish argument for making the world a better place as the more people were well off, the better anybody's life could be as the nature of innovation is fundamentally driven by supply and demand. The supply of innovation increases when more people have the freedom and education to contribute. The demand for ideas increases as people get richer and can pay for new solutions. The innovation and improvement of lives of the worst off population create a multiplying effect. There is more demand for new ideas while at the same time; it is easier to create new ideas to. The essence of the opinion we put forward starts here. The selfish and egoistic individual can be charitable in a setting where the charity is expected to be returned. Based on this starting point, it is not wrong to say that the reason for selfish individuals to be charitable and cooperative is to act in their own interests.

We also need to define the concept of **altruism** to have an understanding of any charitable behaviour. Altruism is the state of thinking about the well being of someone else, even if it is a risky or costly one for him/herself. Many studies have found that the first impulse of the individual is to cooperate rather than compete. Scientists studying evolution suggest that altruism has deep roots in human nature because help and cooperation encourage the survival of our species. Altruism referred to as sympathy or benevolence by Darwin (1871) is "an important part of social instincts". The evolution explains altruism through two hypotheses: reciprocal altruism and kin selection. The former is justified as evolution favours organisms that sacrifice for others to receive favours in return and the latter suggests that individuals are altruistic towards individuals sharing their genes hoping to pass those. These findings are supported by neuroscience studies on how the brain is activated by charity giving. Act altruistically activates the part of the brain where pleasure and rewarding signals such as eating chocolate or having sex are observed. In other words, the act of altruistic giving wires contentment in humans. Particularly, Moll et al. (2006) suggest that charitable behaviour creates the same impact as other stimuli like sex, drugs, food, and receiving money activating the mesolimbic reward system (parts of the brain) activated by stimuli like sex, drugs, food, and receiving money. However, this does not mean that people are more altruistic than selfish; instead, Knafo et al. (2008) shows that we have deeply rooted trends in moving in either direction.

It is not sufficient to explain all charitable behaviours that can be observed with altruism. Imagine for example a person who believes that current aid may increase his chance of future aid, and aid when he needs it. This person appears also as a benefactor but the motive is selfish. Consequently, cooperation can be compatible with complete egoism if there is certain belief for future recompense. Although this person is not altruistic, he may believe that his benevolent behaviour can encourage altruism when he needs it in the future. For example, parents may believe that their altruistic and compassionate example will guide

their children to grow altruistic and they will in return help their parents when they are elderly. If people believe they are in a dynamic setting where there will always be tomorrow, intertemporal cooperation is possible, and intertemporal cooperation appears in the form of charitable behaviour. We can see this happening in real life when young people make transfers to the old in unfunded pension schemes.

It is evident that charitable behaviour is only the output of a dynamic game. In a static game, the wealthy have no real danger of impoverishment. The rich can bribe the poor to win cooperation, but the bribe is easily distinguished from aid. We can only accept bribery as aid if the return of the aid is uncertain or rather remote (Hammond, 1975). The problem here is what Hobbes (Leviathan, XIV, 1651) argues: "If the egoist makes a charitable transfer now, what guarantee has he that charitable transfers take place later? After all, by the time the rich egoist is poor, there is a new game. Why should other egoists take account of past generosity?" In fact, it is possible to show that "**under certain conditions, the egoist can be charitable by acting rationally**". It is necessary to clarify what certain conditions are. If there is "trust" that charitable behaviour will be reciprocated, there is also a place for mutually beneficial cooperation.

The view that there is a significant degree of cooperation between individuals in social dilemmas attracts both economists and psychologists either theoretically or experimentally. Despite this interest, social norms are rarely the direct focus of scientific research[1]. It is precisely here that we can distinguish reciprocity from altruism. While altruism refers to an unconditional obligation in its pure or impure form; reciprocity refers to a conditional obligation. In this

[1] See Kerr (1995).

context reciprocity includes rewarding and punishment. *Quid pro quo*: Everything is mutual.

Based on the view that cooperation between individuals is provided through reciprocity, first of all, it is necessary to examine the norm of reciprocity closely. By means of reciprocity, individuals whose personal interests are in conflict can achieve more efficient outcomes by acting in cooperation. In this context, the reciprocity norm is called as “natural law” by Sugden (2005) and as “cements of society” by Elster (1989). In fact, we respond to the observed behaviour of others. As Gouldner (1960) states: “We owe certain things because of what others have done for us before”. In a broader perspective, Rabin (1993) also shows that if the behaviour of others is not yet known, the expected behaviour can be responded to.

The main contribution of this study is the analysis of what people do when the identity of the **other people** affects our behaviour towards them, and when we have a chance to express our preference about **other people** we interact with.

The identity we are talking about is actually about the size and typology of social ties rather than the individual's beliefs of preferences of social belonging. In daily life, we establish social ties in many interactions from professional cooperation to intimate relationships such as friendship and marriage and we take an attitude in these interactions. The term identity can also be proposed as an exogenous artificial grouping, in addition to the dimensions of similarity, such as ethnicity, gender and belief. Under any circumstance, the positive attitude towards similarity or the preference to interact with the similar includes some degree of discrimination as social phenomena.

On the other hand, according to common experimental evidence, individuals can show group favouritism in social interactions. This phenomenon, referred to as bias within the group, is closely related to the concept of identity by (Akerlof and Kranton, 2000) in the context of rationality and produces welfare results by affecting behaviours and interaction patterns in fragmented societies.

Identity and belonging are important phenomena for policy issues such as parallel communities, disaggregated education, appropriate degree of cultural homogeneity, the management of ethnic studies and the design of fair and effective matching institutions. Even though these phenomena have attracted a great deal of attention in recent years in social sciences, the analysis of cooperative equilibrium in the presence of homophily and in-group bias is still lacking.

The purpose of this research is to explain the power of two types of behaviour: **homophily and in-group bias** which involves some degree of discrimination in social interactions, in the context of poverty and pension games. In these transfer-making games where transfer-making is mutually effective, but transfers are individually costly, we analyse the relationship between grouping or grouping tendency and cooperative equilibrium and whether reciprocity and altruism exist in these settings. We look for the mentioned group effects by making an experiment of the gift/transfer game under two different matching scenarios. These two differentiated matching structures appear in the study as binary and overlapping structures: the first will be used for the poverty game and the second to study the pension game.

We have carried out the experiment for the poverty game with 32 participants and that for the pension game with 48 participants as well with 4 different procedures in both games. We bilaterally match participants in poverty games and sequentially in pension games. In both poverty and pension games, we analyse transfer behaviours by comparing various setups with **control treatment** where participants play the game after being matched with other participants randomly and anonymously. In the second setup that we have named **exogenous treatment** (EXO treatment), we divide participants into two groups, blue and red, which are independent of their earnings. In the presence of grouping that does not yield to individual earnings, we try to see group biases from individuals' transfer decisions. In the third setup that we have named **endogenous treatment** (ENDO treatment), we again divide participants into two groups and ask them how much they are willing out of a budget -outside their earnings in the game- to be matched with another participant of the same group. This preference represents the participant's assortative choice in terms of the tendency of the participant for a partner from the same group, that is, homophily.

In what follows, we review the essence of theoretical literature to define the hypothesis in our experimental research in Chapter 2. Chapter 3 examines the design of our experiment and the hypotheses we tested in detail, while in Chapter 4 we reveal the results of our study with the implications and extensions thereof.

CHAPTER 2 LITERATURE REVIEW

Recently, homophily has become the subject of many studies in economics and sociology literature. It can be observed for many aspects of similarity (e.g. ethnicity, gender, belief, etc.) and typology of social ties (e.g. intimate relationships, professional collaborations, and daily interactions such as friendship and marriage, etc.). People desire to live by sustaining their own culture with similars and in a segregated neighbourhood even if there is no cultural assimilation policy. On the other hand, the reason to interact may stem from a search for group favouritism instead of an emergence of group favouritism after interaction with similars. In particular, people living in a foreign country come together for many reasons with fellow-citizens and this exogenous condition creates citizenship awareness.

While homophily is the preference for interacting with one's own group, in-group bias is the act of treating the interacting partners more positively if they are from the same group (Akerlof and Kranton, 2000). For example, especially in developed countries, the so-called “diaspora philanthropy” which is extensively supported by the public and private sector is one of the highly known ethnic solidarity networks in the globalized and mobilized new world. On the other hand, there are many benevolent associations and charity funds that rely on ethnic, historic and religious fraternity in real life.

Furthermore, there are also professional collaborations that come together to serve only the attribution of grouping, in real life. For example, a lot of farmer union corporations which serve fertile agricultural production consist of alike producer partnership and actually their association maintains its own networks.

The variations of this example can be seen in a vast range of different sectors and similarity characteristics.

When we look at the social support programs and pension systems, we see that these are mandatory; dictating the transfer of a share of the income defined by the law to be collected by the working generations and distributed to the retired population or the cut of a certain share of the working income to be distributed to the unemployed. Experimental studies do not support most of the time the result that cooperation with regard to intergenerational pension transfers is self-enforcing however Hammond (1975) showed the theoretical possibility of such an outcome. In our research, we are looking for a social consensus on intergenerational transfers that can explain the prevailing unfunded schemes by phenomena such as homophily and in-group favouritism that can be reinforcing these overlapping generation transfers. We use the poverty and pension games setup in Hammond (1975), which explains that charitable behaviour may stem from egoism. We now will describe poverty and pension games in Hammond (1975) that we are using for our experiment and present the equilibria.

2.1. Poverty game

The game is played by two players. In the odd-numbered periods, the first (rich) player has a consumption good and the second other (poor) player has not. In the even-numbered periods, the roles are reversed. The game lasts T (even) periods. The consumption good cannot be stored and in the absence of transfers between players, there will be successive periods of overconsumption and no consumption. The game consists of the decision on the transfer by the player with the consumption good.

- **Finite horizon non-cooperative equilibrium**: Suppose T is finite. Suppose that there is an agreement for a positive level of transfer by the players. Then we analyse the decision of the second player at period T. There has been a positive level of transfer at period T-1 but as a selfish person, the second player has no incentive to make a positive transfer at the last period; there is no gain or no loss. The same argument applies when we work backwards. There is no incentive for a positive level of transfer; no player will make a transfer, this is the non-cooperative equilibrium of the model. It is a very inefficient equilibrium in Pareto sense.

- **Infinite horizon non-cooperative equilibrium**: Suppose T is infinite then there is no last period to work backwards our previous argument. Let x* be the consumed share of the good at a Pareto efficient path, then the transferred share of the good will be 1-x* at any time t. Any such Pareto efficient share can be sustained at a non-cooperative equilibrium because no player will have an incentive to deviate. Each player shares the consumption good as long as the other player does. But if a player breaks the agreement, this collapses completely.

2.2. Pension game

This game is based on Samuelson (1958) and Shell (1971) and played by an infinite number of players (generations). In period t, the player t has the consumption good and no other player has it. Each player lives for two periods. In the first period, the (young) player has the consumption good because he produces it. In the second period, this (now old) player has nothing because he cannot produce, he is retired. Player t decides on the transfer to player t-1 (previous working generation); player t+1 decides on the transfer to player t;

player t + 2 on the transfer to player t + 1 and so on… The setup is the same as the poverty game other than that.

- **Finite horizon non-cooperative equilibrium**: If the game ends at a finite T then the solution is the same as we have found in the poverty game. The old retired agents will die of hunger with selfish rationality thinking.

- **Infinite horizon non-cooperative equilibrium**: Suppose T is infinite then the action of player t will depend on his belief on the action of player t+1. There is an infinite sequence of expectations but to simplify, we can look at the decision of player t between giving player t-1 half of the consumption good and giving player t-1 nothing. Then player t will surely give player t-1 half of the consumption good if only if player t believes that when he makes this transfer, he will receive a transfer from player t+1. If player t+1 makes a transfer no matter what, then player t will have no incentive to make a transfer and similarly if player t+1 makes no transfer no matter what, then player t will have no incentive to make a transfer by the same logic. Then to figure out the strategy of player t we need to figure out the strategy of player t+1. Suppose that the game is stationary. Then the problem of player t is exactly the same as the problem of player t+1. In a stationary equilibrium, the players will play the same strategies. Let x* be the consumed share of the good at a stationary equilibrium. There are multiple equilibria in our setting. In this way, the fair egalitarian transfer which is sharing equally the consumption good produced is a non-cooperative one.

"All players are willing to cooperate by holding the appropriate beliefs." (Hammond, 1975)

This game theoretical study argued that charitable behaviour was caused by selfishness, not altruism. The possibility that a selfish person needs a charitable action in the future encourages the selfish to show charitable behaviour today. According to Hammond, if the selfish person does not violate an intertemporal agreement, the mutually efficient outcome is possible by means of reciprocity.

Although the use of reciprocity in the literature goes back to Hobbes, the definition of Gouldner (1960); "owing to others for what they did for us" is considered as the first sociological definition of reciprocity and charitable behaviour. Rabin (1993) adds the effect of recognition and expectations suggesting that if the behaviour of others is unknown, it will be treated with the expectation of reciprocity. In our research, we are concerned with the version of reciprocity that relates to the responses to observed behaviour. According to Budescu, Suleiman and Rapoport (1995), reciprocity is possible when the conditions of "priority of time" and "priority of information" are fulfilled. These two conditions are complementary to each other. The priority of time, which relates to the sequential structure of the actions, will not have a meaning without the priority of information. If the player who acts second does not know how the first player behaves, he can act but cannot react.

We enable reciprocity by fulfilling these two conditions in our design and try to see how group biases and preferences for similarity affect cooperative behaviour by adding an exogenous grouping to the poverty and pension game (Hammond, 1975). Heijden et al. (1998b), previously, compared these games experimentally with two information treatments that differed amongst themselves, and to what extent they encourage cooperative transfer making and discussed reciprocity in response to the observed behaviour of others. Hammond (1975) defines players as rich and poor in the poverty game, and in the pension

game, the players are first young and then become old. In other words, while the poverty game considers a theoretical environment for the support of unemployment or disability insurance programs, the pension game deals with the support of pension plans called pay-as-you-go schemes. Heijden et al. (1998b) analyses the power of reciprocity in these transfer-making settings using experimental procedures.

When we consider how group biases and preferences for similarity affect cooperative behaviour, we have been inspired by Currarini and Mengel (2016) which analysed the systematic relationships of homophily and in-group bias in social interactions in variations of the games studied by Charness and Rabin (2002). This study differs by the experimental game setup. Although, the first poverty game is a type of dictator game; the second pension game differs with the overlapping generation design. The main focus in our study is the significance of homophily and in-group bias in social transfers. We will now look into these concepts in a more detailed manner.

2.3. Homophily

Homophily is basically a higher rate of interaction with similar people compared to non-similar people. In this context, Plato wrote

> *"The friendship which occurs between opposites is terrible and fierce and seldom reciprocal amongst men, while that based on similarity is gentle and reciprocal throughout life." (Plato, 1926).*

Aristotle had the same idea when he wrote,

> *"We shall establish relations of friendship with people with manners like our own, and those with the same interests, and those with whom we are compelled to be in partnership as to matters of the highest importance; for this is the most permanent kind of friendship." (Aristotle, 1937).*

Although the etymological origin of homophily dates back to Aristotle and Plato, systematic analysis was not possible until computational techniques were developed. The concept of homophily has been put into a scientific framework in network studies.

First, Bott (1928) and Wellman (1926) explained the term homophily as the behaviour of students interacting more with other students with similar demographic characteristics in their experiments at American colleges. The role of homophily in modern sociological research was first demonstrated by the friendship process study of Lazarsfeld and Merton (1954). This study explained that homophily could be basically of two types based on its anthropological origin. The first is based on status similarity where there is interaction with others with similar characteristics such as race, gender, age, religion, education or occupation, while the second is state of value similarity based on values, attitudes and beliefs[2].

[2] For a comprehensive study in sociological literature in similar vein, on homophily causing some degree of discrimination in group formation, see McPherson, Smith-Lovin and Cook (2001).

According to Jackson and Lopez-Pintado (2013) and Jackson and Golub (2012), homophily can limit the distribution of information and convert the distance in individual characteristics to social distance due to the clustering of the social network according to its types and features. This affects the functioning of labour markets (Calvo-Armengol and Jackson, 2004) and also affects marriage markets (Skopek, Schulz and Blossfeld, 2011). It creates a bias about who will choose which job, whose friend (Currarini, Jackson and Pin, 2009; Currarini, Jackson and Pin, 2010), or who will adopt innovation and care in health (Centola, 2011)[3].

Myerson, Pollock and Swinkels (1991) considers the distinction of biological and economic games in their simple equilibrium analysis method to predict the viscosity effect in biological games and states that the choice of strategy in economic games is at the level of individual cognitive selection, and in biological games, the choice of strategy is at the genetic level by the relative group and genotype. Accordingly, members of the relative group can meet and play with each other (kin selection).

Mengel (2008) uses a repeated interaction of agents playing one-shot prisoners' dilemma to present the cultural transfer model of social norms. Accordingly, they observe that either some agents adhere to a social cooperation norm or they do not. The limited integration of these two types can create a bias in the matching structure as each type interacts with increasing probability among themselves. This study revealed that, unlike many standard evolutionary approaches, cooperation often survives in the long term. In particular, it has been found that intermediate strength norms could survive in a variety of

[3] For the impact of homophily on the spread of social norms in a society and the level of cooperation see Hamilton (1964); Myerson, Pollock and Swinkels (1991) and Mengel (2008).

environments, while high degrees of separation were needed to maintain strict norms for cooperation. By describing norm strength, the study explained two scenarios in which pro-social norms survive: *i*. a rigid society where separation leads to equilibrium with norms of cooperation, and *ii*. an integrated society in which equilibrium displays heterogeneity of types and intermediate strength norms. Also, integration and collaboration are not uniformly linked. The main question was how the institutions of a society, and especially the degree of integration, affect the internalization of the norm in the long run. It has been found that strict norms for cooperation needed either a separation or strong institutional pressures in order to survive. On the contrary, intermediate norms could survive even in fully integrated societies and with extremely low institutional pressures.

In the literature, the implications of homophily in different social interactions have been studied: the fragmentation of the socity in the provision of public goods (Alesina, Baqir and Easterly, 1999), the quality of infrastructure and the level of literacy (Alesina et al., 2003) and economic growth (Easterly and Levine, 1997). Recent research has made a distinction between two main sources of homophily: preference-based homophily and opportunity-based homophily (Moody, 2001; Currarini, Jackson and Pin, 2009; Currarini, Jackson and Pin, 2010; Currarini and Jesse Matheson, 2016). ***Preference-based homophily*** can lead to biased matches through selective classification by referring to the mental attitudes individuals have about others. ***Opportunity-based homophily*** refers to the external prejudices that individuals are faced with in the process of creating social ties. Although it is difficult to distinguish these two types in experiments, a laboratory experiment allows keeping opportunities stable and isolating preferences for in-group matching. **In our study, the term homophily will express the individuals' willingness to be matched with others from their group to interact revealed by their willingness to pay for in-group matching as in Currarini and Mengel (2016).** By variations in the

treatments, we can detect how homophily is affected by culturally learned psychological attitudes (such as “stick to your own style”) or more strategic thoughts about the expected outcomes of in-group and out-group pairing.

2.4. In-group bias

In-group bias is not a bias in matching preferences unlike homophily; it refers to the behavioural difference in in-group or out-group matches. In-group bias means “the systematic tendency to evaluate a person's own group (in-group) members more favourably than another group' (outside group) members” (Hewstone, Rubin and Willis, 2002). In-group bias appears in many contexts such as ethnicity, political ideologies, religious beliefs and geographical identities in daily life. Sumner (1906) first used the concept of ethnocentrism with concepts of “in-group” and “out-group” and describes it as “to be rigid in his acceptance of the culturally alike and in his rejection of the unlike” (Adorno et al. 1950).

In the presence of group bias defined by Tajfel and Turner (1979) as the presence of group belonging, individuals are more positive towards their group members than those outside the group. Tajfel and Turner (1979) developed the theory of social identity to understand the psychological basis of discrimination between groups and stated that a person's perception depends on the social groups to which they belong. This means that, unlike standard economic analysis of decision-making based on individual incentives, group identity plays an important role. In addition, experimental studies have shown that individuals tend to group and identify with groups in response to very weak motivations, although there is a tendency to associate phenomenon such as gender, social

class, race, and belief with strong discrimination resulting from prejudices. In this context, a series of articles in the field of psychology have introduced the "minimal paradigm" design that supports intra-groupism[4]. The assignment to groups was done without reference to the previous interactions of the agents, the correlation of their preferences and the previously created identities. This was confirmed in a recent study in experimental economics by Chen and Li (2009), who found in-group bias when agents were specifically divided into two groups labelled with colours (maize and blue). Currarini and Mengel (2016) analysed the identity, homophily and in-group bias, endogenous and exogenous matching by using the grouping criteria in the "near-minimal paradigm" design which is a version of the "minimal paradigm" of Tajfel and Turner (1979). They have used game setups in Charness and Rabin (2002) to see the effects of grouping over altruism and reciprocity.

Everett, Faber and Crockett (2015) addressed mechanisms driving in-group favouritism and explored in-group favouritism in economic games, revealing how this kind of behaviour was influenced by preferences and beliefs. They have found that preference-based accounts of in-group favouritism are based on the idea that group membership changes agents' desires and inclinations towards the outcomes of members within and outside the group, thereby identity influences individual utility function (Akerlof and Kranton, 2000). They discussed how group membership might be associated with preferential account types such as positive and negative reciprocity and found that in-group favouritism generally matches well with social identity approach. Reciprocity from social preference types is related to the fair or unfair behaviour of other agents in a game where individuals' positive utility becomes greater as behaviour is seen to be more reciprocal. The positive reciprocity may be moderated by group membership. For example, Chen and Li (2009) found that

[4] See the pioneering work of Tajfel and Turner (1979) on this subject.

group members were 19% more likely to respond pro-socially to an in-group member for good behaviour than the outside group that is, in-group members are rewarded more for pro-social behaviour than out-group members. Positive reciprocity was more pronounced in in-group interactions but group membership may affect negative reciprocity as well through altruistic punishment. The altruistic punishment creates a social preference based on the tendency of people to act unselfishly even if they have no obvious benefit to them, and people often punish more those who violate the norms of cooperation against third parties (Fehr and Fischbacher, 2004a, b; Jordan et al., 2014a). In terms of both altruistic punishment and negative reciprocity, it seems that in-group members can be punished more for selfish behaviour than out-group members. Shinada et al. (2004) found using a transfer game setup that cooperative participants punish non-cooperative in-group members more severely than non-cooperative out-group members. Most recently, Mendoza et al. (2014) allowed first participants to play as recipients in the ultimatum game and found that participants were punished more strictly by in-group (race) members than out-group members. Then, they have repeated the experiment and found higher costly punishment against in-group (college) members than out-group members and these punishments grew among strong college group identifiers. Finally, they have concluded that this group-moderated costly punishment was driven by violated expectations of fairness from in-group members.

On the other hand, Everett, Faber and Crockett (2015) also clarified belief-based accounts of in-group favouritism through three different perspectives. First, one influential belief-based account suggests that in-group favouritism can be explained as a result of ***perceived outcome interdependence and expectations of reciprocity***. Rabbie et al. (1989) argued that in-group favouritism in point allocation was the result of beliefs about outcome interdependence rather than social preferences: “by giving more to their in-group members than to the out-group members -in the expectation that the other in-

group member will reciprocate this implicit cooperative interaction- they will increase their chances of maximizing their own outcomes." Second, ***reputational concerns*** can lead to in-group favouritism if group members find strategic to signal a positive reputation towards other in-group members. Third, people act more pro-socially towards group members because this think that it is a socially approved behaviour and behaving otherwise will entail costs for violating social norms and they look for ***social approval*** (Fehr and Fischbacher, 2004a).

Although the social preference- and belief-based mechanisms behind in-group bias are quite widely studied in the literature, the exact relationship between in-group bias and reciprocal behaviour in artificial grouping experiments is unclear and this relationship should also be elucidated in the presence of homophily. The most crucial contribution of our work to literature is the analysis of this relationship in different matching structures. In our study, based on the poverty and pension games of Hammond (1975) and experimental procedure of Heijden et al. (1998b), we study transfer making in the gift exchange setup of poverty and pension games in a laboratory environment. There are other studies on whether a social consensus emerges.

Previously, Offerman, Potters and Verbon (2001) proposed a multi-generation pension game with infinite horizon where mutual cooperation appears as a potential sequential equilibrium supported by a grim trigger strategy. They analyse the following setup: player P1 makes no choice but gets a payoff of 50 (30) if P2 chooses A (B). The payoff of player P_t depends on their choice of A or B at time t and the choice of A or B by the following player, P_{t+1}. The cooperative equilibrium is (A,A). There were two treatments: one where subjects made choices and recorded their strategies for all possible histories and another where in addition to the previous the experimenter make recommendations on what strategies subjects should choose following the grim trigger strategy.

Results show a low rate of cooperation (choice of A) in both treatments: 13.8% in the first and 29.3% in the second. Although recommendations resulted in 46.1% use of grim trigger strategy, this is not enough to create a social norm.

Cabrales, Nagel and Rodriguez-Mora (2012) studied the emergence of an efficient social contract redistributing from rich to poor in the laboratory with a game of two rounds involving nine players. In the first round, subjects choose from costly high or costless low effort where high effort leads to higher income with higher probability than low effort and low effort definitely results in low income. After the choice of effort is made, subjects are informed on their income levels before they vote. The majority rule, unanimous consent or majority-rule voting only by those who chose high effort are considered as treatments and the fourth treatment consists in randomly assigning incomes and subjects voting in the second round under majority rule. If there is no income equalization after voting, each subject gets the income they earned. The one-shot version of this game under majority rule is the stag hunt game with two equilibria: one where all choose low effort and vote to equalize incomes (I) and one where all choose high effort and vote against equalization (II). The finitely repeated game has another social insurance equilibrium better than the first two. In the sequential equilibrium, all choose high effort and vote for equalization (III) via the threat of equilibrium of low effort and redistribution. The experiments with majority rule show no social contract equilibrium and through repetition, the result approaches to the inefficient first equilibrium.

In these treatments, the social contract fails to emerge. We examine whether reciprocity will create cooperative gifts in these gift exchange games in a laboratory. We add groups to our experience like Currarini and Mengel (2016) in order to see the effects of homophily and in-group bias on transfer making looking for evidence for homophily and in-group bias and ultimately reciprocity.

Agents will be randomly divided into two groups and we will analyse whether this would encourage them to behave differently and demonstrate in-group bias or in-group favouritism. In addition, we offer participants the opportunity to be matched with a partner from their group following the procedure proposed by Currarini and Mengel (2016). In this way, we expect the phenomenon of homophily to appear, where agents tend to interact with similar agents.

Below we first describe the design and procedure of the experimental study. Finally, we will present and explain the results.

CHAPTER 3 EXPERIMENTAL DESIGN

3.1. An overview of experimental design

The main contribution of our research to the literature is the study of the outcome in the presence of in-group bias and homophily by adding external grouping in the poverty and pension games setup in Hammond (1975), which explains that charitable behaviour may stem from egoism. We have worked on both poverty and pension games to be able to observe changes in transfers when the setup changes from simultaneous to dynamic moves by combining the experimental techniques used in Heijden et al. (1998b) and those in Currarini and Mengel (2016) to look for evidence of in group favouritism and homophily in the pension game. The results can be compared to previous studies because we have a dictator game setup just like Currarini and Mengel (2016) and we extend this study by the overlapping generations game. This study extends Heijden et al. (1998b) finding evidence for the willingness of participants to sustain a social norm of (low) transfers from young to old and rationalizing support of pay-as-you-go systems as we are looking for factors reinforcing or loosening those social norms.

Heijden et al. (1998b) examined the power of reciprocity in a gift giving using poverty and pension games designed to explain charitable behaviour because gifts are expensive individually, but collectively effective. They have compared the results of two procedures using the poverty game; one procedure is made without giving information on the amount of transfer of the previous player and in the second, the second player learns the amount of transfer before moving. Thus one setup may be compared to a simultaneous gift giving and the

second is a sequential gift giving game. These two procedures are designed to find evidence of reciprocity if there is. The results show no evidence of reciprocity.

Currarini and Mengel (2016) conducted a systematic study on the relationship between homophily and in-group bias. In their experience, agents are assigned to one of two external and random groups, and they play an eight-part series of games which is designed to elicit their degree of altruism, positive reciprocity and negative reciprocity with a member of the inner group or a member of the outer group. They used three treatments called exogenous, endogenous, and control to find evidence of homophily and in-group bias. Although they have found strong evidence of in-group favouritism when participants were exogenously matched; in-group favouritism disappeared when participants were matched endogenously. They have also found evidence of homophily because participants were willing to be paired with a member of their group. In the presence of homophily, they have explained that in-group favouritism disappeared under endogenous pairing because of self-selection and behavioural change. They also showed that homophily was associated with risk aversion.

3.1.1. Minimal paradigm design

Tajfel, Billig and Bundy (1971) created the “minimal group paradigm” methodology, which included the minimum conditions required to discriminate between groups to carry out their experiments. In the minimal group paradigm, the assignment of agents to groups is first performed without any reference to the previous interaction, so that participants are randomly assigned to groups. Second, there should be no face-to-face interaction or online discussion between subjects. Third, group members must be completely anonymous. Fourth, reward

matrices must be available to show the distribution of tangible rewards. Finally, the decision task should not require any connection between the personal interests and choices of the deciders. Many decisions involve trade-offs between personal and group interests, so the last criterion is likely to be violated in an economic environment. Experimental studies using a minimal paradigm have found that in-group favouritism is not only motivated by stereotypes, prejudices and racism, but also that agents tend to identify with groups in response to weak motivations. For example, Chen and Li (2009) found in-group bias even when agents were temporarily divided into two groups labelled with colours.

In our experiment, we have ensured the grouping by using two colours that will not remind any superiority. However the conditions of the minimal group paradigm are almost provided, we have used the "near-minimal paradigm" design, similar to Currarini and Mengel (2016). In our experiment, the participants were randomly assigned to one of the two groups, called the RED and BLUE group, and there is no other identity-enhancing activity. Therefore, we adopt the "near-minimal paradigm" design, which differs from Tajfel and Turner (1979) "minimal group" paradigm. In other words, subjects can expect welfare consequences from their actions. This is common to all our treatments.

In **EXO treatment**, a colour-blind random process is used to match participants to play two roles in poverty and pension games. This part is related to Chen and Li (2009) using an in subject design and asking each participant (using the strategy method) to choose a conditional action to match inside or outside the group. In contrast, we use a **between-subject design**. The advantage of the design of Chen and Li (2009) is that it helps to observe identity biases within subjects and its potential disadvantage is that subjects are asked for a conditional decision-making response and they may feel that their responses should differ.

Another innovation of our study comes with **ENDO treatment**, which is allowed to affect the probability of agents to match RED and BLUE types. Here we uncover *i*. the willingness of participants to pay for an in-group match (willingness to pay-WTP); *ii*. we map participants according to their WTP using an incentive-compatible mechanism; According to this mechanism, an agent with high WTP for in-group matching is more likely to match opponents within the group and (iii) we enable participants to play two roles in poverty and pension games.

3.1.2. Bilateral versus multilateral matching design

We wanted to study different matching structures, bilateral matching which is based on the principle of intragenerational transfers and overlapping matching which is based on the principle of intergenerational matching because these structures are common to crucial policy decision setups such as health insurance, social assistance and redistributive pension scheme. In principle, in either bilateral or overlapping matching setup, the cooperation is individually costly but mutually efficient. However, there is no guarantee that today's decisions will not be reversed tomorrow. Agents need to be assured that a cooperative attitude would prevail tomorrow so that they behave cooperatively today. In real life, reciprocity has been proposed as a precondition for political and public support in social security and retirement systems.

In “pay-as-you-go” (PAYG) scheme, intergenerational transfer takes place as follows: the retirement income of the currently retired generation is funded by the current working generation, when they retire, the retirement income of the current working generation will be funded by the next working generation, and

when they retire, the income of the next working generation will be funded by the further next generation and so on... Such an intergenerational transfer system can clearly suffer from a reliability problem. What guarantees that the working generation funding the current retirees will be funded by future generations when they in turn are retired? Every working generation can experience an incentive to reconsider the level of support currently given to the older generation. The self-enforcing behaviour mechanism that can result in a sustainable PAYG system is clearly **intergenerational reciprocity**. The present retired generation receives support in relation to the support they have given to the previous retired generation (Hammond, 1975; Kotlikoff, Persson and Svensson, 1988). In Hammond (1975), in the poverty game, players are rich and poor, interchangeably and in the pension game, they are first young and then old. From this point of view, for the presence of a cooperative solution, there must be a systematic relationship between the decisions of players in overlapping matching structures. The reciprocity mechanism may regulate this relationship.

We can analyse and differentiate reciprocity in these two contexts:

- In the binary matching, we know that no transfer is a strongly dominant strategy for the second player. However, in the overlapping setup, the strategy of no transfer is not strong as there is another player who can always punish or reward the behaviour of the previous player. In this respect, we can expect larger transfers and a social contract to emerge in the overlapping matching structure.

- On the other hand, while the relations are more direct in the poverty game, the relations in the pension game are indirect. That is, subjects are more likely to reward or punish in response to how they were treated (Güth and van

Damme, 1998). The more direct relationships might create an incentive for larger transfers.

There are different experimental extensions of the pension game. Heijden et al. (1997) use private retirement investment as well as the option to use intergenerational transfers and show that the possibility of individual savings erodes intergenerational transfers. Even if intergenerational transfers are more efficient than private savings, this erosion occurs. The main attraction of private savings compared to PAYG scheme is that the first is not exposed to any of the uncertainties regarding whether the scheme will be equally protected in the future.

In another extension by Güth et al. (2002) there are experiments of generations that overlap with more than one family where two types of intergenerational transmission were possible. One generation can make voluntary transfers (S_t) to the previous generation (mainly a PAYG pension) and make a transfer to the next generation (G_t) (mainly a private retirement investment in human capital). The study investigates the relationship between S_{t+1} and S_t and the relationship between S_{t+1} and G_t. Experimental results show that both relationships are quite weak. Again, they cannot find support for intergenerational transfers through reciprocity -direct or indirect. (Tausch, Potters and Rield, 2010).

This study contributes to this literature by analysing reciprocity and altruism in two different matching structures in the presence of groups.

3.2. Implementation

We have used the experimental software O-tree by Chen, Schonger and Wickens (2016) to set up the game and allow it to be played online simultaneously. At the end of the experiment, the participants are given a questionnaire on their socio-demographic characteristics, risk preference, environmental attitudes, beliefs etc. The experimental procedures are described in this section in detail in Appendix A with instructions, and the screenshots from the actual experiment and questionnaire are presented in Appendix B while the technical infrastructure of the experiment is offered in Appendix D.

3.2.1. Poverty Game

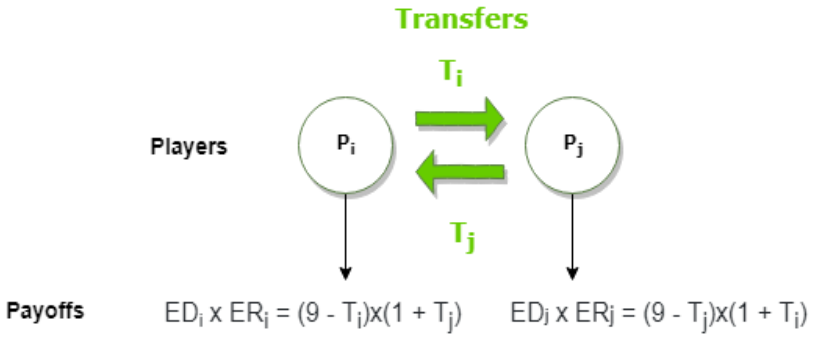
A simple 2-period poverty game forms the basis of the experiment. The critical feature of the game is that **gift giving is individually costly but mutually effective**. There are two players: player 1 and 2. Each player will be one period Decider (rich) and one period Receiver (poor). In the first period, player 1 is Decider and player 2 is Receiver. Player 1 chooses the transfer T_i from the set $\{0,1,\ldots,7\}$ to be given to player 2. In the second period, the roles are reversed: player 2 becomes Decider (rich), player 1 becomes Receiver (poor), and player 2 chooses the transfer T_2 from the set $\{0,1,\ldots,7\}$ to be given to player 1. We only allow integers for the choice of transfers and transfers can not exceed 7 units. In every period, Decider is endowed with 9 units, Receiver is endowed with 1 unit. Together with transfers, endowments determine the "consumption" of players in two periods.

If player i gives the transfer T_i, he will be left $9 - T_i$ to consume. If player j receives the transfer T_j, he could consume $1 + T_j$. The utility of player i is given by the product of consumptions in two periods:

$$U_i = C_{iD} \; x \; C_{iR} = (9 - T_i)(T_j + 1) \qquad (1)$$

Figure 3.2.1.1 describes the previous setting and Table 3.3.1.1 provides all possible payoffs based on transfer decisions based on the utility function given in Equation (1).

1- Figure 3.2.1.1 Players, Moves and Corresponding Payoffs for the Poverty Game



1- Table 3.2.1.1 All Possible Payoffs in the Poverty and Pension Games

		Transfers **to you** from Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfers **from you** to Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

We have designed 4 treatments for the poverty game. 8 players have played each treatment at the same time in pairs. In Treatment CONT (Information), the second player is informed about the transfer of the first player, T_1 before choosing the transfer for the second period T_2. In CONT-N treatment (no information), the second player is not informed about the transfer of the first player, T_1 before choosing the transfer for the second period T_2. We can say that in CONT-N treatment, it is as if both players simultaneously choose a transfer level T_i from the set $\{0,1,\ldots,7\}$. In Treatment CONT, the first player chooses the strategy T_1 $\{0,1,\ldots,7\}$; and the strategy of the second player is a mapping from the set of transfers given to $\{0,1,\ldots,7\}$. Formally, $\tau_2: \{0,1,\ldots,7\} \rightarrow \{0,1,\ldots,7\}$. This means that the second player chooses the action T_2 as a function of T_1. In EXO treatment, all of the participants are randomly divided into two groups: RED and BLUE, and the poverty game with information is played. In ENDO treatment, participants are randomly divided into two groups: RED and BLUE, but before starting the poverty game with information,

participants are asked to specify their willingness to pay to be matched with a partner from the same group.

2- Table 3.2.1.2 Treatments and Independent Observations in the Poverty Game

Label	Matching	RED/BLUE groups	Information Matching	Observations
CONT	exogenous	No	Full information Random assignment	8
CONT-N	exogenous	No	Non information Random assignment	8
EXO	exogenous	Yes Equal number	Full information Random assignment	8
ENDO	endogenous	Yes Equal number	Full information Preferential assignment	8

The four treatments of the poverty game experiment are described in detail below:

• **Control treatment (CONT)**

The experiment consists of 10 rounds and each round consists of 2 periods. In the experiment, groups of 8 participants are randomly paired each round. In each pair, one of the participants will be randomly assigned to the role of Decider before the game starts. In each round, each participant plays both the role of Decider and the role of Receiver. When the participant is in the role of Decider, his endowment is 9 units and his payoff depends on the transfer T to the Receiver: $ED = 9 - T$. When the participant is in the role of Receiver, his endowment is 1 unit and his payoff depends on the transfer T to the Decider:$ER = 1 + T$. At the end of the first period, the Receiver is informed of

the transfer made T_1 by the Decider when he becomes the Decider in return for the second period and chooses T_2. After both periods of a round are over, all participants are informed about transfers made and their payoffs in that round. Earnings as points in one round are determined by the product of the final value when Decider with the final value when Receiver: $ED \times ER$. Participants never know whether they will be the first or second Decider in any given round, or who they will be matched with in a particular round. When two periods of a round are over, a new round starts.

• **Exogenous treatment (EXO)**

1. All participants are randomly assigned to one of the groups, BLUE and RED with the constraint that there are equal numbers of players in each group. After the experiment begins, participants are informed which group they belong to.

2. They are randomly paired with a partner from RED or BLUE groups to play the game.

3. First, players are informed about whether their partners are from RED or BLUE groups. Then the steps of the experiment are the same as the control experiment.

• **Endogenous treatment (ENDO)**

1. All participants are randomly assigned to one of the groups, BLUE and RED with the constraint that there are equal numbers of players in each group. After the experiment begins, participants are informed which group they belong to.

2. WTP revelation mechanism Participants are asked to reveal their willingness to pay to be matched with a partner from the same group by

specifying a number from 0 to 10 and indicating how much they want to pay to be matched with this group (WTP). Then, a number is drawn randomly from a uniform distribution between 0 to 10 and WTP is compared to this randomly determined number. If WTP is greater than the randomly drawn number, then the participant is matched with a partner from the same group; if WTP is less than the randomly drawn number then the participant is randomly matched with another participant. Therefore, a high WTP increases the likelihood to be matched with a participant from the same group. In fact, this number does not have any effect on their endowments. The payoffs are comparable in all treatments. Since the experiment had a finite number of participants, there was a small chance for the possible impossibility of this mechanism. In this case, we randomly matched the participants. The participants were given full information about all these details.

3. After the matching process, players are informed about whether their partners are from RED or BLUE groups. Then the steps of the experiment are the same as the control experiment.

• **Control-N treatment (CONT-N)**

This treatment is the same as control treatment except that at the end of the first period, the Receiver is not informed of the transfer made T_1 by the Decider when he becomes the Decider in return for the second period and chooses T_2.

These different treatments are designed to analyse and measure the impact of different behavioural traits in decision making. CONTROL treatment is the base treatment while EXO treatment extends CONTROL treatment by randomly assigning participants to artificial groups: BLUE and RED and ENDO treatment extends EXO treatment by adding an endogenous matching structure with willingness to pay.

- CONTROL-N treatment is designed to see the impact of reciprocity in CONTROL treatment.

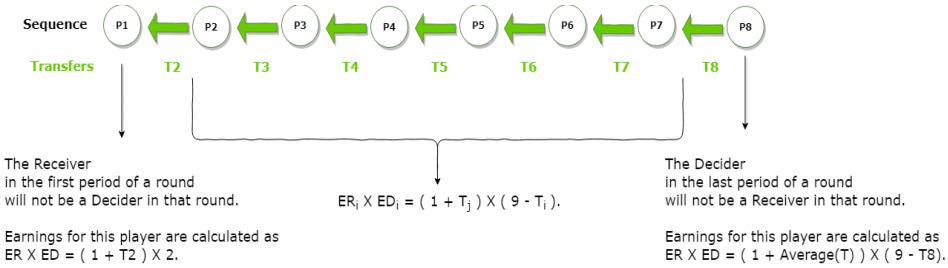
- The comparison of EXO and CONTROL treatments allows us to see how transfer making changes with the presence of groups. The groups in EXO treatment are created artificially, if we see that these artificial groupings affect the behaviour of our participants, in real life we might expect the importance of the role of heterogeneity in society and the policy implications thereof.

- The comparison of ENDO and EXO, on the other hand, allows us to discern the link between homophily and in-group biases as ENDO treatment extends EXO treatment with preference for its own group.

3.2.2. Pension Game

The procedure in the pension game is quite similar to the poverty game. The only difference is that in the poverty game, matching is bilateral and mutual, while in the pension game, matching is multilateral and sequential. The utility of the players is given again by Equation (1) as the product of consumptions of two periods. The differences between these games vary in terms of who gives the transfer to whom. For this reason, the number of transfers in one round and the order of the players are different from the poverty game. In the bilateral structure of the poverty game, there are two periods and the number of games is equal to the number of the matched couples while in the overlapping structure of the pension game, one round consists of consecutive periods played by each player and the game is played once. The impact of reciprocity in the poverty game is more straightforward as the transfer making is between the same two participants. However, in the pension game, the person that the participant makes a transfer to is different from the person that the participant will expect a transfer from. Groups of 8 players play the game each time. The matching structure is as follows:

2- Figure 3.2.2.1 Players, Moves and Corresponding Payoffs for the Pension Game



The first player in sequence, P1 plays only the role of Receiver. The last player in sequence P8 only plays the role of Decider. An experimental standard has not yet been developed on how to deal with the overlapping generations design. In the experiment, we have chosen to set the first period consumption of P1 equal to the basic endowment of 2 units. The transfer that P8 receives has been set equal to the average transfer to all previous Receivers (rounded up). This starting and ending rule is arbitrary. We have used this rule to be able to capture the infinite horizon game setup.

There are 4 treatments in the experiment for the pension game. When players are making a decision in CONT treatment, they can see all previous transfers that have been made in the particular game before deciding on their transfer. In EXO treatment, all of the participants are randomly divided into two groups, RED and BLUE, and the pension game with full information is played. In addition to the previous transfer decisions, the players can also see the group of the players that they are making a transfer or receiving a transfer from. In ENDO treatment, participants are randomly divided into two groups, RED and BLUE, but before transfer decisions, participants are asked to specify their willingness to pay to be matched with a partner from the same group. In the

pension game, we have designed two types of ENDO treatments because a player who is placed at any position in sequence other than the first and the last will play Decider for a player and Receiver for another one. In the experiment, which we call ENDO-R, players indicate their willingness to pay to be matched with a partner to receive a transfer from, from the same group (on the right side of the sequence). In ENDO-L, players indicate their willingness to pay to be matched with a partner to give a transfer to, from the same group (on the left side of the sequence).

3- Table 3.2.2.1 Treatments and Independent Observations in the Pension Game

Label	Matching	RED/BLUE groups	Information Matching	Participants
CONT	exogenous	No	Full information Random assignment	8
EXO	exogenous	Yes Equal number	Full information Random assignment	16
ENDO-L	endogenous	Yes Equal number	Full information Preferential assignment	16
ENDO-R	endogenous	Yes Equal number	Full information Preferential assignment	8

The experiment consists of four treatments, detailed below:

• **Control treatment (CONT)**

In the experiment, participants are randomly assigned a number in a transfer sequence. In this sequence, each player is a Decider for the player to the left and a Receiver for the player to the right. The experiment consists of 10 rounds and each round consists of 8 periods. In each round, each participant plays both the role of Decider and Receiver except for the first and last

participants in the sequence. The Decider' first endowment is 9 and his final payoff depends on his transfer to the Receiver: $ED = 9 - T$. When he becomes the Receiver, his first endowment is 1 and his final payoff depends on the transfer by the Decider: $ER = 1 + T$. The participants can see all the transfer decisions made in previous periods in the role of Decider. At the end of each round, everyone is informed about T the transfer made to them and their earnings in that round. Earnings in points in one round are determined by the product of the final payoff as a Decider with the final value as a Receiver: $ED \times ER$. The first participant can only be a Receiver, but not a Decider. 2 units are allocated for the final payoff as a Decider $ED = 2$. The last participant can only be a Decider, but not a Receiver. The average transfer in that particular round is allocated for the final payoff as a Receiver $ER = Avg(ER)$.

Although participants are randomly assigned to their roles in the sequence, we prevent participants to stay in the roles of first and last deciders. Although this partially disrupts randomness, it gives us the chance to observe participants' reactions in different roles. Participants' order in each round is completely randomly determined by the computer. Participants never know in which period they will be the Decider in a particular round, and who they will be matched with in a particular round. When 8 periods of a round are over, a new round is started.

• **Exogenous treatment (EXO)**

1. All participants are randomly assigned to one of the groups, BLUE and RED with the constraint that there are equal numbers of players in each group. After the experiment begins, participants are informed which group they belong to.

2. They are randomly paired with a partner from RED or BLUE groups to play the game.

3. First, players are informed about whether their partners are from RED or BLUE groups. Then the steps of the experiment are the same as the control experiment.

• **Endogenous-Left treatment (ENDO-L)**

1. All participants are randomly assigned to one of the groups, BLUE and RED with the constraint that there are equal numbers of players in each group. After the experiment begins, participants are informed which group they belong to.

2. **WTP revelation mechanism** Participants are asked whether they want to have an impact on the group of the participants they will make a transfer to in the role of the Decider. The WTP revelation mechanism is used to measure their willingness and assess their partner. This mechanism is described and discussed in more detail in section 3.2.1.

3. After the matching process, players are informed about whether their partners are from RED or BLUE groups. Then the steps of the experiment are the same as the control experiment.

• **Endogenous-Right treatment (ENDO-R)**

1. All participants are randomly assigned to one of the groups, BLUE and RED with the constraint that there are equal numbers of players in each group. After the experiment begins, participants are informed which group they belong to.

2. **WTP revelation mechanism** Participants are asked whether they want to have an impact on the group of the participants they will receive a

transfer from in the role of the Receiver. The WTP revelation mechanism is used to measure their willingness and assess their partner. This mechanism is described and discussed in more detail in section 3.2.1.

4. After the matching process, players are informed about whether their partners are from RED or BLUE groups. Then the steps of the experiment are the same as the control experiment.

Minimal Group Design

WTP revelation mechanism pushes the participants with high WTP towards the first and last roles of the sequence. Even though this mechanism causes grouping in the game, this is due to the presence of participants revealing high WTP and it does not act like an unrandomizer; participants can only control the group of participants they are playing with.

In this study, we use the minimal group paradigm, which is a design used to create groups by trivial and sometimes meaningless tasks in social psychology (Tajfel and Turner, 1979). Tajfel and Turner (2004) concluded “inter-group trivial and temporary (ad-hoc) categorization leads to intra-group favouritism and discrimination against the outside group”. In an economic experiment, Chen and Li (2009) compared an ad-hoc categorization separated by two trials (maize and blue) and categorization separated by preferences for paintings of different artists. They have found that although both procedures did not have a significant impact on the size or direction of intra-group bias, the procedure led to intra-group bias.

In our study, we used RED and BLUE colours as group tags to prevent hierarchical tags (such as group 1 and 2 or groups A and B) and prevent tags

from being associated with attributes that we couldn't control such as gender, race, etc.. Many studies have shown that expectations about positive and negative reciprocity differ greatly between different cultures and genders and have interaction effects between the two (Gaechter and Herrmann, 2009; Bohnet, Herrmann and Zeckhauser, 2010). Therefore, it is important to use neutral groups to ensure that we measure homophily and that there are no different expectations between these dimensions. In the instructions, we switch between “RED and BLUE” and “BLUE and RED” to avoid creating a hierarchy between groups. This will enable us to focus on well-established culturally learned preferences for in-group matches, even enabled for meaningless tags like RED and BLUE.

3.2.3. Other Details

The experiment lasted 30-40 minutes in poverty games and 40-60 minutes in pension games. None of the subjects participated in a related experiment before and none has participated in the experiment more than once. For the experiments carried out in the laboratory, the experiment was carried out with a random computer. The instructions (see Appendix A) were distributed and explained by the experimenter. Then, the subjects were given a few minutes to study the instructions more carefully and ask questions. The subjects were also given the payoff matrix showing their earnings according to transfer made and transfer received (Table 1). After 5 practice rounds, subjects played 10 rounds of one of the treatments described above.

At the end of the last round, participants answered a questionnaire in both poverty and pension games (Appendix B). The questions in the anonymous survey were related to socio-demographic characteristics, risk preferences,

environmental consciousness and religious beliefs of the participants (see Appendix B for the questionnaire).

The earnings in money is determined by multiplying the amount obtained in points by 5 kurus and adding to this amount the participation fee of 10 TL.

3.3. Hypotheses

Hammond (1975) shows that **there will be no transfers in the finite game that will lead to a non-cooperative equilibrium**. If the horizon is endless, as long as each player cooperates, there can be an effective equilibrium of cooperation. If a player breaks the self-enforcement agreement, the equilibrium collapses completely. Therefore, if every player believes that the other will not cooperate, the transfer will not take place even if there is a cooperative equilibrium. So there may still be a non-cooperative equilibrium.

The payoff function given by Equation 1 indicates that each player would like to smooth consumption. The only way to achieve this is by exchanging transfers: to give when rich and to receive when poor. However, although they are collectively efficient, transfers are costly individually. There is an incentive to set $T_i = 0$. The absence and presence of information does not affect this game-theoretical prediction. In fact, the dominant strategy for player 1 is to make no transfer. Evidence from other experiments shows that subjects expect that their partners will act strategically in two-stage sequential games[5]. Strategic behaviour implies no transfer in CONT and CONT-N treatments, but the argument required for this prediction is slightly stronger in treatment CONT (iterated elimination of dominant strategies - IEDS) than treatment CONT-N

[5] See Neelin et al., 1988, Harrison and McCabe 1993, Camerer et al., 1991, Mccabe et al., 1994

(elimination of dominant strategies - EDS) (Heijden et al., 1998b). We formulate this prediction as follows:

Hypothesis 1 (strict gamesmanship) There is no transfer in any treatment ($T_i = T_j = 0$).

If $T_i = T_j = 0$, each player wins only 9. If a binding agreement was possible, transfers would be optimally set to $T_i = T_j = 4$ where a Pareto optimal result would be achieved providing perfect consumption smoothing with 25 payoff which is nearly three times the payoff with no transfer. Therefore, there are important incentives to achieve some kind of implicit cooperation.

Several experimental studies (Berg, Dickhaut and McCabe, 1995; Bolle and Ockenfels, 1990; Fehr, Kirchsteiger and Riedl, 1993; Güth, Ockenfels and Wendel, 1993; Morris, Sim and Girotto, 1995) have shown that reciprocal benefits are gained from cooperation. These experiments use a sequential (not simultaneous) matching structure to reward or punish the first mover and find that an efficient cooperative outcome appears to some degree; which in return contradicts the strict gamesmanship hypothesis. These studies also point out to reciprocal behaviour in the sense that there were a positive relationship between actions and reactions to these actions.

Berg, Dickhaut and McCabe (1995) studied a two-stage investment game: in the first stage, a player must split $10 to a second player and himself and in the second stage, the experimenter triples the amount of money received by the second player and the second player has to decide how much of this, he wants to return to the first player. Contrary to the game-theoretical predictions, they have observed that 92% of the first movers transferred money and 85% of the second movers who received money, gave some money back. They have defined the reciprocal second player as the player who gave the first player enough money to

make him better than he had saved all the money to himself. According to this definition, they can classify 46% of the second movers receiving money as reciprocal. This definition of reciprocity actually only meets the weak reciprocity type.

The hypothesis on reciprocity is based on the "strength" of reciprocity as well as its "weakness". According to Berg, Dickhaut and McCabe (1995), we can define the weak form of reciprocity in our setting as follows. For any $T_1 \in \{1,\ldots,4\}$ of player 1, player 2 must give at least $T_2 = 1$ to ensure that player 1 wins more than 9 he can earn by choosing $T_1 = 0$. For example, if player 1 chooses $T_1 = 4$ and player 2 responds with $T_2 = 1$, player 1 earns $5\times2 = 10 > 9\times1$. So, if player 2 is weakly mutual, when player 1 chooses $T_1 \in \{1,\ldots,4\}$, player 2 should give back $T_2 > 0$. If players stick to this weak form of reciprocity, perhaps we can only expect moderate transfer levels. However, even $T_1 = T_2 = 1$, these transfers will allow both players to earn $8\times2 = 16 > 9\times1$, which is a significant improvement over the return of 9 they will win with zero transfers.

Hypothesis 2 (Reciprocity)

a. Weak Reciprocity: The transfers are positive ($T_i > 0\ \forall i$).

b. Strong Reciprocity: The transfers are positive ($T_i > 0\ \forall i$) and the transfer of the second transfer maker is positively associated with the transfer of the first transfer maker.

A stronger form of reciprocity can be defined as a form in which the transfer given by player 2 increases monotonously with the transfer given by player 1. In particular, if player 1 believes that "what you give is what you can expect to achieve", the optimal level of transfer exchange can be achieved

collectively. The return can be easily calculated using Equation (1), the payoff is maximized at $T_i = 4$ subject to $T_j = T_i = 4$.

Hypothesis 3 (Homophily and in-group bias)

a. Participants show an interest in being matched with a participant from the same group even though it does not affect their utility $WTP > 0$.

b. Participants are more generous to members of their group compared to those who are not from their group. They are making more transfers than the transfer level without groupings.

c. Participants are more reciprocal for members of their group compared to those who are not from their group.

As we have previously mentioned, homophily is basically the desire to interact with others with similar characteristics. In our abstract design of groupings, we first expect that participants will make payments to be matched with opponents of the same group to refer to the presence of homophily (Hypothesis 3a). **In our study, the term homophily will express the individuals willingness to be matched with others from their group to interact revealed by their willingness to pay for in-group matching as in Currarini and Mengel (2016).**

Previous experiments indicate that people behave more favourably to other people if they are similar. This widespread phenomenon is referred to as in-group bias (Hypothesis 3b). Hewstone, Rubin and Willis (2002) describe in-group bias as “the systematic tendency to evaluate a person's own group (in-group) members more favourably than another group (outside group) members”. In line with this definition, Hypothesis 3b indicates that the amount of transfer in in-group matches will be more than that in out-group matches.

In the presence of group membership, agents can have a tendency to favour members of their group due to in-group bias. The basis of Hypothesis 3c which is about more reciprocity for in-group members than out-group members is related to how behaviour will be affected by social preferences and beliefs. First, in terms of social preferences, reward and punishment mechanisms of positive and negative reciprocity work in a way to make in-group bias clearer. In other experimental studies, it was observed that in-group members are rewarded more for pro-social behaviour than out-group members (Chen and Li, 2009) and in-group members can be punished more for selfish behaviour than out-group members (Shinada et al., 2004). Second, in terms of beliefs, reciprocity confirms in-group bias which can be seen from different perspectives: the expectations of reciprocity from in-group members (Rabbie et al., 1989), reputational concerns in group membership and social norms which is anticipated as would never be violated (Fehr and Fischbacher, 2004a).

We have randomly divided people into two groups to see the effects of in-group bias and homophily. Note that our design does not depend on the strategic method. In other words, each of our participants plays either in-group or out-group. One advantage of our design is that it does not have a router, as it prevents a conditional selection of "RED if I match from within the group, otherwise I will do this". Such contingent choices can be seen as suggestive, so participants can expect to make a different choice only because the option is given. The disadvantage of our design is that we cannot directly observe in-group bias at the level of the individual agent. Therefore, in the definition of in-group bias, we need to compare the behaviour of the participants in in-group and out-of-group matches. Basically, we believe that using groups will create a group identity and increase the likelihood of a cooperative equilibrium in a group.

Grouping may increase the strength of reciprocity in the treatment of EXO and ENDO. If this is the case then transfers, which are individually costly, will be higher in the presence of a completely external grouping that does not cause any change in the utility function of the participants, i.e. EXO and ENDO treatments participants contribute more compared to CONT.

Hypothesis 3b refers to weak reciprocity, while Hypothesis 3c refers to strong reciprocity. Based on the strong definition of reciprocity, we expect that there will be a positive correlation between the transfer from the second decider and the transfer of the first. Tajfel and Turner (1979) point out that individuals are more positive towards their group members than those outside the group.

In the presence of grouping, it is a very clear expectation that individuals will make more transfers to those from their group. But as Currarini and Mengel (2016) emphasize, we may expect in addition to rewards "harsh punishments of bad behaviour from in-group opponents, due to the psychological distress of having invested resources in vain, or in a reaction to unexpected ill treatment from other agents from the same group". Strong social norms enforced by means of selective punishments and rewards are characteristic of communities with homophilous bonds.

CHAPTER 4 RESULTS

4.1. An overview of the results of the experiment

A total of 80 students participated in the online experiment. Descriptive statistics for the participants in the poverty and pension game procedures are given in Table 4.1.1. Mostly, undergraduate and social sciences students (74%) participated in the experiment with a mean GPA in the interval 2.50-3.00 and the average age was 23.75. %65 were women. In the endogenous matching procedures, participants were willing to pay on average 2.31 out of 10 units to be matched with a participant of their own group and the maximum amount they were willing to sacrifice was 9. The mean personal income was approximately 2010 and the mean household income was around 4475. Participants are generally willing to act for the preservation of resources and even more for the restriction of residential developments, they do not litter but these actions do not go as far as boycotting polluting companies. They believe in general that their actions will help future generations and they have negative feelings for the harm that we are doing to the environment. 35% of the participants believe in destiny and 20% are indecisive on the power of free will. Overall 45% do not believe in destiny and believe in the power of free will. 54% agreed that they were praying when they were alone other than when they were participating in religious ceremonies and 31% stated that they were not praying alone.

4- Table 4.1.1 Descriptive Statistics for All Participants

Gender	**Share (%)**	**Department**	**Share (%)**
Male	35	STEM	26.25
Female	65	Social Sciences	73.75
Personal Income		**Household income**	
500-1000	32.50	500-1000	0
1000-2000	30.00	1000-2000	7.50
2000-3000	15.00	2000-3000	10.00
3000-4000	7.50	3000-4000	16.25
4000-5000	6.25	4000-5000	10.00
5000+	8.75	5000+	56.25
Education			
University student	92.5		
Master Graduate	5		
PhD Graduate	2.5		
Age		**GPA**	
≤24	70.00	1.50-2.00	3.75
25-29	26.25	2.00-2.50	28.75
30-39	2.50	2.50-3.00	30.00
40-54	1.25	3.00-3.50	25.00
>55	0	3.50-4.00	12.50
Need for restriction on consumption for resource preservation		**Need for restriction on residential construction**	
1 (Definitely disagree)	5.00	1 (Definitely disagree)	3.75
2 (Disagree)	3.75	2 (Disagree)	1.25
3 (Neither agree nor disagree)	7.50	3 (Neither agree nor disagree)	2.50
4 (Agree)	26.25	4 (Agree)	17.50
5 (Definitely agree)	57.50	5 (Definitely agree)	75.00
Boycott over-polluting companies		**Litter when nobody is around**	
1 (Definitely disagree)	25.00	1 (Definitely disagree)	78.75
2 (Disagree)	13.75	2 (Disagree)	15.00
3 (Neither agree nor disagree)	22.50	3 (Neither agree nor disagree)	0
4 (Agree)	25.00	4 (Agree)	3.75
5 (Definitely agree)	13.75	5 (Definitely agree)	2.50

Participation to pro-environment activities will help future generations		**Angry when thinking about the damage done to plants and animals**	
1 (Definitely disagree)	2.50	1 (Definitely disagree)	1.25
2 (Disagree)	12.50	2 (Disagree)	3.75
3 (Neither agree nor disagree)	0	3 (Neither agree nor disagree)	0
4 (Agree)	33.75	4 (Agree)	13.75
5 (Definitely agree)	51.25	5 (Definitely agree)	81.25
Believe in destiny and in that not everything is the result of free will		**Do not pray alone other than in occasions of religious ceremonies**	
1 (Definitely disagree)	27.50	1 (Definitely disagree)	36.25
2 (Disagree)	17.50	2 (Disagree)	17.50
3 (Neither agree nor disagree)	20.00	3 (Neither agree nor disagree)	15.00
4 (Agree)	21.25	4 (Agree)	5.00
5 (Definitely agree)	13.75	5 (Definitely agree)	26.25

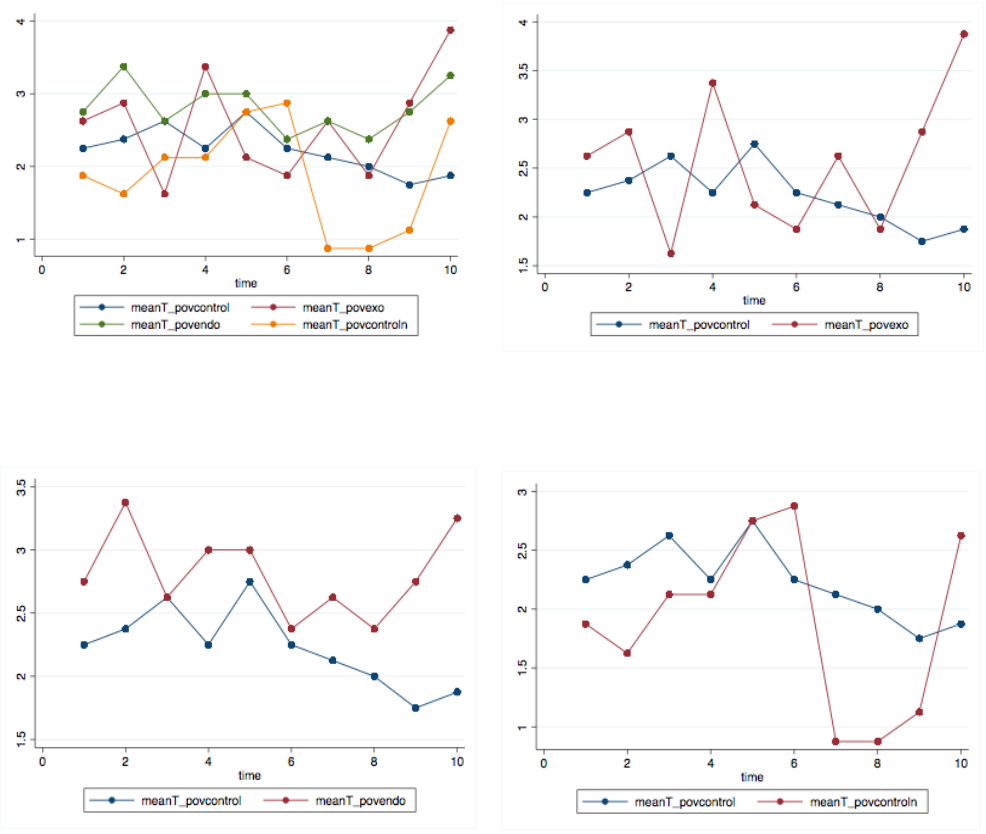
Result 1 Contrary to hypothesis 1 (strict gamesmanship) we observe positive transfer levels. The average transfer level (averaged over all ten sessions) is 2.11. The average payoff is 19.52. Remember that the socially efficient strategy is transferring 4 and this average represents only 50% of this efficient level. Without transfers, they would earn 9 and with efficient transfers they would earn 25. On average, $\frac{19.52-9}{25-9}\times 100 = 65.75\%$ of the possible efficiency gains from transfers are actually realized. Only 27% of the time, participants transferred 0 and 24% of the times they have made a transfer greater than or equal to 4. Only 2 players out of 80 players (2.5%) made no transfer at all. We can reject Hypothesis 1.

4.2. Poverty Game

A total of 32 students participated in the poverty game experiment and played in groups of 8 the four treatments of poverty game described in Section

3.2.1. We can see in Figure 4.2.1 the average transfer levels in these treatments and in Table 4.2.1 the amounts of average transfers and payoffs in these treatments. A general result is the generally higher levels of mean transfers in ENDO treatments and as for the CONT-N and CONT treatments, up to fifth round, transfers are higher in CONT than in CONT-N and after the fifth round, the reverse is true.

3- Figure 4.2.1 Comparison of Transfer Levels in Poverty Treatments

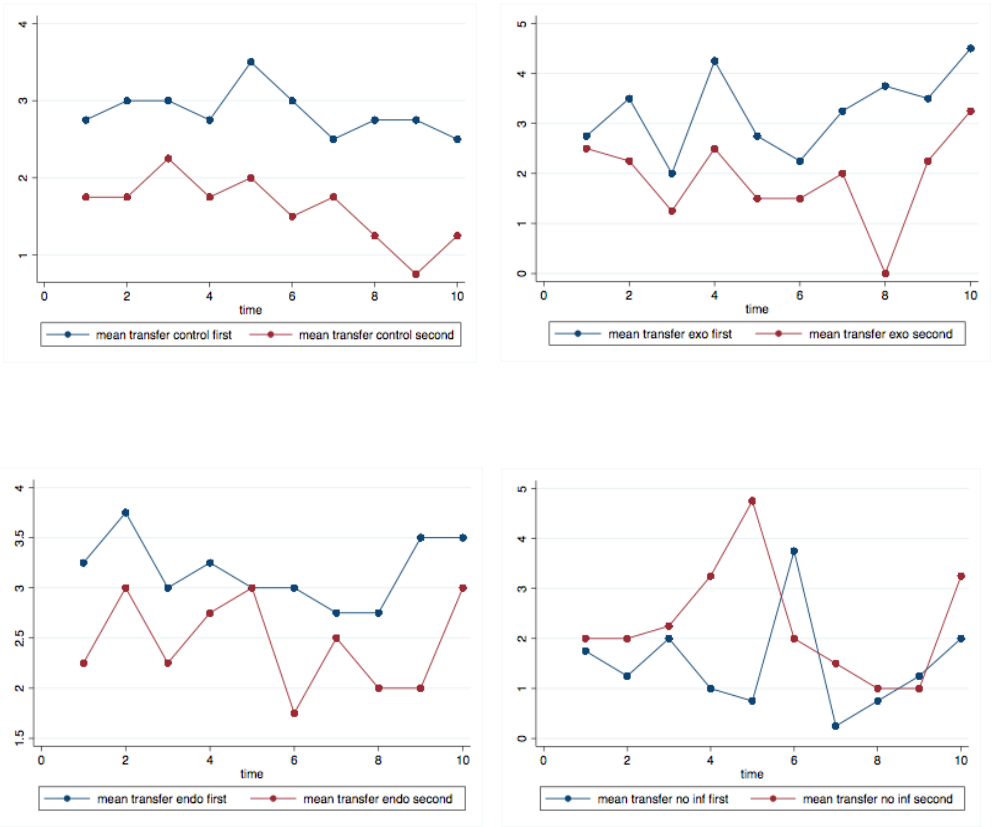


5- Table 4.2.1 Average Transfers and Payoffs in Poverty Game Treatments

	CONT	CONT-N	EXO	ENDO	TOTAL
T	2.23	1.89	2.57	2.81	2.38
T_1	2.85	1.47	3.25	3.17	2.68
T_2	1.60	2.30	1.90	2.45	2.06
Payoff	22.07	20.92	22.45	22.94	22.09

Result 2 The participants have decided on a transfer to their opponent 320 times and 71 of these times (22.19%), participants have given 0 and 249 times (77.81%) they have made positive transfers. All participants have made a transfer different than 0 at least once. We can conclude that participants did not behave in a strategic way. The average transfer level (averaged over all four sessions) is 2.38 (Table 5). which is 59.5% of the efficient transfer level (4), thus subjects are able to capture a major part of the possible gains from trade. Average earnings over all four treatments is 22.09; $\frac{22.09-9}{25-9}\times 100 = 81.81\%$ of the possible efficiency gains from transfers are actually realized. This gain is more than the efficiency gains realized in Berg et al. (1995) and Heijden et al. (1998b).

4- Figure 4.2.2 Comparison of Transfer made by the First and Second Player in Poverty Treatments



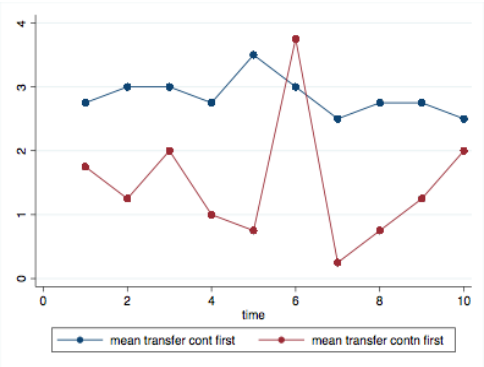
As for the strategic decision of the second player in the poverty game, in CONT, EXO and ENDO treatments, the second player has made less transfer than the first player (see the Figure 4.2.2 above). When we apply Wilcoxon rank-sum (Mann-Whitney) test to test the hypothesis that transfers of the first player (T_1) and the second player (T_2) follow the same distribution in CONT-N treatment, with probability 0.043, the first player (T_1) makes less transfer than the second player (T_2). This treatment puts the players in symmetrical positions despite the sequential structure as players are not informed about the choice of

first moving players. This treatment is identical to the simultaneous move structure.

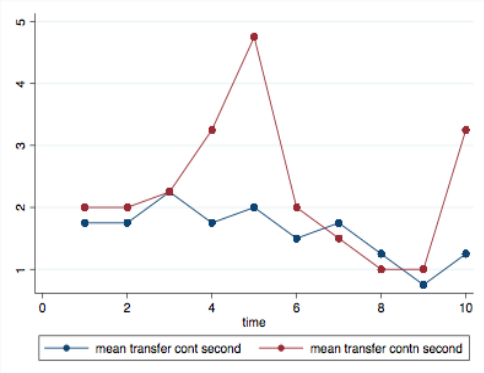
Result 3 Transfers in CONT treatment are higher than those in CONT-N treatment (Figure 4.2.1). This result points to reciprocity, the first player makes higher transfers with the expectation of higher transfers in return. The average transfer T_1 is significantly larger in treatment CONT than in treatment CONT-N (Figure 4.2.3 and Table 4.2.1). The average transfer T_2 does not differ significantly across the two treatments (Figure 4.2.4). The average transfer in CONT-N treatment is 1.89 and 2.23 in CONT treatment (18% higher and this difference is significant at p=0.026 with a two-tailed Mann-Whitney test). The outcome is in line with **reciprocal behaviour**. The fact that players have information on the transfer received changes the outcome of the game.

As Gouldner (1960) puts it, “We owe to others for what they do for us”. We see this by comparing the first and second player's behaviours in CONT (information) and CONT-N (no-information) treatments. The choice of the second player, who does not know the transfer choice for him in CONT-N treatment, is not much different from the choice of the first player. However, in CONT treatment, when the second player has information priority, he responds to the behaviour of the first player. Thus, here, there is evidence of the existence of reciprocity. As Budescu, Süleyman and Rapoport (1995) stated, reciprocity is possible if one of the complementary conditions of “time priority” and “information priority” is fulfilled.

5- Figure 4.2.3 Comparison of Transfer Levels by First Players in CONT and CONT-N Treatments



6- Figure 4.2.4 Comparison of Transfer Levels by Second Players in CONT and CONT-N Treatments

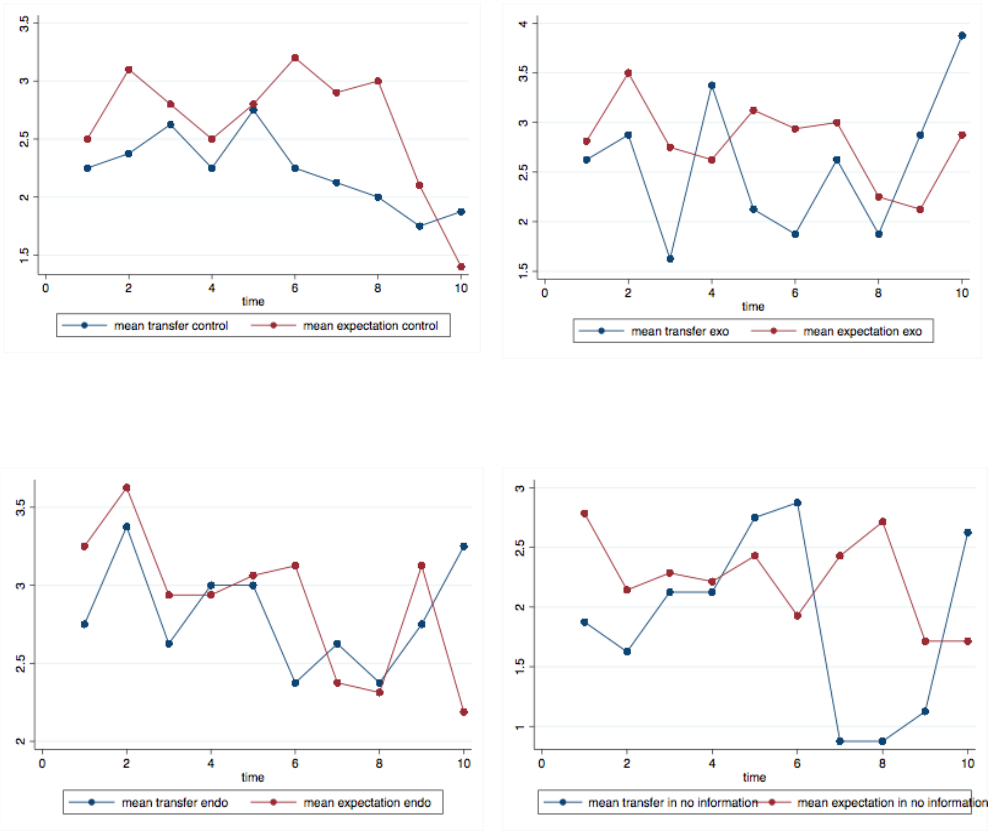


Result 4 Although the link between the average transfer of by the first player (T_1) and the second player (T_2) is positive, it is weak for the overall poverty game treatment as the Pearson correlation coefficient between these is 0.243 with a significance level greater than 99%. An analysis of different treatments in the poverty game shows that the link is stronger in CONT (Pearson correlation coefficient=0.463 with a significance level p>0.99), EXO (Pearson correlation coefficient=0.401 with a significance level p>0.99) and ENDO (Pearson correlation coefficient=0.417 with a significance level p>0.99) treatments while in CONT-N, the link is negative and close to zero and it is not significant (Pearson correlation coefficient=-0.023 with a significance level p=0.487). Although there are higher levels of transfers in ENDO treatment, reciprocity is more pronounced in CONT treatment. We can deduce that in ENDO treatment, the transfer relationship follows similarity more than reciprocity.

Participants are asked about the transfer they expected after they have made a transfer and before the opponent made a transfer (Figure 4.2.5). When we look at the mean transfer and expectations in CONT and EXO treatments, there is clearly a difference and expectations are mostly higher on average than the real transfers made. We can also deduce that from the difference of transfers between the first and second players. The first players made higher transfers in expectation of higher transfers in return by the second players. However, in ENDO treatment, although expectations are mostly higher, this time the level of transfers and expectations are on average very close. In CONT-N, we can not see a general pattern between transfers and expectations.

Rabin (1993) says that if behaviour of others is not yet known, the person responds to expected behaviour. In contrast, our results in CONT-N did not find a clear pattern between expectation and transfer decision in CONT-N treatment. In addition, we see that transfers are close to the expectation in ENDO where the match can be affected by participant preference, although the transfer is made with high expectations in CONT and EXO. This result shows that a more stable expectation-realization occurs when the person can choose his partner.

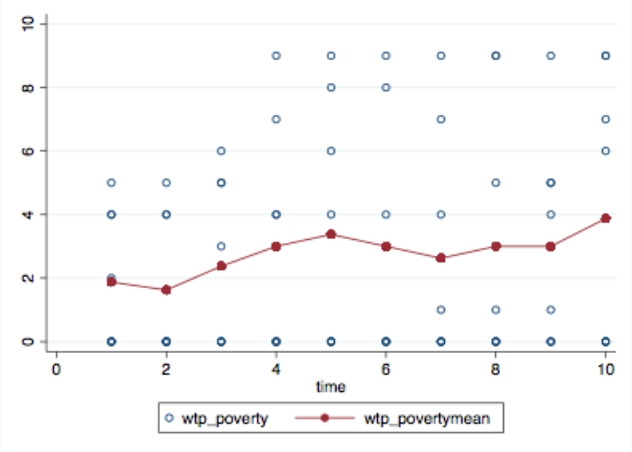
7- Figure 4.2.5 Comparison of Transfer Made and Transfer Expected in Poverty Treatments



Our results are consistent with the results of Berg, Dickhaut, and McCabe (1995), Bolle and Ockenfels (1990) and Fehr, Kirchsteiger and Riedl (1993) using a sequential structure that allows rewarding and punishing the first mover. These studies observe some degree of cooperation and efficiency that contradicts Hypothesis 1. Likewise, in our study, payoffs in CONT, EXO and ENDO treatments are very close to the efficient gain and there are signs of reciprocity; a positive relationship has been observed between action and reaction.

In ENDO treatment, participants chose their WTP greater than 0 half of the time. The average WTP is 2.775. WTP levels in ENDO treatment are illustrated by Figure 4.2.6. Another observation is that there is an increasing trend in mean WTP levels through time starting from an average WTP of 2 to 4. This is due to the fact that in the beginning WTP levels were at most 6 and as of 4th round we see that participants were willing to pay up to 10. This can be explained by the following observation: higher transfer levels at the beginning of this treatment. They may have stimulated the willingness to pay for in-group matching.

8- Figure 4.2.6 WTP in Poverty Treatments



4.3. Pension Game

A total of 48 students participated in the pension game experiment and played in groups of 8 the four treatments of the pension game described in Section 3.2.2. We can see in Figure 4.3.1 the average transfer levels in these treatments.

Result 5 The participants have decided on a transfer to their opponent 420 times and 129 of these times (30.71%), participants have given 0 and 291 times (69.29%), they have made positive transfers. Nearly 50% of participants have made transfers in the interval [1,3]. The average transfer level (averaged over all six sessions) is 1.91.Average earnings over all four treatments is 17.81. Only 2 players out of 42 players (4.8%) made no transfer at all. We can conclude that participants did not behave generally in a strategic way.

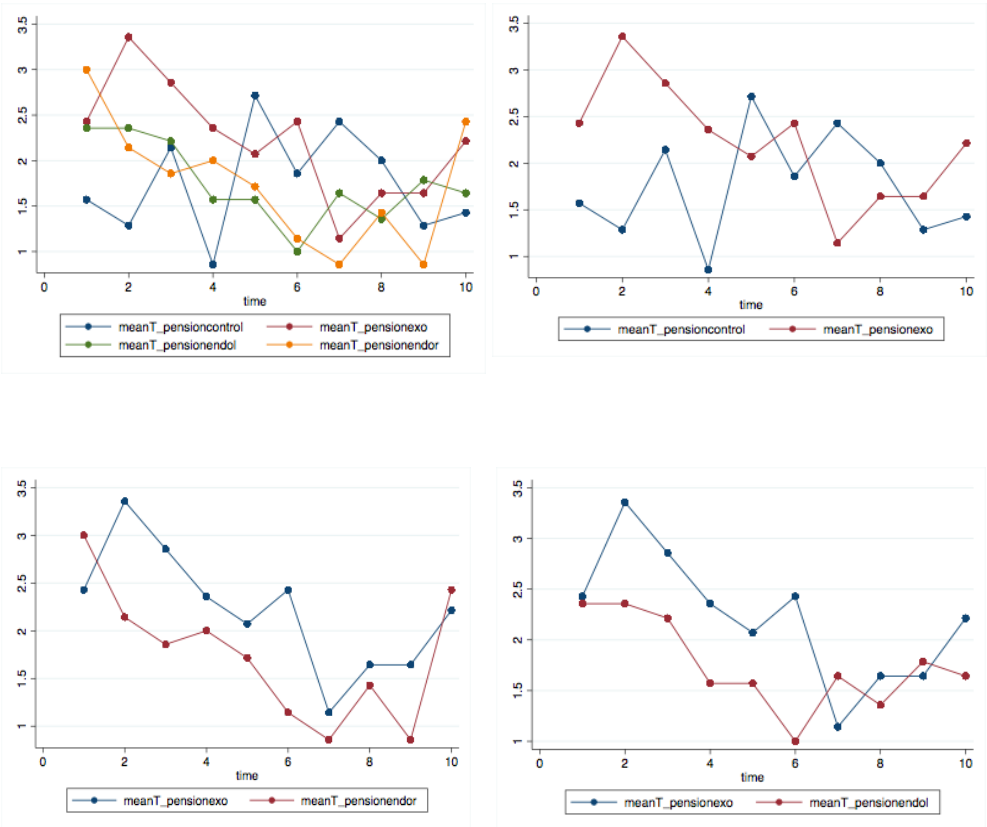
6- Table 4.3.1 Share of Transfers in Pension Treatments

	Share of each transfer level (%) in pension treatments			
Transfer	Control	EXO	ENDO-L	ENDO-R
0	31.43	27.86	29.29	38.57
1	22.86	20.00	24.29	12.86
2	18.57	11.43	15.71	18.57
3	10.00	7.86	17.86	11.43
4	8.57	15.71	5.71	7.14
5	2.86	12.86	2.86	8.57
6	2.86	2.14	1.43	1.43
7	2.86	2.14	2.86	1.43

A general result is the generally higher levels of mean transfers in EXO treatments compared with ENDO-L and ENDO-R treatments. Generally higher levels of transfers are made in EXO treatment (Figure 4.3.1). Comparing CONT treatment with EXO by looking at Table 4.3.1, we can see that low levels of transfers are more frequent in CONT treatment. Considering that all average transfer levels are close at the beginning, the statement of Currarini and Mengel (2016) on harsh

punishments is observed in this experiment. In particular, in ENDO and EXO treatments, transfer levels start more, and mean transfers have a tendency to decline over time. This may be due to the harsh punishment for who initially gave low. Especially in ENDO-R treatments where they choose to be matched with a partner from the same group when they are receiving transfers, we generally see lower levels of transfers (Table 4.3.1).

9- Figure 4.3.1 Comparison of Transfer Levels in Pension Treatments



Result 6 The analysis of the link between the average transfer of by the antecedent (T_t) and the subsequent (T_{t+1}) shows that from the first player to the eight player there is no common pattern. First, the link is significantly negative between the first and second player (Pearson correlation coefficient=-0.366 with a significance level greater than 0.95), then it is positive for the rest of the sequence and significant except for the link between the sixth and seventh player with a weak relationship (Pearson correlation coefficient=0.017 with a significance level of 36%), the relationship is strongest between the fourth and fifth player (Pearson correlation coefficient=0.571 with a significance level greater than 0.95). As a general remark for the pension game, we can say that reciprocal behaviour emerges in the middle of the sequence and fades near the extremities. In general, the link is positive and insignificant (Pearson correlation coefficient=0.060 and the p value is 0.3860).

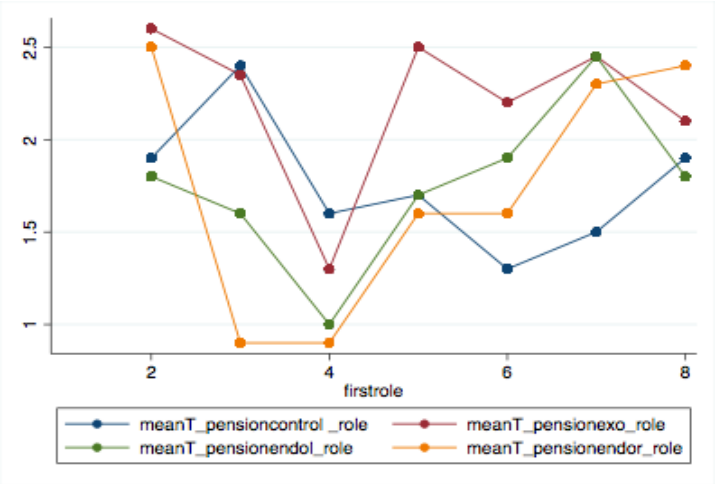
As for the strategic decision of a player in a certain position in the pension game, in CONT, EXO, ENDO-L and ENDO-R treatments, we see that at the beginning of the line the transfer choice is more uniform however, near the end of the line, the transfer choices are more concentrated near the extremities of the interval. Table 4.3.2 shows the share of each type of player that has made a particular level of transfer in that type of player population.

In Figure 4.3.2, we see a clear difference in transfer levels between EXO and ENDO-L, ENDO-R treatments. Transfer levels are higher in EXO treatment than ENDO-L treatment and ENDO-R as well except for the player at the 7th position. This result is similar to the poverty game results.

7- Table 4.3.2 Comparison of Average Transfer by Players in Different Roles in Pension Treatments

Transfer	Player 2	Player 3	Player 4	Player 5	Player 6	Player 7
0	30	20	30	30	30	40
1	20	20	10	10	50	30
2	20	20	40	30	0	10
3	10	10	10	20	10	10
4	10	10	10	10	0	0
5	0	10	0	0	10	0
6	10	10	0	0	0	0
7	0	0	0	0	0	10

10- Figure 4.3.2 Comparison of Transfer made by Players in Different Roles in Pension Treatments

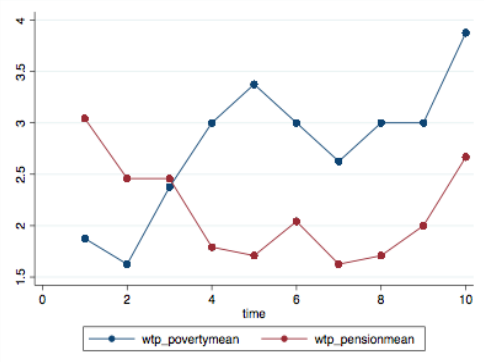


In ENDO treatment, participants chose a WTP greater than 0 more than half of the time (60%). The average WTP is 2.15 while this average is 2.18 for ENDO-L treatment and 2.675 for ENDO-R treatment. All averages are lower

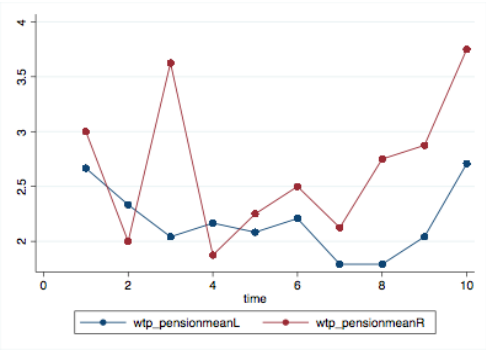
than the average WTP in poverty treatment. Figure 4.3.3 shows mean WTP in pension treatment through rounds. Compared with the upward trend of WTP through time in the poverty experiment, here in the pension experiment WTP is higher at the beginning then declines slowly and then increases back. This result might be linked with reaction to the transfer decisions in this treatment as we see a similar trend.

11- Figure 4.3.3 WTP in Pension Game

12- Figure 4.3.4 WTP in Pension and Poverty Games



13- Figure 4.3.5 WTP in ENDO-L and ENDO-R Treatments (Time)



14- Figure 4.3.6 WTP in ENDO-L and ENDO-R Treatments (Role)

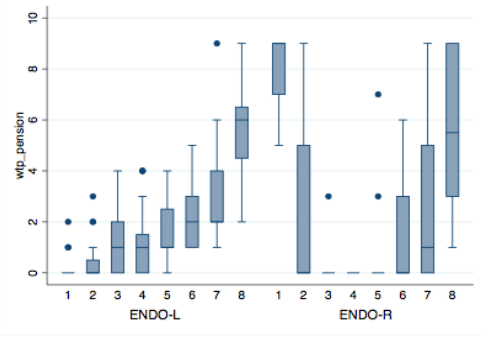


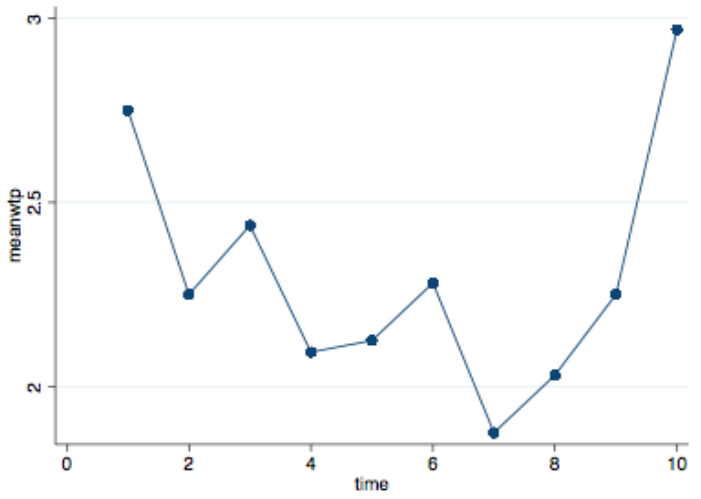
Figure 4.3.5 and Figure 4.3.6 provide a comparison of choices of WTP in different ENDO treatments. In treatment ENDO-L, participants show their willingness to be matched with a player of the same group from whom they will receive transfers and in treatment ENDO-R, participants show their willingness to be matched with a player of the same group to whom they will make transfers. In the first half of the game, the average WTP in ENDO-R is unstable but the average WTP in ENDO-L falls and in the second half of the game, WTP in ENDO-R is definitely higher than that in ENDO-L (Figure 4.3.5). Participants apparently learn to care about where their transfer will end up.

4.4. Homophily and In-group bias

4.4.1. Homophily

We have in Figure 4.4.1.1, average levels of WTP throughout endogenous treatments in poverty and pension games. These average levels are mostly in the interval [2,3] and the change in time looks like a parabola. We can interpret higher WTP levels in the last rounds as follows: participants knowing that the game will end soon may have donated higher WTP levels for an in-group matching expecting more reciprocity.

15- Figure 4.4.1.1 Average WTP Levels



Definition 1 The choice of WTP greater than zero does not affect the utility negatively and the revelation of WTP expresses the desire for in-group matching. As homophily is a desire to interact with similars, we can define a **strictly homophilous agent** as an agent with a strictly positive willingness to pay for an in-group match and a **neutral agent** as an agent who has a willingness to pay zero. A **weakly homophilous agent** has a positive willingness to pay i.e. WTP may sometimes be zero for a weakly homophilous agent.

Participants generally paid to match partners from the same group. Only 3 participants out of 32 participants who have played endogenous matching treatments made 0 payments (9.375%). 2 participants made a payment only once and 6 participants made a payment only twice. In the poverty game, there are 2 neutral players (%25) and 3 strictly homophilous players (25%). In the pension game, there is only 1 neutral player (4%) and 4 strictly homophilous agents (17%). Weak homophily is more of a characteristic of agents in pension treatment.

Result 7 Nearly 10% of the participants playing endogenous matching treatments are neutral. We can say that the other 90% are weakly homophilous and of all participants, %19 are strictly homophilous. Regarding the definition of homophily, the result that there are 90% of agents interested in being matched with a participant from the same group, is consistent with Hypothesis 3a. The average WTP levels are also higher for strictly homophilous agents confirming that they are more willing to be matched with an opponent of the same group.

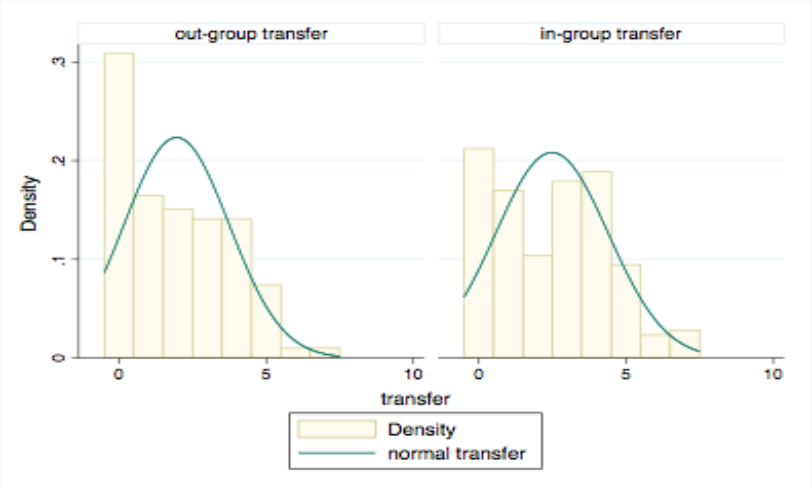
Remember that WTP levels are not affecting game payoffs or earnings at the end of the experiment.

4.4.2. In-group bias in exogenous and endogenous treatments

Each participant plays poverty and pension games either with an opponent from the same group (in-group matching) or with a participant from the other group (out-group matching). Although homophily is seen in the preference to interact with one's own group, in-group bias is seen in the difference of behaviour towards one's own group and other groups. Then in-group bias can be seen by the comparison of the behaviour when matched with a participant from the same group and the behaviour when matched with an opponent from the other group.

Definition 2 In-group bias is the difference of behaviour in the context of in-group and out-group matches. The average behaviour of transferring agents under in- and out-group matching can be calculated. In-group bias is taken to be the difference between these measures (Currarini and Mengel, 2016). In endogenous treatment, other categories are added as a participant has an impact on the selection of the opponent.

16- Figure 4.4.2.1 In-Group and Out-Group Transfer Distributions



Result 8 Participants transferred on average 2.481 in in-group matches and 1.953 in out-group matches. Figure 4.4.2.1 illustrates the distribution of transfers in both cases. In Figure 16, 0 transfer was the most frequent level for out-group matches. According to the Wilcoxon rank-sum (Mann-Whitney) test, participants made higher transfers in in-group matches compared with out-group matches with probability p=0.002. This result is in line with Hypothesis 3b. Decisions were influenced by identity in the presence of grouping and therefore a more favourable attitude has been observed when participants played with similars.

In EXO treatment, the average transfer in in-group matches was 2.406 and in out-group matches, participants made on average 2.298 of transfer[6], the difference between transfers in both cases is not significant according to the Wilcoxon rank-sum (Mann-Whitney) test with a p value of 0.667 and in ENDO treatment, they have transferred on average 2.543 to their own group and 1.707 to the other group, the difference between transfers in both cases significant according to the Wilcoxon rank-sum (Mann-Whitney) test with a p value of 0.0002.

A comparison of EXO and ENDO treatments reveal that in ENDO treatments, participants made on average slightly higher transfers in in-group matches and the difference is not significant according to the Wilcoxon rank-sum (Mann-Whitney) test with a p value of 0.706 and lower transfers in out-group matches than in EXO treatments and according to the Wilcoxon rank-sum (Mann-Whitney) test, this difference is significant with a p value of 0.007.

8- Table 4.4.2.1 Comparison of Average Transfers by In-group and Out-group Matching in Different Treatments

		Poverty game			Pension game			
	All	Total	EXO	ENDO	Total	EXO	ENDO-L	ENDO-R
In-group transfer	2.48	2.75	2.58	2.94	2.33	2.27	2.25	2.7
Out-group transfer	1.95	2.64	2.56	2.70	1.69	2.18	1.37	1.36

[6] The results are for the overall experiment. For average in-group and out-group transfers for poverty and pension games, see Table 4.4.2.1.

As for the comparison between ENDO-L and ENDO-R treatments, the average transfer in in-group matches was 2.25 and in out-group matches, participants made on average 1.373 of transfers in ENDO-L treatment and these levels were 2.7 and 1.36 for ENDO-R treatment (Table 4.4.2.1).

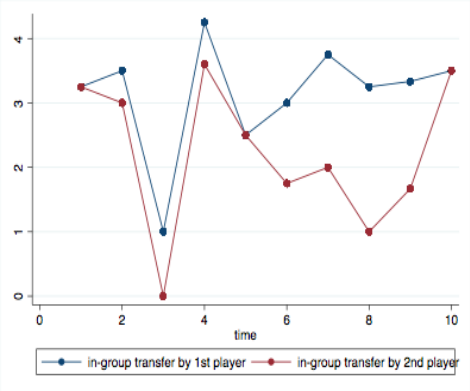
Result 9 We see that in both treatments, transfers to similars were significantly higher than transfers to others. This shows that a treatment where they can reveal preferences for similars is the treatment where they also show different behaviour to similars and others. We can see that in this treatment, the difference in behaviour is more pronounced than in EXO treatments. Moreover compared with ENDO-L treatment, transfers in in-group matches were higher in ENDO-R treatment where participants were able to affect the participants from whom they will receive transfers and compared with ENDO-R treatment, transfers in out-group matches were slightly higher in ENDO-L treatment where participants were able to affect the participants to whom they will make transfers. This may result from their belief of differentiating their transfers across different partners. They are expecting the same from others to hold the same belief and invest in a partner from the same group to receive transfers from.

As for the reciprocity of participants when they played with their similar (Hypothesis 3c), we have analysed the link between the average transfer of by the antecedent (T_t) and the subsequent (T_{t+1}) by similarity.

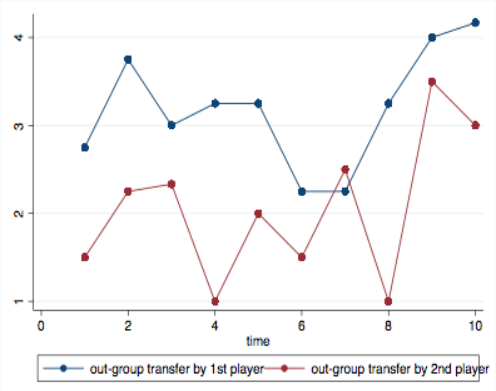
Result 10 First in the poverty experiment, the correlation between the transfer of the first player and the second player in case of in-group matches is significantly positive (Pearson correlation coefficient=0.725 with a significance level $p>0.99$) and in case of out-group matches, it is lower but still significant

(Pearson correlation coefficient=0.482 with a significance level p>0.99). Figure 4.4.2.2 and Figure 4.4.2.3 show mean transfers averaged over all rounds for in-group and out-group matches. This result confirms Hypothesis 3c in the poverty game as the reciprocal behaviour is more pronounced in interactions with similars.

17- Figure 4.4.2.2 In-Group Mean Transfer by First and Second Player in Poverty Treatment



18- Figure 4.4.2.3 Out-Group Mean Transfer by First and Second Player in Poverty Treatment



Result 11 Second in the pension experiment, the correlation between the transfer of the previous player and the next player in case of in-group matches is positive but very insignificant (Pearson correlation coefficient= 0.033 with a probability p=0.774) and in case of out-group matches, it is positive but again insignificant (Pearson correlation coefficient=0.036 with a probability p=0.6827). The reciprocal relationship is very weak and insignificant in the pension game

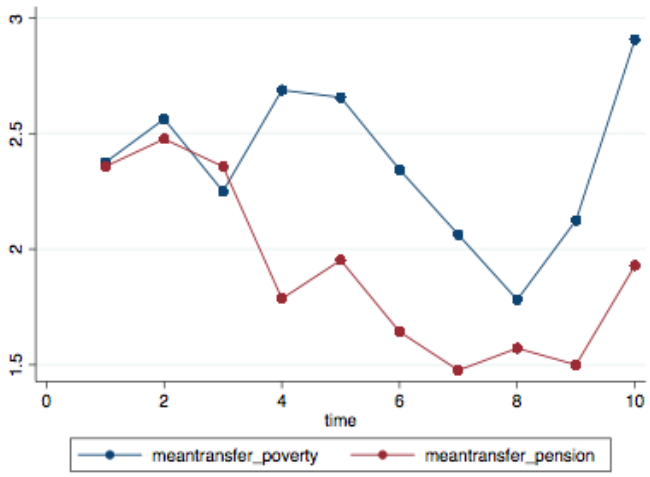
.

4.4.3. Bilateral versus overlapping structure

When we compare poverty and pension treatments, we see that average levels of transfers through the rounds follow a similar trend although the levels are generally lower in pension treatments (see below Figure 4.4.3.1). The mean transfer is 2.38 in poverty treatments while the mean transfer falls to 1.91 in pension treatments. Contrary to Heijden et al. (1998), the transfer levels in the pension experiment are lower than in the poverty experiment.

Result 12 A general result is that cooperative outcome is more likely in a bilateral setting than an overlapping setting.

19- Figure 4.4.3.1 Comparison of Transfer Levels in Poverty and Pension Games



We can use the definition of weak reciprocity, altruism and negative reciprocity to make an econometric estimation to make an overall analysis on the factors influencing reciprocal behaviour through all treatments. We have estimated a logistic regression where the dependent variable is first reciprocity

(1 if the player is weakly reciprocal and 0 if the player is not), second altruism (1 if the player is altruistic and 0 if the player is not) and then negative reciprocity (1 if the player is negatively reciprocal and 0 if the player is not) and the independent variables are socio demographic characteristics along with environmental consciousness, risk aversion, belief and game related factors. The results of the estimation are given in Appendix E (Table E.1).

9- Table 4.4.3.1 Logit Regression Results: In-group Bias for the Experiment in General *** 1%,** 5%,* 10%

VARIABLES	(1) reciprocity	(2) altruism	(3) negative reciprocity
2.game	-0.589	-0.899**	-0.937*
	(0.406)	(0.352)	(0.532)
gpa	-0.447**	-0.164	0.333*
	(0.174)	(0.137)	(0.181)
2.income	-1.154***	-0.667**	1.808***
	(0.396)	(0.337)	(0.650)
3.income	-1.368***	-1.395***	1.653**
	(0.487)	(0.412)	(0.646)
6.income	-0.113	2.784**	-2.271
	(0.666)	(1.120)	(1.617)
3.hincome	-3.048***	-1.280*	2.350**
	(0.968)	(0.672)	(1.094)
4.hincome	-1.726**	-1.391**	1.294
	(0.810)	(0.654)	(1.047)
6.hincome	-1.321*	-0.938	0.840
	(0.689)	(0.576)	(0.933)
2.envcons2	-3.583***	-2.962***	4.226***
	(1.217)	(0.917)	(1.550)
3.envcons2	-2.539**	-0.684	1.695
	(1.206)	(0.899)	(1.359)
3.envcons3	2.981*	3.985***	
	(1.555)	(1.532)	
5.envcons3	0.680	1.851*	-2.787*
	(1.112)	(1.050)	(1.670)
4.belief	0.702	1.604***	-1.691
	(0.695)	(0.621)	(1.242)
same	0.602**	0.121	-0.369
	(0.260)	(0.210)	(0.347)
Constant	4.440**	2.017	-3.440
	(1.762)	(1.497)	(2.136)
Observations	380	560	351

We see that the behaviour of players certainly are affected by the matching structure. Participants were likely to be less altruistic in the pension game

(overlapping structure) compared with the poverty game (bilateral structure). As far as the in-group behaviour is concerned, we can see that participants were more reciprocal to their opponents if they are from the same group.

The impacts of household income and income are also worth mentioning. Higher income groups were less reciprocal compared with the lowest income group. The participants were mostly students and as their success at school increases, they have become less reciprocal as well.

In ENDO treatment, there are other categories of behaviour added as the preference for interacting with similars can have an impact on the transfer behaviour. We have made logistic estimations by including WTP to account for this impact where the dependent variable is first reciprocity (1 if the player is weakly reciprocal and 0 if the player is not) and second altruism (1 if the player is altruistic and 0 if the player is not). The results of the estimation are given in Appendix E (Table E.2) and in order to compare we made estimations only taken into account ENDO treatment data. The introduction of WTP affects the magnitude but not the sign of the in-group bias.

We have found higher transfers in exogenous matching treatment, however when we look at the endogenous setup we see even higher transfers in in-group matches compared with lower transfers. As there is a very high punishment of the out-group partners in endogenous matching, the average result is lower than the exogenous matching treatment. There is a reward and punishment mechanism at work when agents have an impact on the group of their partner and like Currarini and Mengel (2016), we see the impact of this mechanism on the transfer decisions where the aggregate in-group bias either decreases in the

transition from exogenous to endogenous matching and in pension treatment we see that in-group bias vanishes (Table 4.4.3.2 and Table 4.4.3.3).

10- Table 4.4.3.2 In-group Bias and Homophily ∗∗∗ 1%, ∗∗ 5%, ∗ 10%

VARIABLES	all reciprocity	poverty reciprocity	pension reciprocity
same	0.846**	1.872*	0.647
	(0.390)	(1.076)	(0.433)
WTP	0.269**	0.403	0.253**
	(0.110)	(0.297)	(0.120)
Observations	178	32	146
Number of player	25	6	19

11- Table 4.4.3.3 In-group Bias and Homophily in ENDO Treatment ∗∗∗ 1%, ∗∗ 5%, ∗ 10%

VARIABLES	(1) reciprocity	(2) altruism	(3) reciprocity	(4) altruism
same	1.303***	0.488	1.014**	0.284
	(0.400)	(0.305)	(0.421)	(0.323)
wtp			0.300**	0.155**
			(0.119)	(0.0717)
Constant	-3.483	-11.72	-8.591	-13.04
	(9.866)	(1,650)	(10.64)	(1,034)
Observations	220	320	220	320

CONCLUSION

Our study explored homophily and in-group bias, two common types of behaviour that involve some degree of discrimination in social interactions in the context of cooperative equilibrium. We argue that grouping creates belonging and identity which directly shapes individuals' social behaviours. We studied the effect of in-group bias and homophily on cooperative equilibrium through their effects on reciprocity in poverty and pension games. We search for answers on how reciprocity is influenced by identity, how reward and punishment develop in the presence of grouping, and finally whether belonging encourages cooperation.

We matched the participants in pairs and mutually in the poverty game and in the pension game sequentially. There are 4 procedures for both poverty and pension games in our online experiment with the participation of 80 university students and graduates. In both poverty and pension games, we examine transfer behaviour by comparing grouping procedures with the control procedures. In the pension game experiment, the matching structure changes from pair match to sequential match.

We found evidence for the presence of homophily (group selection agents when endogenous matching is allowed), even though preferential matching does not have a strategic benefit. Based on the intensity of the matching requests, given the definitions of strong homophily, weak homophily and neutrality given in Section 4.3.1., we have shown that a high proportion of participants was weakly homophilous. Moreover, we showed that strong homophilous agents who show a desire to match in all cases have more willingness to pay. Although

productive gains from cooperation were realized to a great extent in our study, grouping further contributed to the cooperative outcome.

According to our general results, the participants did not behave strategically in pair matches and in sequential matches. An observation that is consistent with Heijden et al. (1988b) is that individuals have achieved a high level of social efficient transfer by not showing strict rationality. Besides, our results are more likely to be closer to the gains from social efficient transfer than Heijden et al. (1988b). This efficiency gets stronger in the bilateral matching structure contrary to Heijden et al. (1998b). We found evidence of reciprocity in all procedures of poverty game except the non-information procedure and showed that the knowledge condition makes a significant difference. The lack of information of the transfer given creates a simultaneous move structure. If there is information priority, there is time priority and the first mover transfers higher in anticipation of higher transfer return. The results we have obtained from the information condition procedure regarding the decisions of the first and second mover have provided evidence of reciprocity. There is evidence for reciprocity in the bilateral matching structure as long as the information condition is satisfied.

We also show that the transfer amounts are not affected by expectations. Contrary to Rabin (1993) claiming that there is a response to expected behaviour when others' behaviour is unknown, we could not find a clear relationship between expectation and transfer decision in our procedure without information priority. Although we generally do not find a pattern between expected and actual transfers, we found that a more stable "expectation-realization" occurs when one can choose his partner.

With reference to the weak definition of reciprocity, we analysed the correlations between previous and subsequent transfer decisions for each non-zero transfer. We demonstrated the impact of the matching structure on transfer decisions and cooperative outcome. We found that the participants were more likely to gain from the cooperative efficient outcome in bilateral matching structure rather than overlapping matching structure. The results differ significantly from bilateral and overlapping matching structure, and we showed that when the matching was overlapping, the participants were less reciprocal and generous. As redistributive pension schemes are used in most countries, this has implications for several important policy dimensions in particular. The relatively less reciprocity result of the overlapping matching mechanism shows that intergenerational transfer systems can clearly suffer from a reliability problem. A commitment is needed that ensures that the working generation that finances current retirees will be funded by future generations when they retire.

We reveal that grouping makes a significant difference in both matching structures and any circumstances. The presence of grouping in both matching structures increases the transfer levels. On average, the positive results we find in grouping are related to similarity, but when we look at the effect of reciprocity, we see that there is a reward and punishment mechanism when group preference is specified. We found higher transfers in exogenous matching treatments, but when we look at endogenous setup, we see even higher transfers in in-group matches and much lower transfers in out-group transfers. There is a preference for what is similar and there are different behaviours towards similar and unsimilar. Moreover, the artificial grouping resulted in stronger reciprocity in in-group matches compared to out-group matches in sequential matching structure. This result is also in line with studies showing that in-group bias emerges as punishment for in-group negative behaviour (Shinada et al., 2004; Mendoza et al., 2004) and positive reciprocity toward group members through rewarding discloses in-group favouritism (Chen and Li, 2009).

In endogenous procedures in which group preference is specified, we can explain the lower levels of transfer compared to exogenous procedures by the individuals' psychological pressure resulting from revealing preference. In addition, we can say that the initially high levels of transfers in sequential matching structures in exogenous procedures and endogenous procedures tend to decline towards the end of time as a result of harsh punishment for low given transfers. Considering also the high amount of transfers in the in-group matches, the attitude towards the similar is more pronounced in bilateral structures as a result of the fact that belonging leads to in-group favouritism through social comparison in more direct interactions as suggested Hogg (2002) which is a comprehensive review about social identity theory focus on the view that interpersonal social comparison would deepen the formation of in- and out-group difference and the identity through self-categorization.

Overall, cooperative outcome is more likely in a bilateral setting than an overlapping setting in line with the findings of Güth and van Damme (1998) and unlike Heijden et al. (1998b). Since the relationships are more direct in the poverty game, compared to the indirect relationships in the pension game, more transfers have been made and a more functional reward-punishment mechanism has emerged.

REFERENCES

Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The Authoritarian Personality.* New York: Harper and Row.

Akerlof, G. A., & Kranton, R. E. (2000). Economics and Identity. *The Quarterly Journal of Economics, 115*(3), s. 715-753.

Alesina, A., Baqir, R., & Easterly, W. (1999). Public Goods and Ethnic Divisions. *The Quarterly Journal of Economics, 114*(4), s. 1243-1284.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., & Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth, 8*(2), s. 155-194.

Aristotle. (1937). *Aristotle, Problems, Books 32-38 and Rhetorica Ad Alexandrum (Loeb Classical Library 317).* (T. E. Page, E. Capps, W. H. Rouse, L. A. Post, E. H. Warmington, Dü, W. S. Hett, & H. Rackham, Çev.) London and Cambridge, Massachusetts: William Heinemann and Harvard University Press.

Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, Reciprocity, and Social History. *Games and Economic Behavior, 10*(1), s. 122-142.

Bohnet, I., Herrmann, B., & Zeckhauser, R. (2010). Trust and The Reference Points for Trustworthiness in Gulf and Western Countries. *Quarterly Journal of Economics, 125*(2), s. 811-828.

Bolle, F., & Ockenfels, P. (1990). Prisoners' Dilemma as a Game with Incomplete Information. *Journal of Economic Psychology, 11*(1), s. 69-84.

Bott, H. (1928). Observation of play activities in a nursery school. *Genetic Psychology Monographs, 4*(1), s. 44-48.

Budescu, D. V., Suleiman, R., & Rapoport, A. (1995). Positional Order and Group Size Effects in Resource Dilemmas with Uncertain Resources. *Organizational Behavior and Human Decision Processes, 61*(3), s. 225-238.

Cabrales, A., Nagel, R., & Rodriguez Mora, J. V. (2011). It is Hobbes, not Rousseau: an experiment on voting and redistribution. *Experimental Economics, 15*(2).

Calvo-Armengol, A., & Jackson, M. (2004). The Effects of Social Networks on Employment and Inequality. *American Economics Review, 94*(3), s. 426-454.

Centola, D. (2011). An Experimental Study of Homophily in the Adoption of Health Behavior. *Science, 334*(6060), s. 1269-1272.

Charness, G., & Rabin, M. (2002). Understanding Social Preferences With Simple Tests. *Quarterly Journal of Economics, 117*(3), s. 817-869.

Chen, D. L., Schonger, M., & Wickens, C. (2016). oTree - An open-source platform for laboratory, online, and field experiments. *Journal of Behavioral and Experimental Finance, 9*(1), s. 88-97.

Chen, Y., & Li, S. X. (2009). Group Identity and Social Preferences. *American Economic Review, 99*(1), s. 431-457.

Currarini, S., & Jesse Matheson, F. V. (2016). A Simple Model of Homophily in Social Network. *European Economic Review, 90*(1), s. 18-39.

Currarini, S., & Mengel, F. (2016). Identity, Homophily and In-group Bias. *European Economic Review, 90*(C), s. 40-55.

Currarini, S., Jackson, M. O., & Pin, P. (2009). An Economic Model of Friendship: Homophily, Minorities, and Segregation. *Econometrica, 77*(4), s. 1003-1045.

Currarini, S., Jackson, M. O., & Pin, P. (2010). Identifying the Roles of Race-based Choice and Chance in High School Friendship Network Formation. *Proceedings of the National Academy of Sciences, 107*(11), s. 4257-4861.

Dufwenberg, M., & Gneezy, U. (1996). Efficiency , Reciprocity and Expectations in an Experimental Game. *CentER Discussion Paper, 1996*(79), Microeconomics.

Easterly, W., & Levine, R. (1997). Africa's Growth Tragedy: Policies and Ethnic Divisions. *The Quarterly Journal of Economics, 112*(4), s. 103-1250.

Elster, J. (1989). *The Cement of Society.* Cambridge: Cambridge University Press.

Everett, J. A., Faber, S. F., & Crockett, M. (2015). Preferences and Beliefs in In-group Favoritism. *Frontiers in Behavioral Neuroscience, 9*(15), s. 1-21.

Fehr, E., & Fischbacher, U. (2004). Social Norms and Human Cooperation. *Trends in Cognitive Sciences, 8*(4), s. 185-190.

Fehr, E., Kirchsteiger, G., & Riedl, A. (1993). Does Fairness Prevent Market Clearing? An Experimental Investigation. *The Quarterly Journal of Economics, 108*(2), s. 437-459.

Gaechter, S., & Herrmann, B. (2009). Reciprocity, culture and Human Cooperation: Previous insights and a new cross-cultural experiment. *Philosophical Transactions of the Royal Society B, 364*(1518), s. 791-806.

Gouldner, A. W. (1960). The Norm of Reciprocity: A Preliminary Statement. *American Sociological Review, 25*(2), s. 161-178.

Güth, W., & van Damme, E. (1998). Information, Strategic Behavior and Fairmess in Ultimatum Bargaining-An Experimental Study. *Journal of Mathematical Psychology, 42*(2-3), s. 227-247.

Güth, W., Ockenfels, P., & Wendel, M. (1993). Efficiency by Trust in Fairness? Multiperiod Ultimatum Bargaining Experiments with an Increasing Cake. *International Journal of Game Theory, 22*(1), s. 51-73.

Güth, W., Offerman, T., Potters, J., Strobel, M., & Verbon, H. A. (2002). Family Transfers Crowded Out by Public Transfers? *Scandinavian Journal of Economics, 104*(4), s. 587-604.

Hamilton, W. D. (1964). The Genetical Evolution of Social Behaviour I & II. *Journal of Theorical Biology, 7*(1), s. 1-52.

Hammond, P. J. (1975). Charity: Altruism or Cooperative Egoism? E. S. Phelps (Dü.) içinde, *Alturism, Morality, and Economic Theory* (s. 115-133). New York: Sage.

Heijden, E. C., Nelissen, J. H., Potters, J. J., & Verbon, H. A. (1998a). Transfers and the effect of monitoring in an overlapping-generations experiment. *European Economic Review, 42*(7), s. 1363-1391.

Heijden, E. C., Nelissen, J. H., Potters, J. J., & Verbon, H. A. (1998b). The poverty game and the pension game: The role of reciprocity. *Journal of Economic Psychology, 19*(1), s. 5-41.

Heijden, E. C., Nelissen, J. H., Potters, J. J., Potters, J. J., & Verbon, H. A. (1997). Intergenerational Transfers and Private Savings: an Experimental Study. *Kyklos, 50*(2), s. 207-220.

Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup Bias. *Annual Review of Psychology, 53*(1), s. 575-604.

Hogg, M. A. (2002). Social Identity and Social Comparison. M. A. Hogg, & G. H. Vaughan içinde, *Social Psychology* (s. 401). Prentice Hall.

Jackson, M. O., & Golub, B. (2012). How Homophily Affects the Speed of Learning and Best-response Dynamics? *The Quarterly Journal of Economics, 127*(3), s. 1287-1338.

Jackson, M. O., & Lopez-Pintado, D. (2013). Diffusion and Contagion in Networks with Heterogeneous Agents and Homophily. *Network Science, 1*(1), s. 49-67.

Jordan, J. J., McAuliffe, K., & Rand, D. G. (2014). Third-Party Punishment is Motivated by Anger and is not an Artifact of Self-Focused Envy or the Strategy Method. *Available at SSRN*.

Kerr, N. L. (1995). Norms in social dilemmas. D. Schroeder (Dü.) içinde, *Social Dilemmas. Perspectives on Individual and Groups* (s. 31-48). Westport: Praeger.

Knafo, A., Zahn-Waxler, C., Hulle, C. V., Robinson, J. L., & Rhee, S. H. (2008). The Developmental Origins of a Disposition Toward Empathy: Genetic and Environmental Contributions. *Emotion, 8*(6), s. 737-752.

Kotlikoff, L. J., Persson, T., & Svensson, L. E. (1988). Social Contracts as Assets: A. *American Economic Review, 78*(4), s. 662-677.

Lazarsfeld, P. F., & Merton, R. K. (1954). Friendship as a social process: a substantive and methodological analysis. M. Berger içinde, *Freedom and control in modern society* (s. 18-66). New York: Van Nostrand.

McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a Feather: Homophily in Social Networks. *Annual Review of Sociology, 27*, 415-444.

Mendoza, S. A., Lane, S. P., & Amodio, D. M. (2014). For Members Only. *Social Psychological and Personality Science, 5*(6), s. 662-670.

Mengel, F. (2008). Matching Structure and the Cultural Transmission of Social Norms. *Journal of Economic Behavior & Organization, 67*(1), s. 608-623.

Moll, J., Krueger, F., Zahn, R., Pardini, M., Oliveria-Souza, R. d., & Grafman, J. (2006). Human fronto–mesolimbic networks guide decisions about charitable donation. *Proceedings of the National Academy of Sciences, 103*(42), s. 15623-15628.

Moody, J. (2001). Race, School Integration, and Friendship Segregation in America. *American Journal of Sociology, 107*(3), s. 679-716.

Morris, M. W., Sim, D. H., & Girotto, V. (1995). Time of Decision, Ethical Obligation, and Causal Illusion. D. M. Roderick M. Kramer içinde, *Negotiations as a Social Process* (s. 209-239). Thousand Oaks: Sage.

Myerson, R. B., Pollock, G. B., & Swinkels, J. M. (1991). Viscous Population Equilibria. *Games and Economic Behavior, 3*(1), s. 101-109.

Offerman, T. J., Potters, J., & Verbon, H. A. (2001). Cooperation in an Overlapping Generations. *Games and Economic Behavior, 36*(2), s. 264-275.

Plato. (1926). *Plato, Laws : Books 7-12 (Loeb Classical Library, No. 192)*. (E. Capps, T. E. Page, W. H. Rouse, Dü, & R. G. Bury, Çev.) London and New York: William Heinmann and G. P. Putnam's Sons.

Rabbie, J. M., Schot, J. C., & Visser, L. (1989). Social Identity Theory: A conceptual and empirical critique from the prespective of a behavioural interaction model. *European Journal of Social Psychology, 19*(3), s. 171-202.

Rabin, M. (1993). Incorporating Fairness into Game Theory and Economics. *American Economic Review, 83*(5), s. 1281-1302.

Samuelson, P. A. (1958). An Exact Consumption Loan Model of Interest with or without the Social Contrivance of Money. *Journal of Political Economy, 66*(6), s. 467-482.

Shell, K. (1971). Notes on the Economics of Infinity. *Journal of Political Economy, 79*(5), s. 1002-1011.

Shinada, M., Yamagishi, T., & Ohmura, T. (2004). False Friends Are Worse Than Bitter Enemies. *Evolution and Human Behavior, 25*(6), s. 379-393.

Skopek, J., Schulz, F., & Blossfeld, H.-P. (2011). Who Contacts Whom? Educational Homophily in Online Mate Selection. *European Sociological Review, 27*(2), s. 180-195.

Sugden, R. (2005). *The Economics of Rights, Cooperation and Welfare.* Oxford: Basil Blackwell.

Sumner, W. G. (1906). *Folkways: A Study of the Sociological Importance of Usages, Manners, Customs, Mores, and Morals*. Boston: Ginn and Company.

Tajfel, H., & Turner, J. (1979). An integrative Theory of Intergroup Conflict. W. G. Austin, & S. Worchel içinde, *The Social Psychology of Intergroup Relations* (s. 33-37). Monterey, California: Brooks/Cole.

Tajfel, H., & Turner, J. C. (2004). The Social Identity Theory of Behavior. J. T. Jost, & J. Sidanius (Dü) içinde, *Political Psychology* (s. 276-293). New York: Psychology Press.

Tajfel, H., Billig, M. G., & Bundy, R. P. (1971). Social Categorization and Intergroup Behaviour. *European Journal of Social Psychology, 1*(2), s. 149-178.

Tausch, F., Potters, J., & Rield, A. (2010). Preferences for Redistribution and Pensions: What Can We Learn from Experiments? *IZA Discussion Paper Series, Paper no: 5090*.

Wellman, B. (1926). The school child's choice of companions. *Journal of Educational Research, 14*(2), s. 126-132.

APPENDIX A INSTRUCTIONS OF THE EXPERIMENT IN TURKISH AND ENGLISH

A.1 Instructions in Turkish

A.1.1. Yoksulluk Oyunu Kontrol Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

10 tur yapılacak ve her turda **2 dönem** olacaktır.

Her dönem, rastgele ve anonim olarak başka bir katılımcıyla eşleşeceksiniz. Daha sonra, aranızdan biri ilk dönem Karar Verici olacak ve diğeri Alıcı olacak. İkinci dönemde roller değişecek. Bir başka deyişle, her iki katılımcı hem Karar verici hem Alıcı olacak.

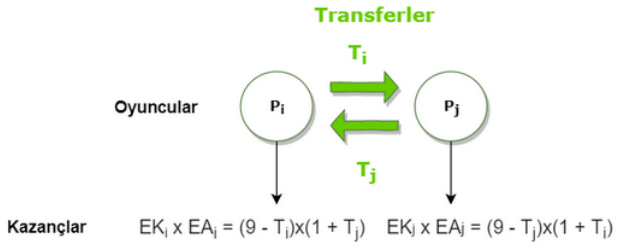
- Karar vericilere 9 birim verilir; Alıcılara ise 1 birim verilir.
- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.

- Karar vericilerin, alıcı olacakları zaman ne kadar transfer yapılacağını bekledikleri hakkında bilgi vermesi istenir.
- Bu bilgi Alıcılar ile paylaşılmaz.

• Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:

- Alıcı EA = 1 + T'ye sahip olur.
- Karar verici EK = 9 - T'ye sahip olur.

Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır. Daha sonra, yeniden rastgele ve anonim olarak başka bir katılımcıyla eşleşirsiniz.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
		0	1	2	3	4	5	6	7
Karar verici olduğunuzda sizden Alıcıya yapılan transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç

dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

B.1.2. Yoksulluk Oyunu Kontrol Prosedürü - Eksik Bilgi

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

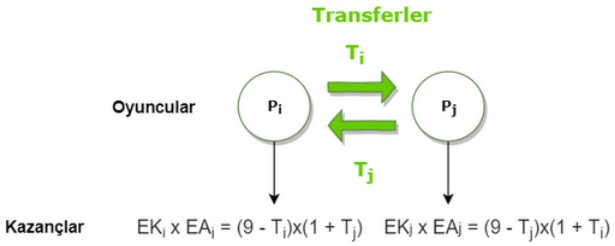
10 tur yapılacak ve her turda **2 dönem** olacaktır.

Her dönem, rastgele ve anonim olarak başka bir katılımcıyla eşleşeceksiniz. Daha sonra, aranızdan biri ilk dönem Karar Verici olacak ve diğeri Alıcı olacak. İkinci dönemde roller değişecek. Bir başka deyişle, her iki katılımcı hem Karar verici hem Alıcı olacak.

- Karar vericilere 9 birim verilir; Alıcılara ise 1 birim verilir.
- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.
  - Karar vericilerin, alıcı olacakları zaman ne kadar transfer yapılacağını bekledikleri hakkında bilgi vermesi istenir.
  - Bu bilgi Alıcılar ile paylaşılmaz.

- Oyuncular tur sonuna kadar transferler hakkında bilgilendirilmeyecektir.
- Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:
  - Alıcı EA = 1 + T'ye sahip olur.
  - Karar verici EK = 9 - T'ye sahip olur.

Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır. Daha sonra, yeniden rastgele ve anonim olarak başka bir katılımcıyla eşleşirsiniz.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
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Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç

dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.1.3. Yoksulluk Oyunu EXO Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

Deneyin başlangıcında, MAVİ ve KIRMIZI olmak üzere iki gruba ayrılacaksınız. Deney boyunca renk grubunuz aynı olacaktır.

10 tur yapılacak ve her turda **2 dönem** olacaktır.

Her dönem, rastgele ve anonim olarak başka bir katılımcıyla eşleşeceksiniz. Daha sonra, aranızdan biri ilk dönem Karar Verici olacak ve diğeri Alıcı olacak. İkinci dönemde roller değişecek. Bir başka deyişle, her iki katılımcı hem Karar verici hem Alıcı olacak.

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- Bu bilgi Alıcılar ile paylaşılmaz.

• Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:

- Alıcı EA = 1 + T'ye sahip olur.
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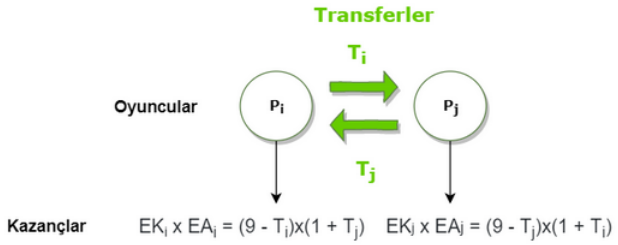
Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır. Daha sonra, yeniden rastgele ve anonim olarak başka bir katılımcıyla eşleşirsiniz.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

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dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.1.4. Yoksulluk Oyunu ENDO Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

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Kararlar ve getiriler

Deneyin başlangıcında, MAVİ ve KIRMIZI olmak üzere iki gruba ayrılacaksınız. Deney boyunca renk grubunuz aynı olacaktır.

Eşleşme rastgele olarak yapılır. Ama her tur, aynı renk grubundan biriyle eşleşme olasılığını arttırma fırsatına sahip olacaksınız. 0-9 arasında ödemek isteyeceğiniz bir tutar seçmeniz istenecektir. Ödemek istediğiniz tutar ne kadar yüksek olursa, transfer yapacağınız zaman aynı renk grubundan biriyle eşleşme şansınız o kadar yüksek olur.

10 tur yapılacak ve her turda **2 dönem** olacaktır.

Her dönem, rastgele ve anonim olarak başka bir katılımcıyla eşleşeceksiniz. Daha sonra, aranızdan biri ilk dönem Karar Verici olacak ve

diğeri Alıcı olacak. İkinci dönemde roller değişecek. Bir başka deyişle, her iki katılımcı hem Karar verici hem Alıcı olacak.

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- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.
  - Karar vericilerin, alıcı olacakları zaman ne kadar transfer yapılacağını bekledikleri hakkında bilgi vermesi istenir.
  - Bu bilgi Alıcılar ile paylaşılmaz.
- Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:
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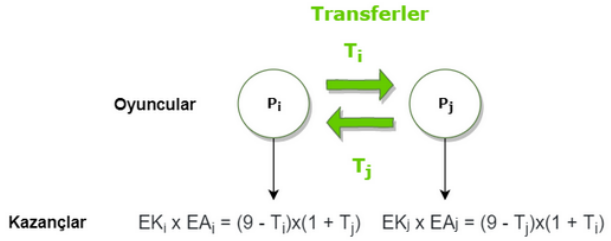
Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır. Daha sonra, yeniden rastgele ve anonim olarak başka bir katılımcıyla eşleşirsiniz.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
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Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.1.5. Emeklilik Oyunu Kontrol Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

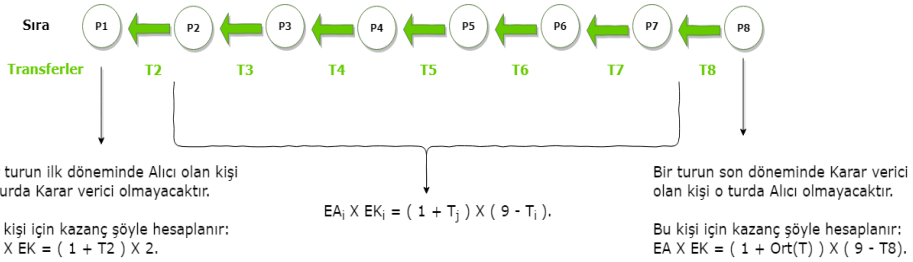
10 tur yapılacak ve her turda **7 dönem** olacaktır.

Her dönem, size 1-8 arasında bir sıra numarası verilecek. Sizin sıranız geldiğinde, Karar Verici olacaksınız ve sırada sizden bir önceki kişi Alıcı olacak. Siz de gelecek dönem Alıcı olacaksınız.

- Karar vericilere 9 birim verilir; Alıcılara ise 1 birim verilir.
- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.
- Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:
  - Alıcı EA = 1 + T'ye sahip olur.
  - Karar verici EK = 9 - T'ye sahip olur.
- Sıradaki herkes, ilk ve sonuncu dışında hem bir Karar verici hem de Alıcı olacaktır.
  - Eğer sıradaki ilk kişi sizseniz, o turda sadece Alıcı olacaksınız, ancak Karar Verici olmayacaksınız. Karar Verici olmanız gereken durum için size 2 birim verilecektir EK = 2.
  - Eğer sıradaki son kişi sizseniz, o turda sadece Karar verici olacaksınız, ancak Alıcı olmayacaksınız. Alıcı olmanız gereken durum için bu turdaki önceki Alıcıların ortalama sonucunu alacaksınız EA = Ortalama (EA).
- Her dönemin Karar alıcısı, önceki dönemlerde yapılan transferler hakkında bilgilendirilecektir.

Her turda yeni bir sıra rastgele belirlenir ve Alıcı ve Karar Verici olarak eşleştiğiniz kişiler değişebilir.

Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır.



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olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

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Sorusu olan var mı?

A.1.6. Emeklilik Oyunu EXO Prosedürü

Giriş (sadece yüksek sesle okunacak)

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Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

Deneyin başlangıcında, MAVİ ve KIRMIZI olmak üzere iki gruba ayrılacaksınız. Deney boyunca renk grubunuz aynı olacaktır.

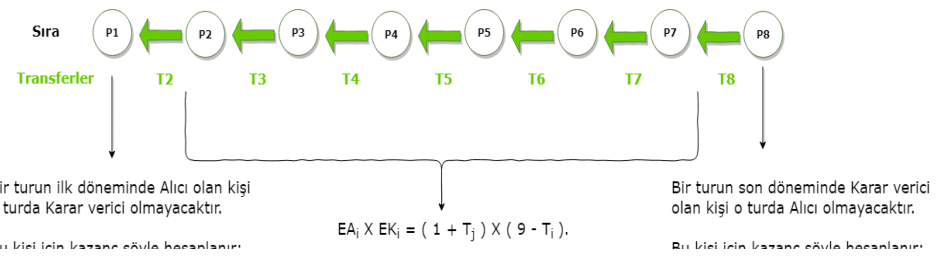
10 tur yapılacak ve her turda **7 dönem** olacaktır.

Her dönem, size 1-8 arasında bir sıra numarası verilecek. Sizin sıranız geldiğinde, Karar Verici olacaksınız ve sırada sizden bir önceki kişi Alıcı olacak. Siz de gelecek dönem Alıcı olacaksınız.

- Karar vericilere 9 birim verilir; Alıcılara ise 1 birim verilir.
- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.
- Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:
  - Alıcı EA = 1 + T'ye sahip olur.
  - Karar verici EK = 9 - T'ye sahip olur.
- Sıradaki herkes, ilk ve sonuncu dışında hem bir Karar verici hem de Alıcı olacaktır.
  - Eğer sıradaki ilk kişi sizseniz, o turda sadece Alıcı olacaksınız, ancak Karar Verici olmayacaksınız. Karar Verici olmanız gereken durum için size 2 birim verilecektir EK = 2.
  - Eğer sıradaki son kişi sizseniz, o turda sadece Karar verici olacaksınız, ancak Alıcı olmayacaksınız. Alıcı olmanız gereken durum için bu turdaki önceki Alıcıların ortalama sonucunu alacaksınız EA = Ortalama (EA).
- Her dönemin Karar alıcısı, önceki dönemlerde yapılan transferler hakkında bilgilendirilecektir.

Her turda yeni bir sıra rastgele belirlenir ve Alıcı ve Karar Verici olarak eşleştiğiniz kişiler değişebilir.

Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
		0	1	2	3	4	5	6	7
Karar verici olduğunuzda sizden Alıcıya yapılan transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.1.7. Emeklilik Oyunu ENDO-L Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

Deney on ayrı turdan oluşuyor. Her turda, her biriniz belirli miktarda puan kazanacaksınız. Deneyin sonunda bu 10 turda kazanılan puanlar her biriniz için ayrı ayrı toplanacak. Kazanılan her puan deney sonunda 5 kuruşa eşdeğer olacaktır. Buna ek olarak, hepinize 10 TL katılım ödemesi yapılacak. Böylece toplam kazancınız 10 TL artı 0.05 kere kazanılan puana eşit olacaktır. Şimdi, her turda kazanılan puanların nasıl belirleneceğini açıklayacağız.

Deneyin talimatlarını ekranda görebilirsiniz. Bundan sonra soru sorma fırsatınız olacak. Şu andan itibaren başka bir katılımcıyla konuşmamanız ya da başka bir katılımcıyla iletişim kurmamanızı rica ediyoruz. Talimatları inceledikten sonra, önce bir alıştırma turu yapılacak. Alıştırma turundan sonra, bu deney için kazancınızı belirleyen on tur başlayacak.

Kararlar ve getiriler

Deneyin başlangıcında, MAVİ ve KIRMIZI olmak üzere iki gruba ayrılacaksınız. Deney boyunca renk grubunuz aynı olacaktır.

Eşleşme rastgele olarak yapılır. Ama her tur, Karar Verici konumunda olduğunuz durum için, aynı renk grubundan biriyle eşleşme olasılığını arttırma fırsatına sahip olacaksınız. 0-9 arasında ödemek isteyeceğiniz bir tutar seçmeniz istenecektir. Ödemek istediğiniz tutar ne kadar yüksek olursa, transfer yapacağınız zaman aynı renk grubundan biriyle eşleşme şansınız o kadar yüksek olur.

10 tur yapılacak ve her turda **7 dönem** olacaktır.

Her dönem, size 1-8 arasında bir sıra numarası verilecek. Sizin sıranız geldiğinde, Karar Verici olacaksınız ve sırada sizden bir önceki kişi Alıcı olacak. Siz de gelecek dönem Alıcı olacaksınız.

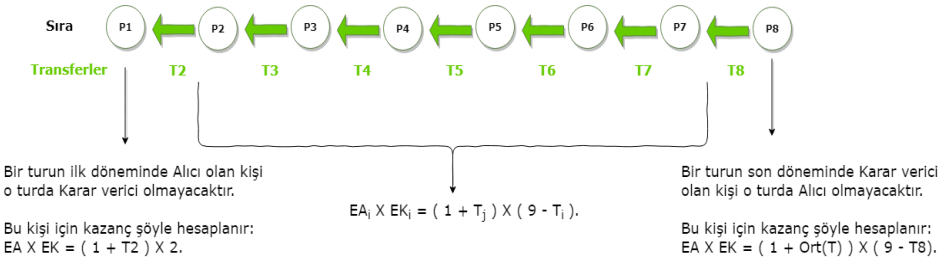
- Karar vericilere 9 birim verilir; Alıcılara ise 1 birim verilir.
- Karar Verici, verilenin hangi kısmını (0-7) Alıcıya transfer edeceğini seçer.
- Alıcı yalnızca transferi alır.
- Yapılan transfer miktarı T, Karar verici ve Alıcı için sonucu belirleyecektir:
  - Alıcı EA = 1 + T'ye sahip olur.
  - Karar verici EK = 9 - T'ye sahip olur.
- Sıradaki herkes, ilk ve sonuncu dışında hem bir Karar verici hem de Alıcı olacaktır.
  - Eğer sıradaki ilk kişi sizseniz, o turda sadece Alıcı olacaksınız, ancak Karar Verici olmayacaksınız. Karar Verici olmanız gereken durum için size 2 birim verilecektir EK = 2.

- Eğer sıradaki son kişi sizseniz, o turda sadece Karar verici olacaksınız, ancak Alıcı olmayacaksınız. Alıcı olmanız gereken durum için bu turdaki önceki Alıcıların ortalama sonucunu alacaksınız EA = Ortalama (EA).

• Her dönemin Karar alıcısı, önceki dönemlerde yapılan transferler hakkında bilgilendirilecektir.

Her turda yeni bir sıra rastgele belirlenir ve Alıcı ve Karar Verici olarak eşleştiğiniz kişiler değişebilir.

Her tur sonunda, o tur için kazancınız EK x EA = (9 - Tj)x(1 + Ti) olarak hesaplanır.



Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
		0	1	2	3	4	5	6	7
Karar verici olduğunuzda sizden Alıcıya yapılan transfer	0	9	18	27	36	45	54	63	72
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Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç

dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.1.8. Emeklilik Oyunu ENDO-R Prosedürü

Giriş (sadece yüksek sesle okunacak)

Karar vermeye dayalı deneysel bir çalışmaya katılmak üzeresiniz. Deney yaklaşık bir saat sürecek. Deneyin talimatları basit ve bunları dikkatle izlerseniz önemli miktarda para kazanabilirsiniz. Kazandığınız tüm para size ait olacak ve deneyin bitiminden hemen sonra size özel ve saklı olarak nakit ödenecektir.

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Kararlar ve getiriler

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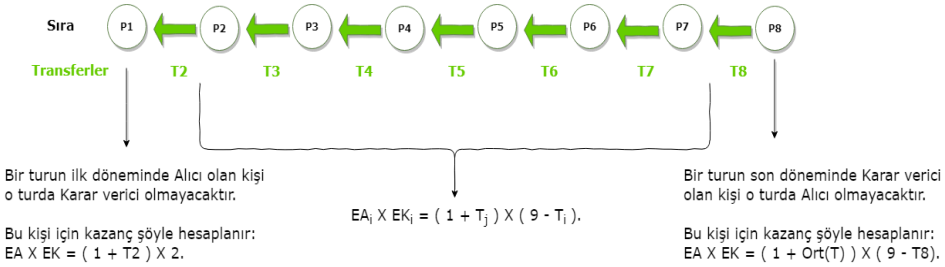

Aşağıdaki tablo, Karar verici olduğunuzda Alıcıya yaptığınız transfer ve Alıcı olduğunuzda Karar verici tarafından size yapılan transfere bağlı olarak bir turda elde edebileceğiniz kazançları göstermektedir. Bu tabloda satırlar Karar verici olduğunuzda sizden Alıcıya yapılan transferi ve sütunlar Alıcı olduğunuzda size Karar verici tarafından yapılan transferi gösterir. Yapacağınız transferi satırda ilk olarak bulup sonra size yapılan transferi veren sütuna doğru

gittiğinizde, kazancınızı o tur için EK X EA puanı olarak okuyabilirsiniz. Parasal kazanç, verilen puanın 5 kuruşla çarpılmasıyla hesaplanır.

		Alıcı olduğunuzda size Karar verici tarafından yapılan transfer							
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Karar verici olduğunuzda sizden Alıcıya yapılan transfer	0	9	18	27	36	45	54	63	72
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	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

Son turdan sonra, sizden ilk olarak bir anket cevaplamanız istenecektir. Cevaplarınız sadece katılımcı numaranıza bağlı olarak kaydedilecek, adınız istenmeyecektir. Kazancınız konusunda sizden başka kimse bilgilendirilmeyecektir. Deney sırasında katılımcıların birbirleriyle iletişim kurması yasaktır. Talimatları gözden geçirmek ve soru sormak için birkaç dakikanız var. Bir şey sormak istediğinizde, lütfen elinizi kaldırın. Bundan sonra deneye başlayacağız.

Sorusu olan var mı?

A.2. Instructions in English

A.2.1. Poverty Game Control Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all

participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

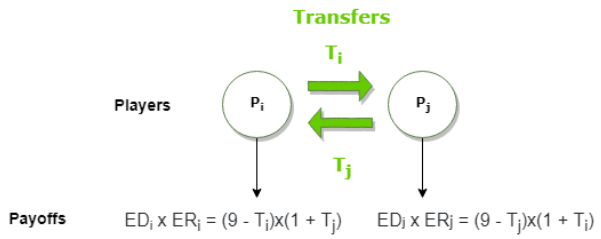
Decisions and earnings

There will be **10 rounds** and each round has **2 periods**.

Each round, you will be randomly and anonymously paired with another participant. Then, at the first period, one of you will be the Decider and the other the Receiver. At the second period, your roles will be reversed. So, you will be both a Decider and a Receiver in each round.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
  - Deciders will be asked about how much they are expecting to receive when they are Receivers.
  - This information is not revealed to Receivers.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti). Then you will again be randomly and anonymously paired with another participant.



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from

you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.2. Poverty Game Control-Non information Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be

equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

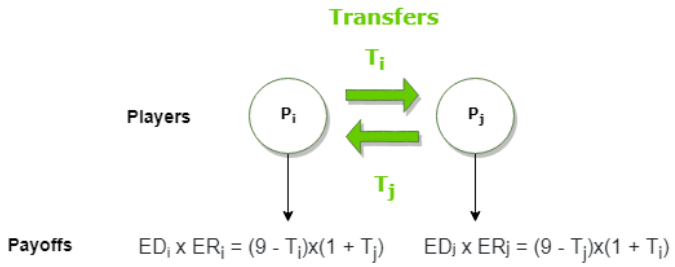
Decisions and earnings

There will be **10 rounds** and each round has **2 periods**.

Each round, you will be randomly and anonymously paired with another participant. Then, at the first period, one of you will be the Decider and the other the Receiver. At the second period, your roles will be reversed. So, you will be both a Decider and a Receiver in each round.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
  - Deciders will be asked about how much they are expecting to receive when they are Receivers.
  - This information is not revealed to Receivers.
- Players will not be informed about transfers until the end of the round.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti). Then you will again be randomly and anonymously paired with another participant.



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.3. Poverty Game EXO Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point

earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

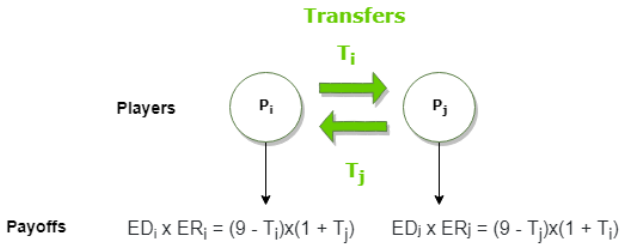
At the beginning of the experiment, you will be divided into two groups which are BLUE and RED. Throughout the experiment, your colour group will be the same.

There will be **10 rounds** and each round has **2 periods**.

Each round, you will be randomly and anonymously paired with another participant. Then, at the first period, one of you will be the Decider and the other the Receiver. At the second period, your roles will be reversed. So, you will be both a Decider and a Receiver in each round.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
  - Deciders will be asked about how much they are expecting to receive when they are Receivers.
  - This information is not revealed to Receivers.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti). Then you will again be randomly and anonymously paired with another participant.



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.4. Poverty Game ENDO Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

At the beginning of the experiment, you will be divided into two groups which are BLUE and RED. Throughout the experiment, your colour group will be the same.

Each round, you have the opportunity to increase the likelihood to be matched with someone from the same colour group. You will be asked to choose an amount between 0-9 that you will be willing to pay. The higher your willingness to pay, the higher are your chances to be matched with someone from the same colour group.

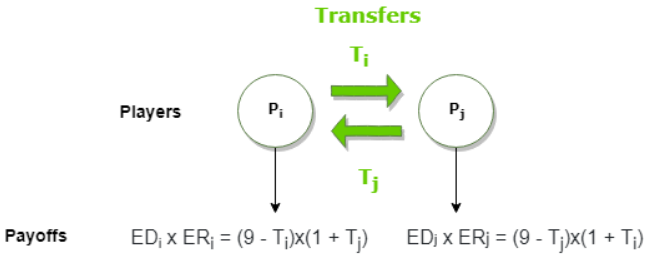
There will be **10 rounds** and each round has **2 periods**.

Each round, you will be randomly and anonymously paired with another participant. Then, at the first period, one of you will be the Decider and the other the Receiver. At the second period, your roles will be reversed. So, you will be both a Decider and a Receiver in each round.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
  - Deciders will be asked about how much they are expecting to receive when they are Receivers.
  - This information is not revealed to Receivers.

- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti). Then you will again be randomly and anonymously paired with another participant.



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.5. Pension Game Control Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

There will be **10 rounds** and each round has **7 periods**.

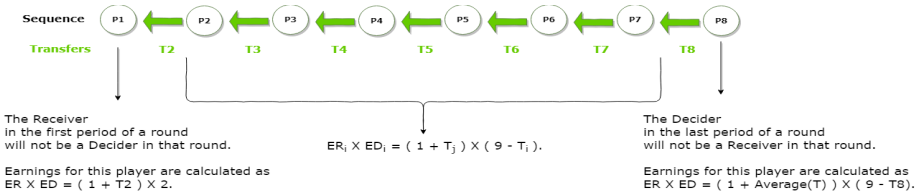
Each period, you will be assigned to a number between 1-8 in the sequence. You will be a Decider if this is your turn and the previous person on the line will be a Receiver. You will be also a Receiver the next period.Deciders are endowed with 9 units; Receivers with 1 unit.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.

- Everyone in the sequence will be a Decider and a Receiver except for the first and the last on the line.
  - If you are the first in the line, you will be a Receiver but not a Decider in that particular round. You will be given 2 units as your outcome for being a Decider ED = 2.
  - If you are the last in the line, you will be a Decider but not a Receiver in that particular round. You will be given the average outcome of the previous Receivers ER = Average(ER).
- The Decider in each period will be informed about the transfers made in previous periods.

Each round, a new sequence will be randomly determined and the partners you match with as a Receiver and as a Decider may be different .

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti)



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.6. Pension Game EXO Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

At the beginning of the experiment, you will be divided into two groups which are BLUE and RED. Throughout the experiment, your colour group will be the same.

There will be **10 rounds** and each round has **7 periods**.

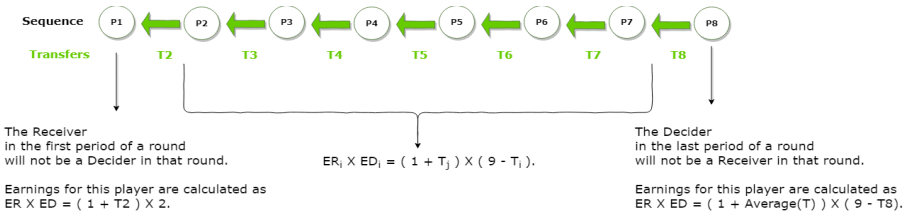
Each period, you will be assigned to a number between 1-8 in the sequence. You will be a Decider if this is your turn and the previous person on

the line will be a Receiver. You will be also a Receiver the next period.Deciders are endowed with 9 units; Receivers with 1 unit.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.
- Everyone in the sequence will be a Decider and a Receiver except for the first and the last on the line.
  - If you are the first in the line, you will be a Receiver but not a Decider in that particular round. You will be given 2 units as your outcome for being a Decider ED = 2.
  - If you are the last in the line, you will be a Decider but not a Receiver in that particular round. You will be given the average outcome of the previous Receivers ER = Average(ER).
- The Decider in each period will be informed about the transfers made in previous periods.

Each round, a new sequence will be randomly determined and the partners you match with as a Receiver and as a Decider may be different.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti)



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.7. Pension Game ENDO-Left Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

At the beginning of the experiment, you will be divided into two groups which are BLUE and RED. Throughout the experiment, your colour group will be the same.

Each round, when you are the Decider, you have the opportunity to increase the likelihood to be matched with someone from the same colour group. You will be asked to choose an amount between 0-9 that you will be willing to pay. The higher your willingness to pay, the higher are your chances to be matched with someone from the same colour group when you make a transfer to her/him.

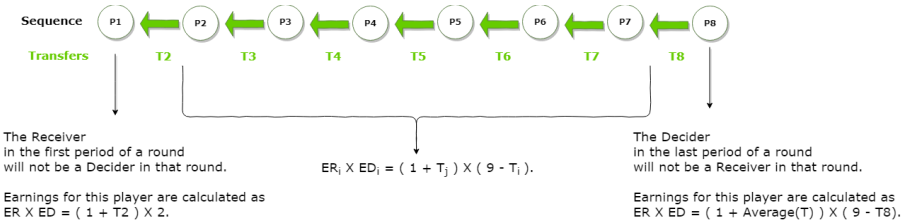
There will be **10 rounds** and each round has **7 periods**.

Each period, you will be assigned to a number between 1-8 in the sequence. You will be a Decider if this is your turn and the previous person on the line will be a Receiver. You will be also a Receiver the next period. Deciders are endowed with 9 units; Receivers with 1 unit.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
- Transfer made T will determine the outcome for the Decider and Receiver:
  - Receiver will have ER = 1 + T
  - Decider will have ED = 9 - T.
- Everyone in the sequence will be a Decider and a Receiver except for the first and the last on the line.
  - If you are the first in the line, you will be a Receiver but not a Decider in that particular round. You will be given 2 units as your outcome for being a Decider ED = 2.
  - If you are the last in the line, you will be a Decider but not a Receiver in that particular round. You will be given the average outcome of the previous Receivers ER = Average(ER).
- The Decider in each period will be informed about the transfers made in previous periods.

Each round, a new sequence will be randomly determined and the partners you match with as a Receiver and as a Decider may be different .

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti)



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

A.2.8. Pension Game ENDO-Right Treatment

Introduction (read aloud only)

You are about to participate in an experimental study of decision-making. The experiment will last for about one hour. The instructions of the experiment are simple and if you follow them carefully you may earn a considerable amount of money. All the money you earn will be yours to keep and will be paid to you, privately and confidentially, in cash right after the end of the experiment.

The experiment consists of 10 separate rounds. In every round, each of you will earn a certain amount of points. At the end of the experiment the points earned are for 10 rounds added up for each participant separately. Every point earned is worth 5 kurus at the end of the experiment. In addition to this, all participants receive a participation fee of 10 TL. Your total earnings will thus be equal to 10 TL plus the number of points earned 0.05 times. Now, we describe how the points earned in each round will be determined.

You can see the instructions of the experiment on the screen. After that, you will have the opportunity to ask questions. From now on, you are requested not to talk to, or communicate with, any other participant. After we have gone through the instructions, first a practice round will be run. After the practice round, 10 rounds that determine your earnings for this experiment will be run.

Decisions and earnings

At the beginning of the experiment, you will be divided into two groups which are BLUE and RED. Throughout the experiment, your colour group will be the same.

Each round, when you are the Receiver, you have the opportunity to increase the likelihood to be matched with someone from the same colour group. You will be asked to choose an amount between 0-9 that you will be willing to pay. The higher your willingness to pay, the higher are your chances to be matched with someone from the same colour group when he/she makes a transfer to you.

There will be **10 rounds** and each round has **7 periods**.

Each period, you will be assigned to a number between 1-8 in the sequence. You will be a Decider if this is your turn and the previous person on the line will be a Receiver. You will be also a Receiver the next period. Deciders are endowed with 9 units; Receivers with 1 unit.

- Deciders are endowed with 9 units; Receivers with 1 unit.
- A Decider will choose which part of her/his endowment (0-7) to transfer to the Receiver.
- Receiver will only get the transfer.
- Transfer made T will determine the outcome for the Decider and Receiver:

- Receiver will have ER = 1 + T
- Decider will have ED = 9 - T.

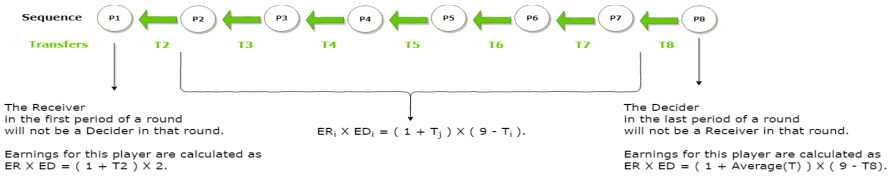
• Everyone in the sequence will be a Decider and a Receiver except for the first and the last on the line.

- If you are the first in the line, you will be a Receiver but not a Decider in that particular round. You will be given 2 units as your outcome for being a Decider ED = 2.
- If you are the last in the line, you will be a Decider but not a Receiver in that particular round. You will be given the average outcome of the previous Receivers ER = Average(ER).

• The Decider in each period will be informed about the transfers made in previous periods.

Each round, a new sequence will be randomly determined and the partners you match with as a Receiver and as a Decider may be different.

At the end of each round, your payoff for that particular round will be ED x ER = (9 - Tj)x(1 + Ti)



The table states your earnings in points in a round based on the transfer from you to the Receiver when you are Decider and the transfer to you by the Decider when you are Receiver. In this table the rows present the transfer from you as Decider to the Receiver and the columns present the transfer to you as Receiver from the Decider. When you first look in the row for the transfer you make and then go to the right to the column stating the transfer you receive, you can read your earnings in points, ED X ER, for the round. The monetary earnings are calculated by multiplying these by 5 kurus.

		Transfer *to you* from the Decider when you are Receiver							
		0	1	2	3	4	5	6	7
Transfer *from you* to the Receiver when you are Decider	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

After the last round, first you will be requested to answer a questionnaire. This questionnaire is anonymous. We can link your answers to your player number but not to your name. Your earnings are your own business; you do not need to discuss with anyone. You get a couple of minutes to go through the instructions and to ask questions. If you have any questions, please raise your hand. After that we will start the practice round.

Are there any questions?

APPENDIX B SCREENSHOTS OF THE EXPERIMENT AND THE QUESTIONNAIRE

B.1. Poverty Game Control Treatment

20- Figure B.1.1: Introduction to Round Screen

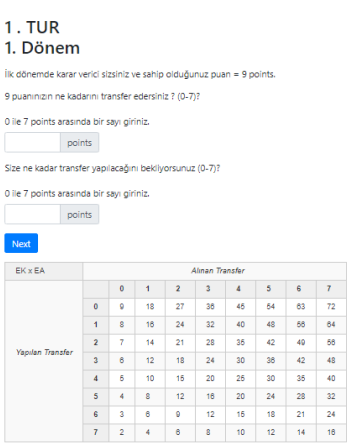
1 . TUR

Transfer oyununun 1.turuna başlamak için "**next**"e basınız.

Next

EK x EA	*Alınan Transfer*							
	0	1	2	3	4	5	6	7
Yapılan Transfer								
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

21- Figure B.1.2: First Decider's Screen



1 . TUR
1. Dönem

İlk dönemde karar verici sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

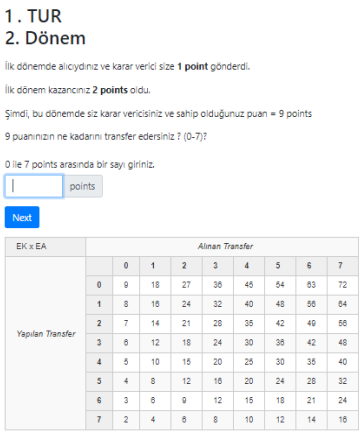
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

22- Figure B.1.3: First Receiver's Screen



1 . TUR
2. Dönem

İlk dönemde alıcıydınız ve karar verici size **1 point** gönderdi.

İlk dönem kazancınız **2 points** oldu.

Şimdi, bu dönemde siz karar vericisiniz ve sahip olduğunuz puan = 9 points

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

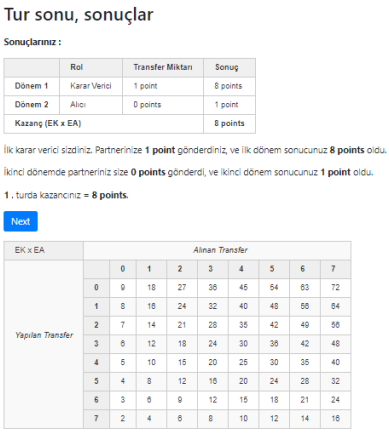
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

23- Figure B.1.4: Results Screens



Tur sonu, sonuçlar

Sonuçlarınız :

	Rol	Transfer Miktarı	Sonuç
Dönem 1	Karar Verici	1 point	8 points
Dönem 2	Alıcı	0 points	1 point
Kazanç (EK x EA)			8 points

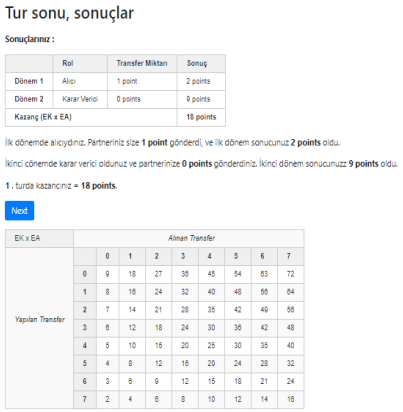
İlk karar verici sizdiniz. Partnerinize **1 point** gönderdiniz, ve ilk dönem sonucunuz **8 points** oldu.

İkinci dönemde partneriniz size **0 points** gönderdi, ve ikinci dönem sonucunuz **1 point** oldu.

1 . turda kazancınız = **8 points.**

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16



Tur sonu, sonuçlar

Sonuçlarınız :

	Rol	Transfer Miktarı	Sonuç
Dönem 1	Alıcı	1 point	2 points
Dönem 2	Karar Verici	0 points	9 points
Kazanç (EK x EA)			18 points

İlk dönemde alıcıydınız. Partneriniz size **1 point** gönderdi, ve ilk dönem sonucunuz **2 points** oldu.

İkinci cönemde karar verici olduruz ve partnerinize **0 points** gönderdiniz. İkinci dönem sonucunuz **9 points** oldu.

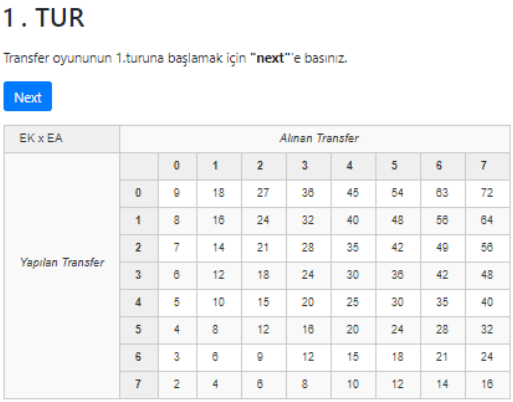
1 . turda kazancınız = **18 points.**

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

B.2. Poverty Game No Information Treatment

24- Figure B .2.1: Introduction to round Screen



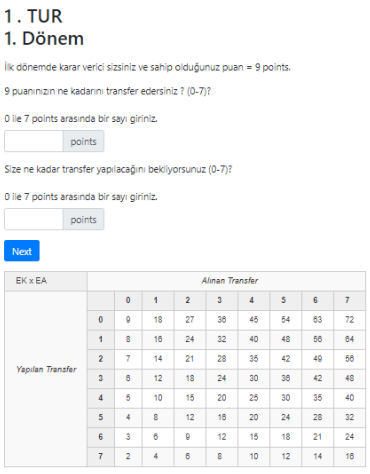
1 . TUR

Transfer oyununun 1.turuna başlamak için "**next**"'e basınız.

Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

25- Figure B.1.2: First Decider's Screen



1 . TUR

1. Dönem

İlk dönemde karar verici sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

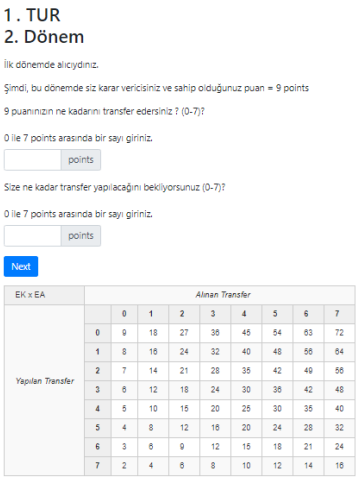
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

26- Figure B.1.3: First Receiver's Screen



1 . TUR

2. Dönem

İlk dönemde alıcıydınız.

Şimdi, bu dönemde siz karar vericisiniz ve sahip olduğunuz puan = 9 points

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

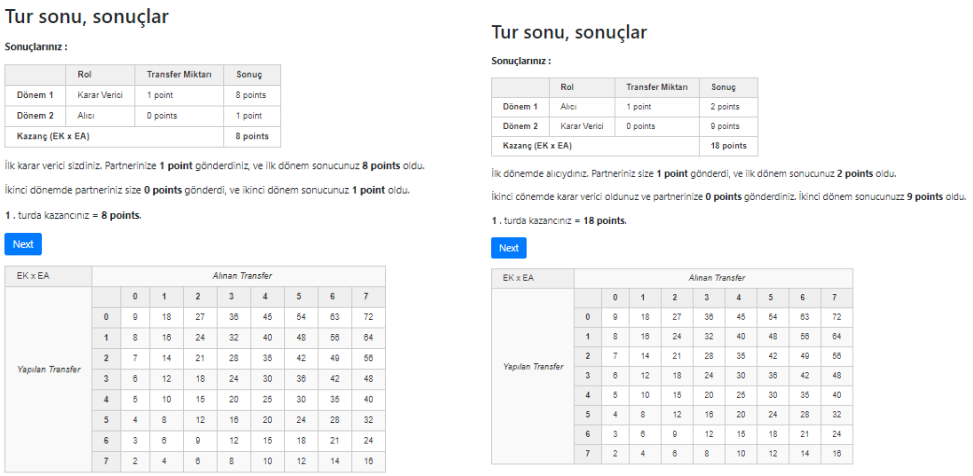
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

27- Figure B.1.4: Results Screens



Tur sonu, sonuçlar

Sonuçlarınız :

	Rol	Transfer Miktarı	Sonuç
Dönem 1	Karar Verici	1 point	8 points
Dönem 2	Alıcı	0 points	1 point
Kazanç (EK x EA)			**8 points**

İlk karar verici sizdiniz. Partnerinize **1 point** gönderdiniz, ve ilk dönem sonucunuz **8 points** oldu.

İkinci dönemde partneriniz size **0 points** gönderdi, ve ikinci dönem sonucunuz **1 point** oldu.

1 . turda kazancınız = **8 points**.

Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

Tur sonu, sonuçlar

Sonuçlarınız :

	Rol	Transfer Miktarı	Sonuç
Dönem 1	Alıcı	1 point	2 points
Dönem 2	Karar Verici	0 points	9 points
Kazanç (EK x EA)			**18 points**

İlk dönemde alıcıydınız. Partneriniz size **1 point** gönderdi, ve ilk dönem sonucunuz **2 points** oldu.

İkinci dönemde karar verici oldunuz ve partnerinize **0 points** gönderdiniz. İkinci dönem sonucunuz **9 points** oldu.

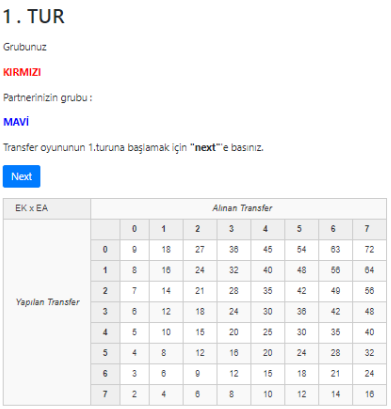
1 . turda kazancınız = **18 points**.

Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

B.3. Poverty Game EXO Treatment

28- Figure B.3.1: Introduction to Round Screen



1 . TUR

Grubunuz

KIRMIZI

Partnerinizin grubu :

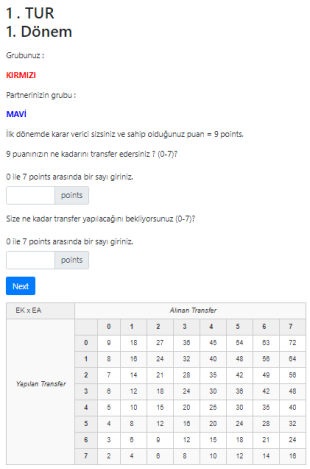
MAVİ

Transfer oyununun 1.turuna başlamak için "**next**"e basınız.

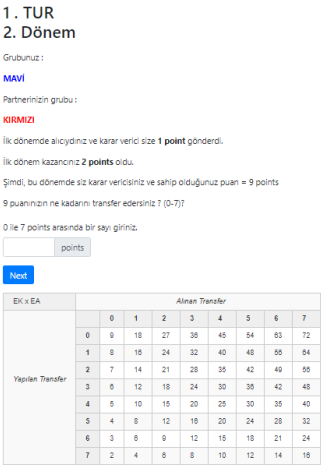
Next

EK x EA	*Alınan Transfer*								
Yapılan Transfer		0	1	2	3	4	5	6	7
	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

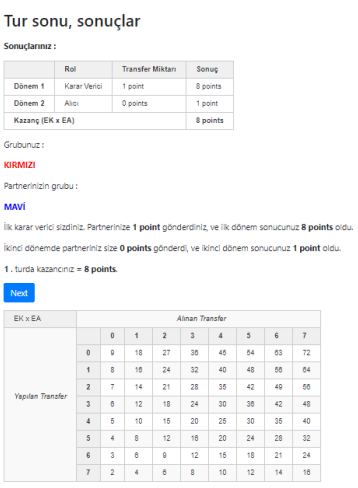
29- Figure B.3.2: First Decider's Screen

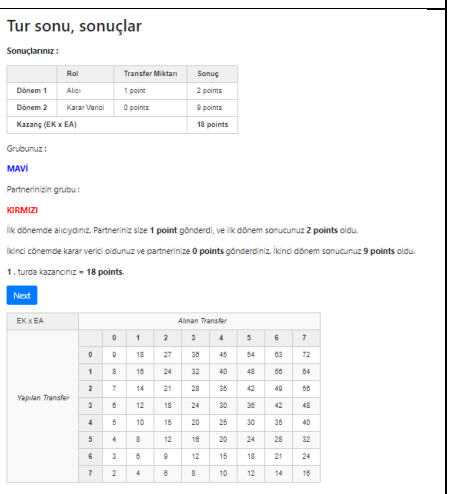


30- Figure B.3.3: First Receiver's Screen



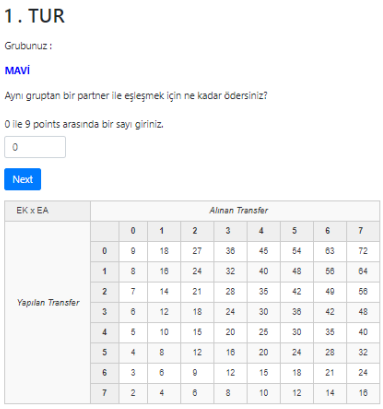
31- Figure B.3.4: Results Screens





B.4. Poverty Game ENDO Treatment

32- Figure B.4.1: Introduction to round Screen



1 . TUR

Grubunuz :

MAVİ

Aynı gruptan bir partner ile eşleşmek için ne kadar ödersiniz?

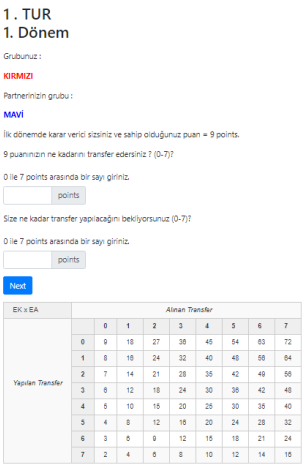
0 ile 9 points arasında bir sayı giriniz.

0

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

33- Figure B.4.2: First Decider's Screen



1 . TUR
1. Dönem

Grubunuz :

KIRMIZI

Partnerinizin grubu :

MAVİ

İlk dönemde karar verici sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

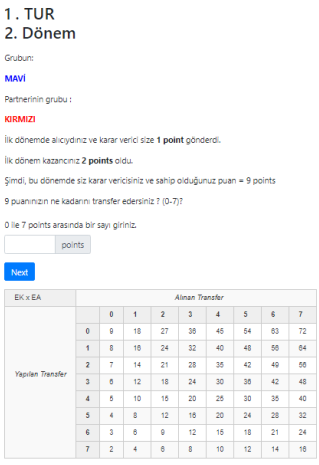
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

34- Figure B.4.3: First Receiver's Screen



1 . TUR
2. Dönem

Grubun:

MAVİ

Partnerinin grubu :

KIRMIZI

İlk dönemde alıcıydınız ve karar verici size **1 point** gönderdi.

İlk dönem kazancınız **2 points** oldu.

Şimdi, bu dönemde siz karar vericisiniz ve sahip olduğunuz puan = 9 points

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

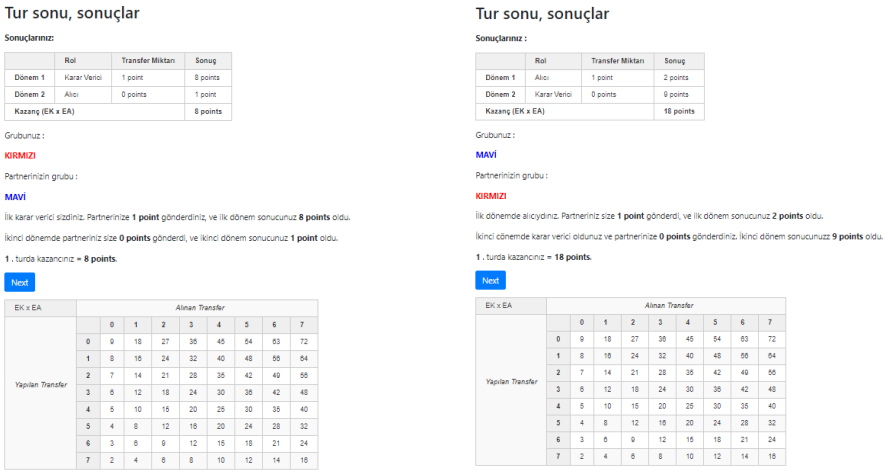
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

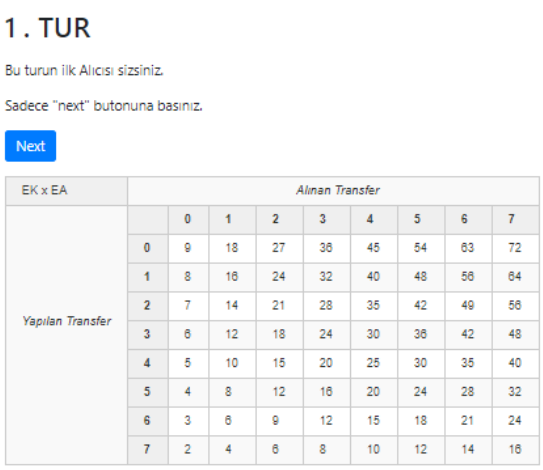
35- Figure B.4.5: Results Screens



B.5. Pension Game Control Treatment

36- Figure B.5.1: Introduction Screen

37- Figure B.5.2: Player 1's Screen



1 . TUR

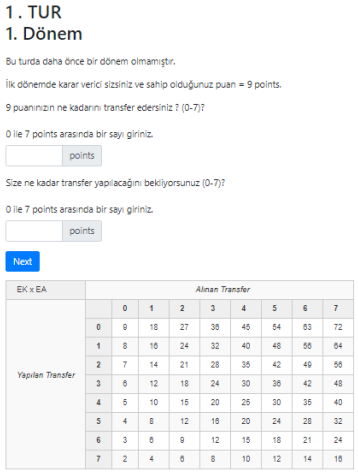
Bu turun ilk Alıcısı sizsiniz.

Sadece "next" butonuna basınız.

Next

EK x EA	*Alınan Transfer*							
Yapılan Transfer	0	1	2	3	4	5	6	7
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

38- Figure B.5.3: Player 2's Screen



1 . TUR

1. Dönem

Bu turda daha önce bir dönem olmamıştır.

İlk dönemde karar verici sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

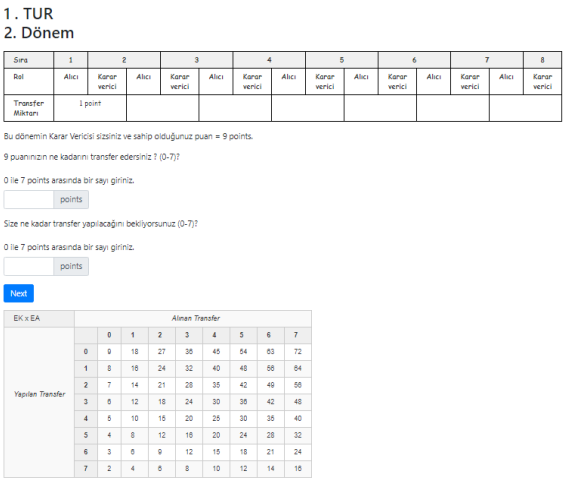
0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	*Alınan Transfer*							
Yapılan Transfer	0	1	2	3	4	5	6	7
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

39- Figure B.5.4: Player-3 Screen
(4, 5, 6 and 7 are alike)



1 . TUR

2. Dönem

Sıra	1	2		3		4		5		6		7		8
Rol	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici
Transfer Miktarı	1 point													

Bu dönemin Karar Vericisi sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Size ne kadar transfer yapılacağını bekliyorsunuz (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	*Alınan Transfer*							
Yapılan Transfer	0	1	2	3	4	5	6	7
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

40- Figure B.5.5: Player-8 Screen

1. TUR
7. Dönem

Sıra	1	2		3		4		5		6		7		8
Rol	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici	Alıcı	Karar verici
Transfer Miktarı	1 point		2 points		3 points		4 points		5 points		6 points			

Bu turun son karar vericisi sizsiniz ve sahip olduğunuz puan = 9 points.

9 puanınızın ne kadarını transfer edersiniz ? (0-7)?

0 ile 7 points arasında bir sayı giriniz.

points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

41- Figure B.5.5: Results Screen

Tur sonu, sonuçlar

Sıra	1		2		3		4		5		6		7		8	
Rol	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı	Karar Verici	Alıcı
Transfer Miktarı	7 points (varsayılan)		1 point		2 points		3 points		4 points		5 points		6 points		7 points	4 points (yuvarlanan)

Bu turun ilk Alıcısı sizdiniz. Size yapılan transfer = 1 point .

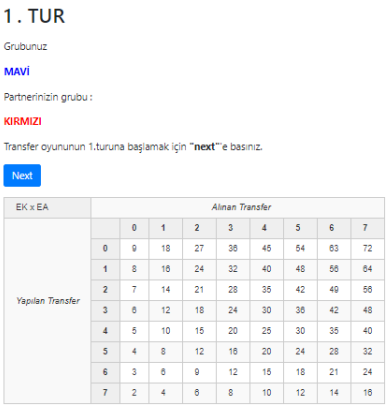
Sonucunuz :	
Kazanç (EK x EA)	4 points

Next

EK x EA	Alınan Transfer								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

B.6. Pension Game EXO Treatment

42- Figure B.6.1: Introduction Screen



1 . TUR

Grubunuz

MAVİ

Partnerinizin grubu :

KIRMIZI

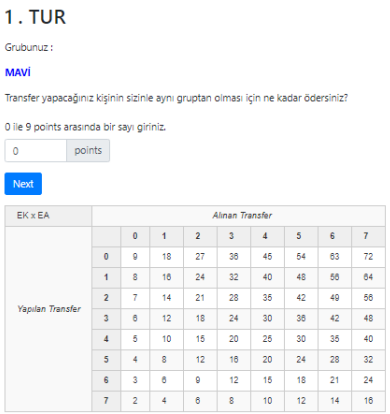
Transfer oyununun 1.turuna başlamak için "**next**"e basınız.

Next

EK x EA	*Alınan Transfer*							
Yapılan Transfer	0	1	2	3	4	5	6	7
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

B.7. Pension Game ENDO-Left Treatment

43- Figure B.7.1: Introduction Screen



1 . TUR

Grubunuz :

MAVİ

Transfer yapacağınız kişinin sizinle aynı gruptan olması için ne kadar ödersiniz?

0 ile 9 points arasında bir sayı giriniz.

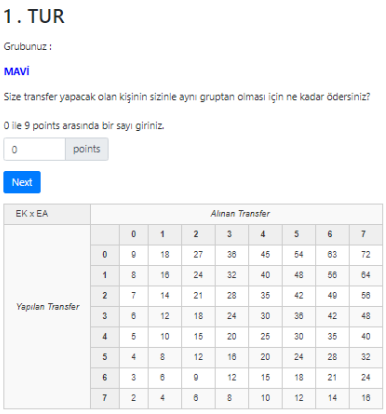
0 points

Next

EK x EA	*Alınan Transfer*							
Yapılan Transfer	0	1	2	3	4	5	6	7
0	9	18	27	36	45	54	63	72
1	8	16	24	32	40	48	56	64
2	7	14	21	28	35	42	49	56
3	6	12	18	24	30	36	42	48
4	5	10	15	20	25	30	35	40
5	4	8	12	16	20	24	28	32
6	3	6	9	12	15	18	21	24
7	2	4	6	8	10	12	14	16

B.8. Pension Game ENDO-Right Treatment

44- Figure B.8.1: Introduction Screen



1 . TUR

Grubunuz :

MAVİ

Size transfer yapacak olan kişinin sizinle aynı gruptan olması için ne kadar ödersiniz?

0 ile 9 points arasında bir sayı giriniz.

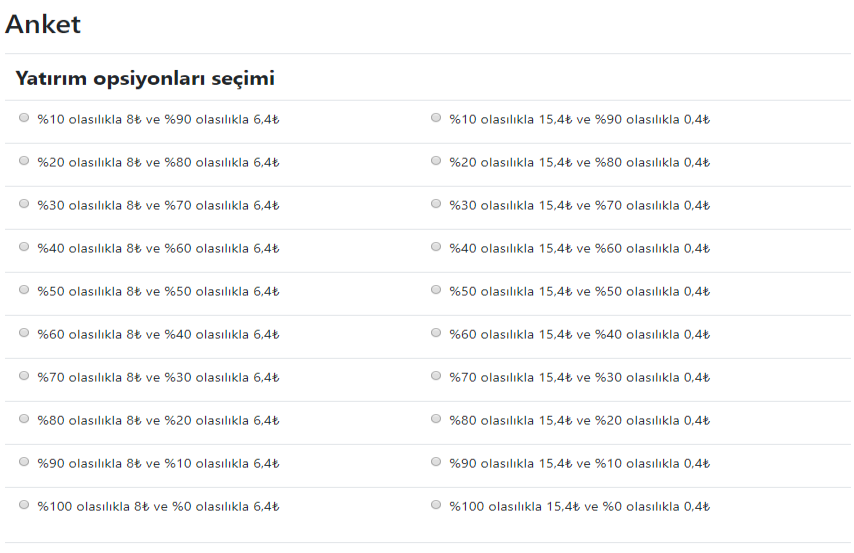
0 points

Next

EK x EA	*Alınan Transfer*								
		0	1	2	3	4	5	6	7
Yapılan Transfer	0	9	18	27	36	45	54	63	72
	1	8	16	24	32	40	48	56	64
	2	7	14	21	28	35	42	49	56
	3	6	12	18	24	30	36	42	48
	4	5	10	15	20	25	30	35	40
	5	4	8	12	16	20	24	28	32
	6	3	6	9	12	15	18	21	24
	7	2	4	6	8	10	12	14	16

B.9. End Game Questionnaire

45- Figure B.9.1: Questionnaire 1 - **Choices** of Investment Options

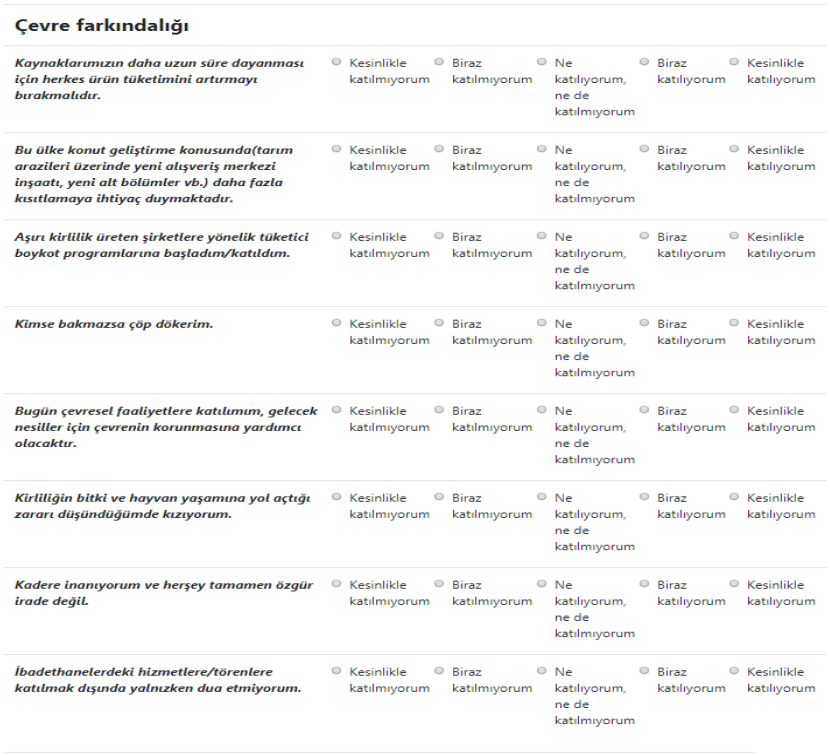


Anket

Yatırım opsiyonları seçimi

%10 olasılıkla 8₺ ve %90 olasılıkla 6,4₺	%10 olasılıkla 15,4₺ ve %90 olasılıkla 0,4₺
%20 olasılıkla 8₺ ve %80 olasılıkla 6,4₺	%20 olasılıkla 15,4₺ ve %80 olasılıkla 0,4₺
%30 olasılıkla 8₺ ve %70 olasılıkla 6,4₺	%30 olasılıkla 15,4₺ ve %70 olasılıkla 0,4₺
%40 olasılıkla 8₺ ve %60 olasılıkla 6,4₺	%40 olasılıkla 15,4₺ ve %60 olasılıkla 0,4₺
%50 olasılıkla 8₺ ve %50 olasılıkla 6,4₺	%50 olasılıkla 15,4₺ ve %50 olasılıkla 0,4₺
%60 olasılıkla 8₺ ve %40 olasılıkla 6,4₺	%60 olasılıkla 15,4₺ ve %40 olasılıkla 0,4₺
%70 olasılıkla 8₺ ve %30 olasılıkla 6,4₺	%70 olasılıkla 15,4₺ ve %30 olasılıkla 0,4₺
%80 olasılıkla 8₺ ve %20 olasılıkla 6,4₺	%80 olasılıkla 15,4₺ ve %20 olasılıkla 0,4₺
%90 olasılıkla 8₺ ve %10 olasılıkla 6,4₺	%90 olasılıkla 15,4₺ ve %10 olasılıkla 0,4₺
%100 olasılıkla 8₺ ve %0 olasılıkla 6,4₺	%100 olasılıkla 15,4₺ ve %0 olasılıkla 0,4₺

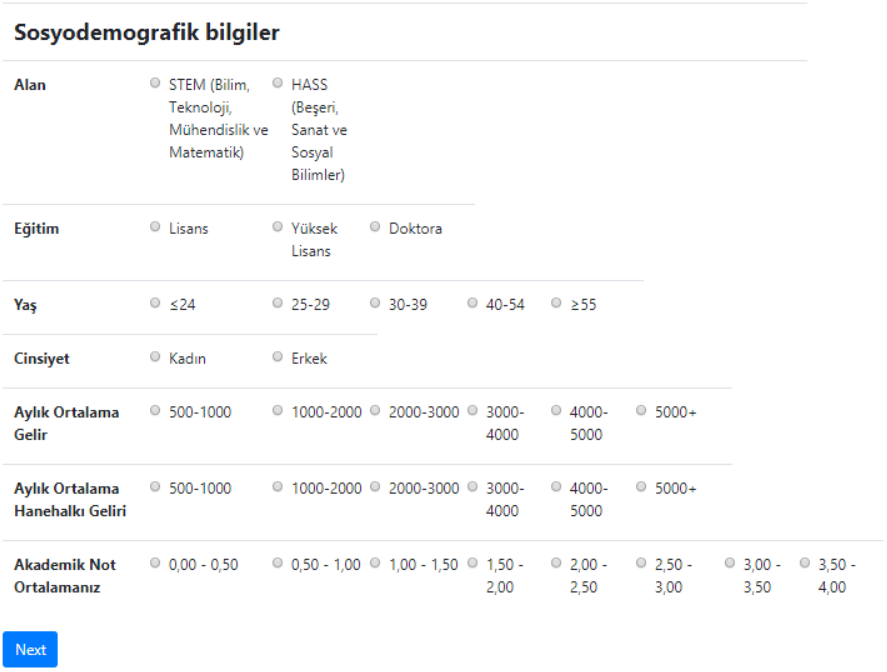
46- Figure B.9.2: Questionnaire 2 - Environmental Consciousness Questions



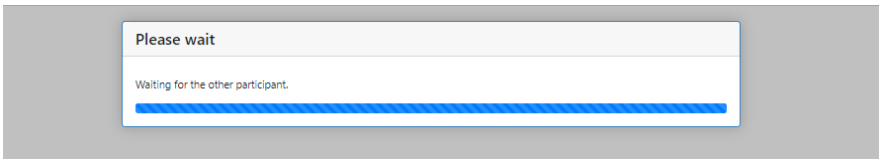
Çevre farkındalığı

Kaynaklarımızın daha uzun süre dayanması için herkes ürün tüketimini artırmayı bırakmalıdır.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Bu ülke konut geliştirme konusunda(tarım arazileri üzerinde yeni alışveriş merkezi inşaatı, yeni alt bölümler vb.) daha fazla kısıtlamaya ihtiyaç duymaktadır.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Aşırı kirlilik üreten şirketlere yönelik tüketici boykot programlarına başladım/katıldım.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Kimse bakmazsa çöp dökerim.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Bugün çevresel faaliyetlere katılımım, gelecek nesiller için çevrenin korunmasına yardımcı olacaktır.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Kirliliğin bitki ve hayvan yaşamına yol açtığı zararı düşündüğümde kızıyorum.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
Kadere inanıyorum ve herşey tamamen özgür irade değil.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum
İbadethanelerdeki hizmetlere/törenlere katılmak dışında yalnızken dua etmiyorum.	Kesinlikle katılmıyorum	Biraz katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Biraz katılıyorum	Kesinlikle katılıyorum

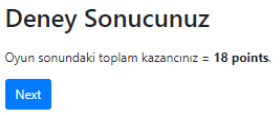
47- Figure B.9.3: Questionnaire 3 - Socio-demographic Questions



48- Figure B.9.4: Waiting Page Screen



49- Figure B.9.5: Overall Results Screen



APPENDIX C - THE SOURCE CODE (PYTHON FILES)

C.1. Models.py

C.1.1. Poverty Game Control Treatment

```
from otree.api import (
    models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
    Currency as c, currency_range
)
import random

doc = """
This is a 2-player Poverty Game first introduced by Hammond(1975).
The Poverty Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
    Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
    name_in_url = 'TPOGcont'
    players_per_group = 2
    num_rounds = 10
    instructions_template = 'TPOGcont/instructions.html'
    table_template = 'TPOGcont/table.html'

    # Initial amount allocated to players+
    endowment_Decider = c(9)
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):
    def creating_session(self):
        self.group_randomly()

class Group(BaseGroup):
    sent_amount = models.CurrencyField(
```

```
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P1""",
    )
    expect_decider = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P1""",
    )
    sent_back_amount = models.CurrencyField(
        doc="""Amount sent back by P2""",
        min=c(0), max=Constants.endowment_Decider-2,
    )

    def set_payoffs(self):
        p1 = self.get_player_by_id(1)
        p2 = self.get_player_by_id(2)
        p1.payoff = (Constants.endowment_Decider - self.sent_amount) *(
Constants.endowment_Receiver + self.sent_back_amount )
        p2.payoff = (Constants.endowment_Decider - self.sent_back_amount) *(
Constants.endowment_Receiver + self.sent_amount )

          class Player(BasePlayer):

              def role(self):
        return {1: 'A', 2: 'B'}[self.id_in_group]
```

Survey: This part is common to other treatments. We will refer to this part as Survey in what follows.

```
    gpa = models.StringField(choices= ['0,00 - 0,50', '0,50 - 1,00', '1,00 - 1,50', '1,50 - 2,00',
'2,00 - 2,50', '2,50 - 3,00' , '3,00 - 3,50' , '3,50 - 4,00'],
widget=widgets.RadioSelectHorizontal, label="Akademik Not Ortalamanız")
accept = models.StringField(choices=['Kabul ediyorum.','Kabul etmiyorum'],
widget=widgets.RadioSelectHorizontal, label="Gönüllü olarak katıldığım bu deneyde
tarafımdan herhangi bir kişisel bilgi istenilmemiştir.")
    dep = models.StringField(choices=['STEM (Bilim, Teknoloji, Mühendislik ve
Matematik)','HASS (Beşeri, Sanat ve Sosyal Bilimler)'],
widget=widgets.RadioSelectHorizontal, label="Alan")
    age = models.StringField(choices=['≤24', '25-29', '30-39', '40-54', '≥55'],
widget=widgets.RadioSelectHorizontal,label="Yaş")
   gen = models.StringField(choices=['Kadın', 'Erkek'],
widget=widgets.RadioSelectHorizontal, label="Cinsiyet")
    edu = models.StringField(choices=['Lisans' , 'Yüksek Lisans' , 'Doktora'],
widget=widgets.RadioSelectHorizontal, label="Eğitim")
    inc = models.StringField(choices= ['500-1000', '1000-2000', '2000-3000', '3000-4000',
'4000-5000', '5000+'],
widget=widgets.RadioSelectHorizontal, label="Aylık Ortalama Gelir")
    h_inc = models.StringField(choices= ['500-1000', '1000-2000', '2000-3000', '3000-4000',
'4000-5000', '5000+'],
 widget=widgets.RadioSelectHorizontal, label="Aylık Ortalama Hanehalkı Geliri")
    env_cons_2 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
```

```
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Kaynaklarımızın daha uzun
süre dayanması için herkes ürün tüketimini artırmayı bırakmalıdır.")
    env_cons_3 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Bu ülke konut geliştirme
konusunda(tarım arazileri üzerinde yeni alışveriş merkezi inşaatı, yeni alt bölümler vb.)
daha fazla kısıtlamaya ihtiyaç duymaktadır.")
    env_cons_5 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Aşırı kirlilik üreten şirketlere
yönelik tüketici boykot programlarına başladım/katıldım.")
    env_cons_6 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Kimse bakmazsa çöp
dökerim.")
    env_cons_7 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Bugün çevresel faaliyetlere
katılımım, gelecek nesiller için çevrenin korunmasına yardımcı olacaktır.")
    env_cons_9 = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz
katılmıyorum','Ne katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle
katılıyorum'], widget=widgets.RadioSelectHorizontal, label="Kirliliğin bitki ve hayvan
yaşamına yol açtığı zararı düşündüğümde kızıyorum.")
    investment_options_1 = models.StringField(choices = ['%10 olasılıkla 8□ ve %90 olasılıkla
6,4□','%10 olasılıkla 15,4□ ve %90 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_2 = models.StringField(choices = ['%20 olasılıkla 8□ ve %80 olasılıkla
6,4□','%20 olasılıkla 15,4□ ve %80 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_3 = models.StringField(choices = ['%30 olasılıkla 8□ ve %70 olasılıkla
6,4□','%30 olasılıkla 15,4□ ve %70 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_4 = models.StringField(choices = ['%40 olasılıkla 8□ ve %60 olasılıkla
6,4□','%40 olasılıkla 15,4□ ve %60 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_5 = models.StringField(choices = ['%50 olasılıkla 8□ ve %50 olasılıkla
6,4□','%50 olasılıkla 15,4□ ve %50 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_6 = models.StringField(choices = ['%60 olasılıkla 8□ ve %40 olasılıkla
6,4□','%60 olasılıkla 15,4□ ve %40 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_7 = models.StringField(choices = ['%70 olasılıkla 8□ ve %30 olasılıkla
6,4□','%70 olasılıkla 15,4□ ve %30 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_8 = models.StringField(choices = ['%80 olasılıkla 8□ ve %20 olasılıkla
6,4□','%80 olasılıkla 15,4□ ve %20 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_9 = models.StringField(choices = ['%90 olasılıkla 8□ ve %10 olasılıkla
6,4□','%90 olasılıkla 15,4□ ve %10 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    investment_options_10 = models.StringField(choices = ['%100 olasılıkla 8□ ve %0
olasılıkla 6,4□','%100 olasılıkla 15,4□ ve %0 olasılıkla 0,4□'],
widget=widgets.RadioSelectHorizontal,label=" " )
    fate = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz katılmıyorum','Ne
```

```
katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle katılıyorum'],
widget=widgets.RadioSelectHorizontal, label="Kadere inanıyorum ve herşey tamamen özgür
irade değil.")
   believe = models.StringField(choices=['Kesinlikle katılmıyorum','Biraz katılmıyorum','Ne
katılıyorum, ne de katılmıyorum','Biraz katılıyorum','Kesinlikle katılıyorum'],
widget=widgets.RadioSelectHorizontal, label="İbadethanelerdeki hizmetlere/törenlere
katılmak dışında yalnızken dua etmiyorum.")
```

C.1.2. Poverty Game No Information Treatment

```
      from otree.api import (
   models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
   Currency as c, currency_range
)
import random

doc = """
This is a 2-player Poverty Game first introduced by Hammond(1975).
The Poverty Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
   Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
   name_in_url = 'TPOGcontN'
   players_per_group = 2
   num_rounds = 10
   instructions_template = 'TPOGcontN/instructions.html'
   table_template = 'TPOGcontN/table.html'
   # Initial amount allocated to players+
   endowment_Decider = c(9)
   endowment_Receiver = c(1)
   multiplier = 1

class Subsession(BaseSubsession):
   def creating_session(self):
      self.group_randomly()

class Group(BaseGroup):
   sent_amount = models.CurrencyField(
```

```
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount sent by P1""",
  )
  expect_decider = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P1""",
  )
  sent_back_amount = models.CurrencyField(
    doc="""Amount sent back by P2""",
    min=c(0), max=Constants.endowment_Decider-2,
  )
  expect_receiver = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2"""
  )

  def set_payoffs(self):
    p1 = self.get_player_by_id(1)
    p2 = self.get_player_by_id(2)
    p1.payoff = (Constants.endowment_Decider - self.sent_amount) *(
Constants.endowment_Receiver + self.sent_back_amount )
    p2.payoff = (Constants.endowment_Decider - self.sent_back_amount) *(
Constants.endowment_Receiver + self.sent_amount )

      class Player(BasePlayer):

        def role(self):
    return {1: 'A', 2: 'B'}[self.id_in_group]
```

Survey

C.1.3. Poverty Game EXO Treatment

```
      from otree.api import (
  models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
  Currency as c, currency_range
)
import random
import itertools

doc = """
This is a 2-player Poverty Game first introduced by Hammond(1975).
The Poverty Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
  Berg, Dickhaut, and McCabe (1995)
</a>.
```

```
"""

class Constants(BaseConstants):
    name_in_url = 'TPOGexo'
    players_per_group = 2
    num_rounds = 10
    instructions_template = 'TPOGexo/instructions.html'
    table_template = 'TPOGexo/table.html'
    # Initial amount allocated to players
    endowment_Decider = c(9)
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):
    def creating_session(self):
        if self.round_number == 1:
            colors = itertools.cycle(['MAVİ', 'KIRMIZI'])
            for p in self.get_players():
                p.color = next(colors)
        else:
            for p in self.get_players():
                p.color = p.in_round(self.round_number - 1).color
        self.group_randomly()

class Group(BaseGroup):
    sent_amount = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P1""",
    )
    expect_decider = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P1""",
    )
    sent_back_amount = models.CurrencyField(
        doc="""Amount sent back by P2""",
        min=c(0), max=Constants.endowment_Decider-2,
    )

    def set_payoffs(self):
        p1 = self.get_player_by_id(1)
        p2 = self.get_player_by_id(2)
        p1.payoff = (Constants.endowment_Decider - self.sent_amount) *(
                Constants.endowment_Receiver + self.sent_back_amount )
        p2.payoff = (Constants.endowment_Decider - self.sent_back_amount) *(
                Constants.endowment_Receiver + self.sent_amount )

class Player(BasePlayer):
    color = models.StringField()
    overall_payoff = models.CurrencyField(initial=0)
```

```
        def role(self):
    return {1: 'A', 2: 'B'}[self.id_in_group]

Survey
```

C.1.4. Poverty Game ENDO Treatment

```
    from otree.api import (
  models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
  Currency as c, currency_range
)
import random
import itertools

doc = """
This is a 2-player Poverty Game first introduced by Hammond(1975).
The Poverty Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
  Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
  name_in_url = 'TPOGendo'
  players_per_group = 2
  num_rounds = 10
  instructions_template = 'TPOGendo/instructions.html'
  table_template = 'TPOGendo/table.html'
  # Initial amount allocated to players
  endowment_Decider = c(9)
  endowment_Receiver = c(1)
  multiplier = 1

class Subsession(BaseSubsession):
  def creating_session(self):
    if self.round_number == 1:
      colors = itertools.cycle(['MAVİ', 'KIRMIZI'])
      for p in self.get_players():
        p.color = next(colors)
    else:
      for p in self.get_players():
        p.color = p.in_round(self.round_number - 1).color
```

```
    self.group_randomly()

def assign_groups(self):
    all_players = self.get_players()
    blue_players = [p for p in all_players if p.color == 'MAVİ']
    red_players = [p for p in all_players if p.color == 'KIRMIZI']
    player_iter_list = self.get_players()
    print("before:{}".format(player_iter_list))
    player_iter_list.sort(key=lambda x: x.WTP, reverse=True)
    print("after:{}".format(player_iter_list))

    blue_players.sort(key=lambda x: x.WTP, reverse=True)
    red_players.sort(key=lambda x: x.WTP, reverse=True)

    group_matrix = []
    rand_num = random.randint(0, 10)
    for pl in player_iter_list:
        print(("searching for player:{}".format(pl.participant.id_in_session)))

        if pl in all_players:
            all_players.remove(pl)
            if pl.color == "KIRMIZI":
                red_players.remove(pl)
            else:
                blue_players.remove(pl)
            print("WTP is : {}, random number is : {}".format(pl.WTP, rand_num))
            if pl.WTP >= rand_num:
                print(("player:{} won".format(pl)))
                if pl.color == 'KIRMIZI':
                    print(("player:{} is red".format(pl)))
                    if len(red_players) > 0:
                        partner = red_players[0]
                        # partner = random.choice(red_players)
                    else:
                        partner = blue_players[-1]
                        # partner = random.choice(blue_players)
                elif pl.color == 'MAVİ':
                    print(("player:{} is blue".format(pl)))
                    if len(blue_players) > 0:
                        partner = blue_players[0]
                        # partner = random.choice(blue  players)
                    else:
                        partner = red_players[-1]
                        # partner = random.choice(red_players)
            else:
                print(("player:{} lost".format(pl)))
                # partner = random.choice(all_players)

                if pl.color == 'KIRMIZI':
                    print(("player:{} is red".format(pl)))
```

```
                if len(blue_players) > 0:
                    partner = blue_players[-1]
                    # partner = random.choice(red_players)
                else:
                    partner = red_players[0]
                    # partner = random.choice(blue_players)
            elif pl.color == 'MAVİ':
                print(("player:{} is blue".format(pl)))
                if len(red_players) > 0:
                    partner = red_players[-1]
                    # partner = random.choice(blue_players)
                else:
                    partner = blue_players[0]
                    # partner = random.choice(red  players)

            print("partner : {}".format(partner))
            print(("all players:{}".format(all_players)))
            all_players.remove(partner)
            if partner.color == "KIRMIZI":
                red_players.remove(partner)
            else:
                blue_players.remove(partner)

            group_matrix.append([pl, partner])

            print(("blue players :{}".format(blue_players)))
            print(("red players:{}".format(red_players)))
            print("group matrix: {}".format(group_matrix))

        self.set_group_matrix(group_matrix)
        print(self.get_group_matrix())


class Group(BaseGroup):
    sent_amount = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P1""",
    )
    expect_decider = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P1""",
    )
    sent_back_amount = models.CurrencyField(
        doc="""Amount sent back by P2""",
        min=c(0), max=Constants.endowment_Decider-2,
    )

    def set_payoffs(self):
        p1 = self.get_player_by_id(1)
        p2 = self.get_player_by_id(2)
```

```
        p1.payoff = (Constants.endowment_Decider - self.sent_amount) * (
                Constants.endowment_Receiver + self.sent_back_amount)
        p2.payoff = (Constants.endowment_Decider - self.sent_back_amount) * (
                Constants.endowment_Receiver + self.sent_amount)


class Player(BasePlayer):
    color = models.StringField()
    WTP = models.IntegerField(initial=0)
    overall_payoff = models.IntegerField(initial=0)
    session_random_number = models.IntegerField(initial=10)

Survey
```

C.1.5. Pension Game Control Treatment

```
        from otree.api import (
    models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
    Currency as c, currency_range
)
import random

doc = """
This is a Pension Game first introduced by Hammond(1975).
The Pension Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
    Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
    name_in_url = 'TPEGcont'
    players_per_group = 8
    num_rounds = 10
    instructions_template = 'TPEGcont/instructions.html'
    table_template = 'TPEGcont/table.html'
    # Initial amount allocated to players+
    endowment_Decider = c(9)
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):
```

```
    def creating_session(self):
        self.group_randomly()
        rol_lst = ['P2', 'P3', 'P4', 'P5', 'P6', 'P7']
        for p in self.get_players():
            round = self.round_number if self.round_number <=8 else self.round_number-8
            if p.id_in_subsession == round:
                p.rol = 'P1'
            elif p.id_in_subsession == (9-round):
                p.rol = 'P8'
            else:
                random.shuffle(rol_lst)
                p.rol = rol_lst.pop(0)
        for p in self.get_players():
            print('P{0}:{1}'.format(p.id_in_subsession, p.rol))
        print('---------------')

class Group(BaseGroup):
    sent_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P2""",
    )
    expect_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P3""",
    )
    expect_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P3""",
    )
    sent_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P4""",
            )
    expect_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P4""",
    )
    sent_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P5""",
    )
    expect_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P5""",
    )
```

```
    sent_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P6""",
    )
    expect_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P6""",
    )
    sent_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P7""",
    )
    expect_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P7""",
    )
    sent_8 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P8""",
    )

    def set_payoffs(self):

        for pl in self.get_players():
            if pl.rol == 'P1':
                pl.payoff = 2 *(Constants.endowment_Receiver + self.sent_2)
            elif pl.rol == 'P2':
                pl.payoff = (Constants.endowment_Decider - self.sent_2) *(
Constants.endowment_Receiver + self.sent_3)
            elif pl.rol == 'P3':
                pl.payoff = (Constants.endowment_Decider - self.sent_3) *(
Constants.endowment_Receiver + self.sent_4)
            elif pl.rol == 'P4':
                pl.payoff = (Constants.endowment_Decider - self.sent_4) *(
Constants.endowment_Receiver + self.sent_5)
            elif pl.rol == 'P5':
                pl.payoff = (Constants.endowment_Decider - self.sent_5) *(
Constants.endowment_Receiver + self.sent_6)
            elif pl.rol == 'P6':
                pl.payoff = (Constants.endowment_Decider - self.sent_6) *(
Constants.endowment_Receiver + self.sent_7)
            elif pl.rol == 'P7':
                pl.payoff = (Constants.endowment_Decider - self.sent_7) *(
Constants.endowment_Receiver + self.sent_8)
            elif pl.rol == 'P8':
                pl.payoff = (Constants.endowment_Decider - self.sent_8) *( (
Constants.endowment_Receiver + self.sent_2) + ( Constants.endowment_Receiver +
self.sent_3) + ( Constants.endowment_Receiver + self.sent_4) + (
Constants.endowment_Receiver + self.sent_5) + ( Constants.endowment_Receiver +
self.sent_6)+ ( Constants.endowment_Receiver + self.sent_7) + (
```

```
Constants.endowment_Receiver + self.sent_8)) / 7


class Player(BasePlayer):

    rol = models.StringField(initial='')

    overall_payoff = models.CurrencyField(initial=0)

Survey
```

C.1.6. Pension Game EXO Treatment

```
        from otree.api import (
    models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
    Currency as c, currency_range
)
import random
import itertools

doc = """
This is a Pension Game first introduced by Hammond(1975).
The Pension Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
    Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
    name_in_url = 'TPEGexo'
    players_per_group = 8
    num_rounds = 10
    instructions_template = 'TPEGexo/instructions.html'
    table_template = 'TPEGexo/table.html'
    # Initial amount allocated to players
    endowment_Decider = c(9)
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):

    def creating_session(self):
```

```
        if self.round_number == 1:
            colors = itertools.cycle(['MAVİ', 'KIRMIZI'])
            for p in self.get_players():
                p.color = next(colors)
        else:
            for p in self.get_players():
                p.color = p.in_round(self.round_number - 1).color

        self.group_randomly()
        rol_lst = ['P2', 'P3', 'P4', 'P5', 'P6', 'P7']
        for p in self.get_players():
            round = self.round_number if self.round_number <= 8 else self.round_number -
8
            if p.id_in_subsession == round:
                p.rol = 'P1'
            elif p.id_in_subsession == (9 - round):
                p.rol = 'P8'
            else:
                random.shuffle(rol_lst)
                p.rol = rol_lst.pop(0)
        for p in self.get_players():
            print('P{0}:{1}'.format(p.id_in_subsession, p.rol))
        print('---------------')

class Group(BaseGroup):

    sent_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P2""",
    )
    expect_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P3""",
    )
    expect_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P4""",
            )
    expect_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
```

```
    sent_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P5""",
    )
    expect_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P6""",
    )
    expect_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P7""",
    )
    expect_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_8 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P8""",
    )

    def set_payoffs(self):

        for pl in self.get_players():
            if pl.rol == 'P1':
                pl.payoff = 2 *(Constants.endowment_Receiver + self.sent_2)
            elif pl.rol == 'P2':
                pl.payoff = (Constants.endowment_Decider - self.sent_2) *(
Constants.endowment_Receiver + self.sent_3)
            elif pl.rol == 'P3':
                pl.payoff = (Constants.endowment_Decider - self.sent_3) *(
Constants.endowment_Receiver + self.sent_4)
            elif pl.rol == 'P4':
                pl.payoff = (Constants.endowment_Decider - self.sent_4) *(
Constants.endowment_Receiver + self.sent_5)
            elif pl.rol == 'P5':
                pl.payoff = (Constants.endowment_Decider - self.sent_5) *(
Constants.endowment_Receiver + self.sent_6)
            elif pl.rol == 'P6':
                pl.payoff = (Constants.endowment_Decider - self.sent_6) *(
Constants.endowment_Receiver + self.sent_7)
            elif pl.rol == 'P7':
```

```
            pl.payoff = (Constants.endowment_Decider - self.sent_7) *(
Constants.endowment_Receiver + self.sent_8)
        elif pl.rol == 'P8':
            pl.payoff = (Constants.endowment_Decider - self.sent_8) *( (
Constants.endowment_Receiver + self.sent_2) + ( Constants.endowment_Receiver +
self.sent_3) + ( Constants.endowment_Receiver + self.sent_4) + (
Constants.endowment_Receiver + self.sent_5) + ( Constants.endowment_Receiver +
self.sent_6)+ ( Constants.endowment_Receiver + self.sent_7) + (
Constants.endowment_Receiver + self.sent_8)) / 7

class Player(BasePlayer):
    color = models.StringField()
    overall_payoff = models.CurrencyField(initial=0)
    rol = models.StringField(initial=0)

Survey
```

C.1.7. Pension Game ENDO-L Treatment

```
    from otree.api import (
    models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
    Currency as c, currency_range
)
import random
import itertools

doc = """
This is a Pension Game first introduced by Hammond(1975).
The Pension Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
    Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
    name_in_url = 'TPEGendoL'
    players_per_group = None
    num_rounds = 10
    instructions_template = 'TPEGendoL/instructions.html'
    table_template = 'TPEGendoL/table.html'
    # Initial amount allocated to players
    endowment_Decider = c(9)
```

```
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):
    def creating_session(self):
        if self.round_number == 1:
            colors = itertools.cycle(['MAVİ', 'KIRMIZI'])
            for p in self.get_players():
                p.color = next(colors)
        else:
            for p in self.get_players():
                p.color = p.in_round(self.round_number - 1).color
        self.group_randomly()

    def assign_sequence(self):
        blue_players = [p for p in self.get_players() if p.color == 'MAVİ']
        blue_players.sort(key=lambda x: x.WTP, reverse=True)

        red_players = [p for p in self.get_players() if p.color == 'KIRMIZI']
        red_players.sort(key=lambda x: x.WTP, reverse=True)

        rand_num = random.randint(0, 10)
        if blue_players[0].WTP == red_players[0].WTP:
            pl = random.choice([blue_players[0], red_players[0]])
            if pl.color == 'MAVİ' :
                pl = blue_players.pop(0)
            else:
                pl = red_players.pop(0)
        elif blue_players[0].WTP > red_players[0].WTP:
            pl = blue_players.pop(0)
        else:
            pl = red_players.pop(0)
        pl.sequence = 8
        pl.session_random_number = rand_num
        print("player:{0} set to sequence 8".format(pl.participant.id_in_session))
        for index in range(7, 1, -1):  # self.session.config['num_demo_participants']
            pl.session_random_number = rand_num
            print("searching for player:{0} color :{1}".format(pl.participant.id_in_session,
pl.color))
            print("WTP is : {}, random number is : {}".format(pl.WTP, rand_num))

            if pl.WTP >= rand_num:
                print("player:{} won".format(pl.participant.id_in_session))
                if pl.color == 'KIRMIZI':
                    if len(red_players) > 0:
                        next_pl = red_players.pop(0)
                    else:
                        next_pl = blue_players.pop(-1)
                elif pl.color == 'MAVİ':
                    if len(blue_players) > 0:
```

```
                next_pl = blue_players.pop(0)
            else:
                next_pl = red_players.pop(-1)
        else:
            print("player:{} lost".format(pl.participant.id_in_session))
            if pl.color == 'KIRMIZI':
                if len(blue_players) > 0:
                    next_pl = blue_players.pop(0)
                else:
                    next_pl = red_players.pop(-1)
            elif pl.color == 'MAVİ':
                if len(red_players) > 0:
                    next_pl = red_players.pop(0)
                else:
                    next_pl = blue_players.pop(-1)
        print("next player:{0} color :{1}".format(next_pl.participant.id_in_session,
next_pl.color))

        next_pl.sequence = index
        pl.session_random_number = rand_num

        print("player:{0} set to sequence
{1}".format(next_pl.participant.id_in_session, index))
        pl = next_pl
        pl.session_random_number = rand_num


    for pl in blue_players + red_players:
        pl.sequence = 1
        pl.session_random_number = rand_num
        print("player:{0} set to sequence {1}".format(pl.participant.id_in_session,
pl.sequence))

class Group(BaseGroup):

    sent_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount sent by P2""",
    )
    expect_2 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P3""",
    )
    expect_3 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
```

```
    )
    sent_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P4""",
            )
    expect_4 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P5""",
    )
    expect_5 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P6""",
    )
    expect_6 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P7""",
    )
    expect_7 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider-2,
        doc="""Amount expected by P2""",
    )
    sent_8 = models.CurrencyField(
        min=0, max=Constants.endowment_Decider - 2,
        doc="""Amount sent by P8""",
    )

    def set_payoffs(self):

        for pl in self.get_players():
            if pl.sequence == 1:
                pl.payoff = 2 *(Constants.endowment_Receiver + self.sent_2)
            elif pl.sequence == 2:
                pl.payoff = (Constants.endowment_Decider - self.sent_2) *(
Constants.endowment_Receiver + self.sent_3)
            elif pl.sequence == 3:
                pl.payoff = (Constants.endowment_Decider - self.sent_3) *(
Constants.endowment_Receiver + self.sent_4)
            elif pl.sequence == 4:
```

```
            pl.payoff = (Constants.endowment_Decider - self.sent_4) *(
Constants.endowment_Receiver + self.sent_5)
        elif pl.sequence == 5:
            pl.payoff = (Constants.endowment_Decider - self.sent_5) *(
Constants.endowment_Receiver + self.sent_6)
        elif pl.sequence == 6:
            pl.payoff = (Constants.endowment_Decider - self.sent_6) *(
Constants.endowment_Receiver + self.sent_7)
        elif pl.sequence == 7:
            pl.payoff = (Constants.endowment_Decider - self.sent_7) *(
Constants.endowment_Receiver + self.sent_8)
        elif pl.sequence == 8:
            pl.payoff = (Constants.endowment_Decider - self.sent_8) *( (
Constants.endowment_Receiver + self.sent_2) + ( Constants.endowment_Receiver +
self.sent_3) + ( Constants.endowment_Receiver + self.sent_4) + (
Constants.endowment_Receiver + self.sent_5) + ( Constants.endowment_Receiver +
self.sent_6)+ ( Constants.endowment_Receiver + self.sent_7) + (
Constants.endowment_Receiver + self.sent_8)) / 7


class Player(BasePlayer):
    color = models.StringField()
    WTP = models.CurrencyField(initial=0)
    overall_payoff = models.CurrencyField(initial=0)
    session_random_number = models.IntegerField(initial=10)
    sequence = models.IntegerField(initial=0)

Survey
```

C.1.8. Pension Game ENDO-R Treatment

```
        from otree.api import (
    models, widgets, BaseConstants, BaseSubsession, BaseGroup, BasePlayer,
    Currency as c, currency_range
)
import random
import itertools

doc = """
This is a Pension Game first introduced by Hammond(1975).
The Pension Game is a version of the standard investment game in which the
amount sent by player 1 is tripled.
It was first proposed by
<a
href="http://econweb.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20
GEB%201995.pdf" target="_blank">
```

```
    Berg, Dickhaut, and McCabe (1995)
</a>.
"""

class Constants(BaseConstants):
    name_in_url = 'TPEGendoR'
    players_per_group = None
    num_rounds = 10
    instructions_template = 'TPEGendoR/instructions.html'
    table_template = 'TPEGendoR/table.html'
    # Initial amount allocated to players
    endowment_Decider = c(9)
    endowment_Receiver = c(1)
    multiplier = 1

class Subsession(BaseSubsession):

    def creating_session(self):
        if self.round_number == 1:
            colors = itertools.cycle(['MAVİ', 'KIRMIZI'])
            for p in self.get_players():
                p.color = next(colors)
        else:
            for p in self.get_players():
                p.color = p.in_round(self.round_number - 1).color
        self.group_randomly()

    def assign_sequence(self):
        blue_players = [p for p in self.get_players() if p.color == 'MAVİ']
        blue_players.sort(key=lambda x: x.WTP, reverse=True)

        red_players = [p for p in self.get_players() if p.color == 'KIRMIZI']
        red_players.sort(key=lambda x: x.WTP, reverse=True)

        rand_num = random.randint(0, 10)
        if blue_players[0].WTP == red_players[0].WTP:
            pl = random.choice([blue_players[0], red_players[0]])
            if pl.color == 'MAVİ' :
                pl = blue_players.pop(0)
            else:
                pl = red_players.pop(0)
        elif blue_players[0].WTP > red_players[0].WTP:
            pl = blue_players.pop(0)
        else:
            pl = red_players.pop(0)
        pl.sequence = 1
        pl.session_random_number = rand_num
        print("player:{0} set to sequence 1".format(pl.participant.id_in_session))
        for index in range(2, 8):  # self.session.config['num_demo_participants']
            pl.session_random_number = rand_num
```

```
        print("searching for player:{0} color :{1}".format(pl.participant.id_in_session,
pl.color))
        print("WTP is : {}, random number is : {}".format(pl.WTP, rand_num))
        if pl.WTP >= rand_num:
            print("player:{} won".format(pl.participant.id_in_session))
            if pl.color == 'KIRMIZI':
                if len(red_players) > 0:
                    next_pl = red_players.pop(0)
                else:
                    next_pl = blue_players.pop(-1)
            elif pl.color == 'MAVİ':
                if len(blue_players) > 0:
                    next_pl = blue_players.pop(0)
                else:
                    next_pl = red_players.pop(-1)
        else:
            print("player:{} lost".format(pl.participant.id_in_session))
            if pl.color == 'KIRMIZI':
                if len(blue_players) > 0:
                    next_pl = blue_players.pop(-1)
                else:
                    next_pl = red_players.pop(0)
            elif pl.color == 'MAVİ':
                if len(red_players) > 0:
                    next_pl = red_players.pop(-1)
                else:
                    next_pl = blue_players.pop(0)
        print("next player:{0} color :{1}".format(next_pl.participant.id_in_session,
next_pl.color))
        next_pl.sequence = index
        pl.session_random_number = rand_num
        print("player:{0} set to sequence
{1}".format(next_pl.participant.id_in_session, index))
        pl = next_pl
        pl.session_random_number = rand_num

    for pl in blue_players + red_players:
        pl.sequence = self.session.config['num_demo_participants']
        pl.session_random_number = rand_num
        print("player:{0} set to sequence {1}".format(pl.participant.id_in_session,
pl.sequence))

class Group(BaseGroup):


  sent_2 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount sent by P2""",
  )
  expect_2 = models.CurrencyField(
```

```
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_3 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P3""",
)
expect_3 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_4 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P4""",
        )
expect_4 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_5 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P5""",
)
expect_5 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_6 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P6""",
)
expect_6 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_7 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P7""",
)
expect_7 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider-2,
    doc="""Amount expected by P2""",
)
sent_8 = models.CurrencyField(
    min=0, max=Constants.endowment_Decider - 2,
    doc="""Amount sent by P8""",
)

def set_payoffs(self):
    for pl in self.get_players():
```

```
        if pl.sequence == 1:
            pl.payoff = 2 *(Constants.endowment_Receiver + self.sent_2)
        elif pl.sequence == 2:
            pl.payoff = (Constants.endowment_Decider - self.sent_2) *(
Constants.endowment_Receiver + self.sent_3)
        elif pl.sequence == 3:
            pl.payoff = (Constants.endowment_Decider - self.sent_3) *(
Constants.endowment_Receiver + self.sent_4)
        elif pl.sequence == 4:
            pl.payoff = (Constants.endowment_Decider - self.sent_4) *(
Constants.endowment_Receiver + self.sent_5)
        elif pl.sequence == 5:
            pl.payoff = (Constants.endowment_Decider - self.sent_5) *(
Constants.endowment_Receiver + self.sent_6)
        elif pl.sequence == 6:
            pl.payoff = (Constants.endowment_Decider - self.sent_6) *(
Constants.endowment_Receiver + self.sent_7)
        elif pl.sequence == 7:
            pl.payoff = (Constants.endowment_Decider - self.sent_7) *(
Constants.endowment_Receiver + self.sent_8)
        elif pl.sequence == 8:
            pl.payoff = (Constants.endowment_Decider - self.sent_8) *( (
Constants.endowment_Receiver + self.sent_2) + ( Constants.endowment_Receiver +
self.sent_3) + ( Constants.endowment_Receiver + self.sent_4) + (
Constants.endowment_Receiver + self.sent_5) + ( Constants.endowment_Receiver +
self.sent_6)+ ( Constants.endowment_Receiver + self.sent_7) + (
Constants.endowment_Receiver + self.sent_8)) / 7

class Player(BasePlayer):
    color = models.StringField()
    WTP = models.CurrencyField(initial=0)
    overall_payoff = models.CurrencyField(initial=0)
    session_random_number = models.IntegerField(initial=10)
    sequence = models.IntegerField(initial=0)
```

Survey

C.2. pages.py

C.2.1. Example: Poverty Game Control Treatment

```
from otree.api import Currency as c, currency_range
from ._builtin import Page, WaitPage, SurveyPage
from .models import Constants
```

```
class Introduction(Page):
    def vars_for_template(self):
        partner = self.player.get_others_in_group()[0]
        return {
            'round_number': '{}' .format(self.round_number)
        }
class instructions(Page):
    def is_displayed(self):
        return self.round_number == 1
    form_model = 'player'
    form_fields = ['accept']

class Send(Page):
    """This page is only for P1
    P1 sends amount (all, some, or none) to P2 """

    form_model = 'group'
    form_fields = ['sent_amount' , 'expect_decider']

    def is_displayed(self):
        return self.player.id_in_group == 1

    def vars_for_template(self):
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
        }

class SendBackWaitPage(WaitPage):
    pass

class SendBack(Page):
    """This page is only for P2
    P2 sends back some amount (of the amount received) to P1"""

    form_model = 'group'
    form_fields = ['sent_back_amount']

    def is_displayed(self):
        return self.player.id_in_group == 2

    def vars_for_template(self):
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'earnings': Constants.endowment_Receiver + self.group.sent_amount,
        }
```

```
class ResultsWaitPage(WaitPage):
    def after_all_players_arrive(self):
        self.group.set_payoffs()


class Results(Page):
    """This page displays the earnings of each player"""

    def vars_for_template(self):
        return {
            'round_number': '{}' .format(self.round_number),
            'player1_period1_amount': Constants.endowment_Decider -
self.group.sent_amount,
            'player1_period2_amount': Constants.endowment_Receiver +
self.group.sent_back_amount,
            'player2_period1_amount': Constants.endowment_Receiver +
self.group.sent_amount,
            'player2_period2_amount': Constants.endowment_Decider -
self.group.sent_back_amount,
            'player1_payoff' : (Constants.endowment_Decider - self.group.sent_amount) *
(Constants.endowment_Receiver + self.group.sent_back_amount),
            'player2_payoff' : (Constants.endowment_Receiver + self.group.sent_amount)
* (Constants.endowment_Decider - self.group.sent_back_amount)

        }
class OverallResults(Page):
    """This page displays the earnings of each player"""

    def is_displayed(self):
        return self.round_number == Constants.num_rounds

    def vars_for_template(self):
        cumulative_payoff = sum([p.payoff for p in self.player.in_all_rounds()])
        return {
            'overall_earnings': cumulative_payoff
        }

class Survey(SurveyPage):
    """This page displays the questionnaire for each player"""
    def is_displayed(self):
        return self.round_number == Constants.num_rounds
    form_model = 'player'
    form_fields = ['dep','edu','age','gen','inc',
                   'h_inc',
                   'investment_options_1',
                   'investment_options_2',
                   'investment_options_3',
                   'investment_options_4',
```

```
            'investment_options_5',
            'investment_options_6',
            'investment_options_7',
            'investment_options_8',
            'investment_options_9',
            'investment_options_10',
            'env_cons_2',
            'env_cons_3',
            'env_cons_5',
            'env_cons_6',
            'env_cons_7',
            'env_cons_9',
            'fate',
            'believe',
            'gpa'
            ]

page_sequence = [

    instructions,
    Introduction,
    Send,
    SendBackWaitPage,
    SendBack,
    ResultsWaitPage,
    Results,
    Survey,
    OverallResults
]
```

C.2.2. Example: Pension Game ENDO-R Treatment

```
        from otree.api import Currency as c, currency_range
from ._builtin import Page, WaitPage
from .models import Constants
class Introduction(Page):
    form_model = 'player'
    form_fields = ['WTP']
    def vars_for_template(self):
        return {
            'your_color': '{}'.format(self.player.color),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider),
            'round_number': '{}' .format(self.round_number)
        }
class instructions(Page):
    def is_displayed(self):
```

```
        return self.round_number == 1
    form_model = 'player'
    form_fields = ['accept']
class ShuffleWaitPage(WaitPage):
    wait_for_all_groups = True
    def after_all_players_arrive(self):
        self.subsession.assign_sequence()
class SendBackWaitPage(WaitPage):
    pass
class P8(Page):
    """This page is only for Player with sequence 8 """
    form_model = 'group'
    form_fields = ['sent_8']
    def is_displayed(self):
        return self.player.sequence == 8
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 7:
                partner_color = p.color
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2,
            'p2_receiver': Constants.endowment_Receiver + self.group.sent_3,
            'p3_decider': Constants.endowment_Decider - self.group.sent_3,
            'p3_receiver': Constants.endowment_Receiver + self.group.sent_4,
            'p4_decider': Constants.endowment_Decider - self.group.sent_4,
            'p4_receiver': Constants.endowment_Receiver + self.group.sent_5,
            'p5_decider': Constants.endowment_Decider - self.group.sent_5,
            'p5_receiver': Constants.endowment_Receiver + self.group.sent_6,
            'p6_decider': Constants.endowment_Decider - self.group.sent_6,
            'p6_receiver': Constants.endowment_Receiver + self.group.sent_7,
            'p7_decider': Constants.endowment_Decider - self.group.sent_7,
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color)
        }
class P7(Page):
    """This page is only for P7"""
    form_model = 'group'
    form_fields = ['sent_7' , 'expect_7']
    def is_displayed(self):
        return self.player.sequence == 7
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 6:
                partner_color = p.color
        return {
            'round_number': '{}' .format(self.round_number),
```

```
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2,
            'p2_receiver': Constants.endowment_Receiver + self.group.sent_3,
            'p3_decider': Constants.endowment_Decider - self.group.sent_3,
            'p3_receiver': Constants.endowment_Receiver + self.group.sent_4,
            'p4_decider': Constants.endowment_Decider - self.group.sent_4,
            'p4_receiver': Constants.endowment_Receiver + self.group.sent_5,
            'p5_decider': Constants.endowment_Decider - self.group.sent_5,
            'p5_receiver': Constants.endowment_Receiver + self.group.sent_6,
            'p6_decider': Constants.endowment_Decider - self.group.sent_6,
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color)
        }
class P6(Page):
    """This page is only for P6"""
    form_model = 'group'
    form_fields = ['sent_6' , 'expect_6']
    def is_displayed(self):
        return self.player.sequence == 6
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 5:
                partner_color = p.color
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2,
            'p2_receiver': Constants.endowment_Receiver + self.group.sent_3,
            'p3_decider': Constants.endowment_Decider - self.group.sent_3,
            'p3_receiver': Constants.endowment_Receiver + self.group.sent_4,
            'p4_decider': Constants.endowment_Decider - self.group.sent_4,
            'p4_receiver': Constants.endowment_Receiver + self.group.sent_5,
            'p5_decider': Constants.endowment_Decider - self.group.sent_5,
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color)
        }
class P5(Page):
    """This page is only for P7"""
    form_model = 'group'
    form_fields = ['sent_5' , 'expect_5']
    def is_displayed(self):
        return self.player.sequence == 5
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 4:
                partner_color = p.color
```

```
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2,
            'p2_receiver': Constants.endowment_Receiver + self.group.sent_3,
            'p3_decider': Constants.endowment_Decider - self.group.sent_3,
            'p3_receiver': Constants.endowment_Receiver + self.group.sent_4,
            'p4_decider': Constants.endowment_Decider - self.group.sent_4,
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color)
        }
class P4(Page):
    """This page is only for P4"""
    form_model = 'group'
    form_fields = ['sent_4', 'expect_4']
    def is_displayed(self):
        return self.player.sequence == 4
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 3:
                partner_color = p.color
        return {
            'round_number': '{}' .format(self.round_number),
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2,
            'p2_receiver': Constants.endowment_Receiver + self.group.sent_3,
            'p3_decider': Constants.endowment_Decider - self.group.sent_3,
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color)
        }
class P3(Page):
    """This page is only for P3"""
    form_model = 'group'
    form_fields = ['sent_3' , 'expect_3' ]
    def is_displayed(self):
        return self.player.sequence == 3
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 2:
                partner_color = p.color
        return {
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color),
            'round_number': '{}' .format(self.round_number),
```

```
            'p1_receiver': Constants.endowment_Receiver + self.group.sent_2,
            'p2_decider': Constants.endowment_Decider - self.group.sent_2
        }
class P2(Page):
    """This page is only for P2"""
    form_model = 'group'
    form_fields = ['sent_2' , 'expect_2' ]
    def is_displayed(self):
        return self.player.sequence == 2
    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 1:
                partner_color = p.color
        return {
            'prompt': '0 ile {} arasında bir sayı
giriniz.'.format(Constants.endowment_Decider-2),
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color),
            'round_number': '{}' .format(self.round_number)
        }
class P1(Page):
    """This page is only for P1"""

    def is_displayed(self):
        return self.player.sequence == 1

    def vars_for_template(self):
        for p in self.player.get_others_in_group():
            if p.sequence == 2:
                partner_color = p.color
        return {
            'your_color': '{}'.format(self.player.color),
            'partner_color': '{}'.format(partner_color),
            'round_number': '{}' .format(self.round_number)
        }
class ResultsWaitPage(WaitPage):
    def after_all_players_arrive(self):
        self.group.set_payoffs()
class Results(Page):
    """This page displays the earnings of each player"""
    def vars_for_template(self):
        p2_transfer = self.group.sent_2
        p3_transfer = self.group.sent_3
        p4_transfer = self.group.sent_4
        p5_transfer = self.group.sent_5
        p6_transfer = self.group.sent_6
        p7_transfer = self.group.sent_7
        p8_transfer = self.group.sent_8
        average_transfer = (self.group.sent_2+\
self.group.sent_3+self.group.sent_4+self.group.sent_5+self.group.sent_6+self.group.sen
```

```
t_7+self.group.sent_8)/7
        p1_receiver = Constants.endowment_Receiver + self.group.sent_2
        p2_decider = Constants.endowment_Decider - self.group.sent_2
        p2_receiver = Constants.endowment_Receiver + self.group.sent_3
        p3_decider = Constants.endowment_Decider - self.group.sent_3
        p3_receiver = Constants.endowment_Receiver + self.group.sent_4
        p4_decider = Constants.endowment_Decider - self.group.sent_4
        p4_receiver = Constants.endowment_Receiver + self.group.sent_5
        p5_decider = Constants.endowment_Decider - self.group.sent_5
        p5_receiver = Constants.endowment_Receiver + self.group.sent_6
        p6_decider = Constants.endowment_Decider - self.group.sent_6
        p6_receiver = Constants.endowment_Receiver + self.group.sent_7
        p7_decider = Constants.endowment_Decider - self.group.sent_7
        p7_receiver = Constants.endowment_Receiver + self.group.sent_8
        p8_decider = Constants.endowment_Decider - self.group.sent_8
        p8_receiver = Constants.endowment_Receiver + (self.group.sent_2+\
self.group.sent_3+self.group.sent_4+self.group.sent_5+self.group.sent_6+self.group.sen
t_7+self.group.sent_8)/7
        p1_payoff = 2 * p1_receiver
        p2_payoff = p2_decider * p2_receiver
        p3_payoff = p3_decider * p3_receiver
        p4_payoff = p4_decider * p4_receiver
        p5_payoff = p5_decider * p5_receiver
        p6_payoff = p6_decider * p6_receiver
        p7_payoff = p7_decider * p7_receiver
        p8_payoff = p8_decider *
(p1_receiver+p2_receiver+p3_receiver+p4_receiver+p5_receiver+p6_receiver+p7_rece
iver)/7
        return {
            'p2_transfer':p2_transfer,
            'p3_transfer':p3_transfer,
            'p4_transfer':p4_transfer,
            'p5_transfer':p5_transfer,
            'p6_transfer':p6_transfer,
            'p7_transfer':p7_transfer,
            'p8_transfer':p8_transfer,
            'average_transfer':average_transfer,
            'p1_receiver':p1_receiver,
            'p2_decider':p2_decider,
            'p2_receiver':p2_receiver,
            'p3_decider':p3_decider,
            'p3_receiver':p3_receiver,
            'p4_decider':p4_decider,
            'p4_receiver':p4_receiver,
            'p5_decider':p5_decider,
            'p5_receiver':p5_receiver,
            'p6_decider':p6_decider,
            'p6_receiver':p6_receiver,
            'p7_decider':p7_decider,
            'p7_receiver':p7_receiver,
```

```
            'p8_decider':p8_decider,
            'p8_receiver':p8_receiver,

            'p1_payoff':p1_payoff,
            'p2_payoff':p2_payoff,
            'p3_payoff':p3_payoff,
            'p4_payoff':p4_payoff,
            'p5_payoff':p5_payoff,
            'p6_payoff':p6_payoff,
            'p7_payoff':p7_payoff,
            'p8_payoff':p8_payoff
        }
class OverallResults(Page):
    """This page displays the end of game data """
    def is_displayed(self):
        return self.round_number == Constants.num_rounds
    def vars_for_template(self):
        cumulative_payoff = sum([p.payoff for p in self.player.in_all_rounds()])
        return {
            'overall_earnings': cumulative_payoff
        }
class Survey(Page):
    """This page displays the questionnaire for each player"""
    def is_displayed(self):
        return self.round_number == Constants.num_rounds
    form_model = 'player'
    form_fields = ['dep','edu','age','gen','inc',
                   'h_inc',
                   'investment_options_1',
                   'investment_options_2',
                   'investment_options_3',
                   'investment_options_4',
                   'investment_options_5',
                   'investment_options_6',
                   'investment_options_7',
                   'investment_options_8',
                   'investment_options_9',
                   'investment_options_10',
                   'env_cons_2',
                   'env_cons_3',
                   'env_cons_5',
                   'env_cons_6',
                   'env_cons_7',
                   'env_cons_9',
                   'fate',
                   'believe',
                   'gpa'
                   ]
page_sequence = [
    instructions,
```

```
    Introduction,
    ShuffleWaitPage,
    P1,
    SendBackWaitPage,
    P2,
    SendBackWaitPage,
    P3,
    SendBackWaitPage,
    P4,
    SendBackWaitPage,
    P5,
    SendBackWaitPage,
    P6,
    SendBackWaitPage,
    P7,
    SendBackWaitPage,
    P8,
    ResultsWaitPage,
    Results,
    Survey,
    OverallResults
]
```

APPENDIX D - ETHICS COMMITTEE APPROVAL

T.C.
Galatasaray Üniversitesi Rektörlüğü'ne

İlgi : 2392 Sayı ve 03.03.2020 Tarih.
Konu: Dr. Bilge Öztürk Göktuna'nın tarihli dilekçesi.

Sosyal Bilimler Enstitüsü Yüksek Lisans Öğrencisi 172111101 nolu Sayın Emine Özge Yurdakurban'ın ve Danışmanı Sayın Dr. Bilge Öztürk Göktuna'nın dilekçeleri ve ekleri incelendi. Kendileri Sayın Yurdakurban'ın tez çalışması kapsamında yapmak istedikleri ankete ilişkin "etik kurul onayı" talep etmişlerdir.

Söz konusu anket çalışmasının herhangi bir kimlik bilgisi içermediği anlaşılmış ve Sayın Emine Özge Yurdakurban **dilekçesinde araştırmanın her aşamasında etik ilke ve kurallara sadık kalınacağını açıkça ifade etmiştir.**

Yukarıda önemlilerine değinilen nitelikleri haiz böyle **gayri şahsi** bir araştırmanın etik açıdan herhangi bir sakıncası olmadığına karar verildiği hususunu saygıyla arz ederiz. 16.03.2020

EK:

I. Sayın Dr. Bilge Öztürk Göktuna'nın Dilekçesi ve Ekleri
II. Sayın Emine Özge Yurdakurban'ın Dilekçesi

A.U.T.

1

Prof. Dr. Ahmet Ulvi TÜRKBAĞ
Başkan

Prof. Dr. Gülçin BÜYÜKÖZKAN FEYZİOĞLU
Üye

Prof. Dr. Orhan FEYZİOĞLU
Üye

Prof. Dr. Enver Murat ENGİN
Üye

Prof. Dr. Dilruba ÇATALBAŞ ÜRPER
Üye

Prof. Dr. Melih BAŞARAN
Üye

Prof. Dr. M. Yaman ÖZTEK
Üye

APPENDIX E

12- Table E.1 Logit Regression Results for EXO and ENDO Treatments in General ∗∗∗ 1%, ∗∗ 5%, ∗ 10%

	(1)	(2)	(3)
VARIABLES	reciprocity	altruism	negative reciprocity
2.game	-0.589	-0.899**	-0.937*
	(0.406)	(0.352)	(0.532)
gpa	-0.447**	-0.164	0.333*
	(0.174)	(0.137)	(0.181)
dep	0.140	0.528	-0.981
	(0.416)	(0.382)	(0.612)
age	0.258	0.272	0.463
	(0.378)	(0.355)	(0.543)
gender	0.399	0.200	-0.314
	(0.353)	(0.315)	(0.493)
2.education	0.333	-0.264	-1.010
	(0.918)	(0.815)	(1.388)
3.education	0.279	-0.171	
	(1.570)	(1.821)	
2.income	-1.154***	-0.667**	1.808***
	(0.396)	(0.337)	(0.650)
3.income	-1.368***	-1.395***	1.653**
	(0.487)	(0.412)	(0.646)
4.income	0.497	0.184	0.233
	(0.557)	(0.447)	(0.770)
5.income	0.551	0.486	
	(1.093)	(0.778)	

6.income	-0.113	2.784**	-2.271
	(0.666)	(1.120)	(1.617)
3.hincome	-3.048***	-1.280*	2.350**
	(0.968)	(0.672)	(1.094)
4.hincome	-1.726**	-1.391**	1.294
	(0.810)	(0.654)	(1.047)
5.hincome	-0.863	-0.392	-0.198
	(0.798)	(0.693)	(1.199)
6.hincome	-1.321*	-0.938	0.840
	(0.689)	(0.576)	(0.933)
2.envcons2	-3.583***	-2.962***	4.226***
	(1.217)	(0.917)	(1.550)
3.envcons2	-2.539**	-0.684	1.695
	(1.206)	(0.899)	(1.359)
4.envcons2	-0.763	-0.126	0.352
	(0.804)	(0.741)	(1.160)
5.envcons2	-1.156	-0.900	1.437
	(0.824)	(0.741)	(1.212)
2.envcons3	0.125	0.703	-2.158
	(1.651)	(1.409)	(2.147)
3.envcons3	2.981*	3.985***	
	(1.555)	(1.532)	
4.envcons3	-0.134	1.100	-1.321
	(1.107)	(1.011)	(1.496)
5.envcons3	0.680	1.851*	-2.787*
	(1.112)	(1.050)	(1.670)
2.belief	0.441	0.695	-0.250
	(0.544)	(0.437)	(0.750)

3.belief	-0.269	-0.0465	0.883
	(0.493)	(0.439)	(0.787)
4.belief	0.702	1.604***	-1.691
	(0.695)	(0.621)	(1.242)
5.belief	-0.283	0.479	0.0798
	(0.477)	(0.429)	(0.681)
riska	0.0315	-0.0912	0.0831
	(0.0927)	(0.0823)	(0.126)
same	0.602**	0.121	-0.369
	(0.260)	(0.210)	(0.347)
Constant	4.440**	2.017	-3.440
	(1.762)	(1.497)	(2.136)
Observations	380	560	351

13- Table E.2 Logit Regression Results: In-group Bias for ENDO Treatment *** 1%, ** 5%, * 10%

	(1)	(2)	(3)	(4)
VARIABLES	reciprocity	altruism	reciprocity	altruism
2.game	-0.844	-2.353**	-0.987	-2.173**
	(1.242)	(1.036)	(1.300)	(1.035)
gpa	0.931	0.257	1.076	0.311
	(1.069)	(0.586)	(1.178)	(0.586)
dep	-0.140	-3.561*	0.293	-2.951
	(0.958)	(1.895)	(1.081)	(1.836)
age	-0.233	-1.599	0.230	-1.225

	(1.389)	(1.403)	(1.408)	(1.310)
gender	-3.128**	-4.430**	-3.107**	-3.948**
	(1.287)	(2.115)	(1.324)	(1.966)
2.education	-6.201	2.486	-8.995	0.811
	(5.096)	(2.993)	(5.805)	(3.072)
2.income	-0.943	-2.476	-1.763	-2.642*
	(1.676)	(1.537)	(1.857)	(1.554)
3.income	-4.596***	-7.553***	-5.092***	-7.030***
	(1.721)	(2.891)	(1.700)	(2.723)
4.income	4.576	-1.583	5.204	-0.881
	(4.531)	(2.542)	(5.021)	(2.489)
5.income	1.121	6.093	-0.466	4.308
	(3.146)	(3.740)	(3.165)	(3.367)
6.income	-0.702	23.58	-1.440	21.42
	(1.884)	(1,650)	(2.082)	(1,034)
3.hincome	-5.960**	-5.962***	-5.126**	-5.477**
	(2.553)	(2.294)	(2.572)	(2.165)
4.hincome	-6.443**	-10.92**	-4.999	-9.612**
	(3.150)	(4.297)	(3.191)	(3.983)
5.hincome	-4.062	-17.46**	-1.460	-14.75**
	(3.585)	(7.325)	(3.786)	(6.885)
6.hincome	-5.833*	-7.911**	-4.906	-6.951**
	(3.052)	(3.254)	(3.163)	(3.066)
2.envcons2	-0.704	-7.333*	-0.369	-6.646*
	(3.481)	(3.836)	(3.500)	(3.516)
3.envcons2	0.677	-1.799	0.531	-1.578
	(2.344)	(1.645)	(2.537)	(1.711)
4.envcons2	5.348**	7.599**	5.172**	6.970**

	(2.343)	(3.337)	(2.437)	(3.080)
5.envcons2	4.262	0.314	4.423	0.414
	(2.929)	(1.949)	(3.204)	(1.981)
3.envcons3	8.754*	24.88	10.44*	23.76
	(5.117)	(1,650)	(5.913)	(1,034)
4.envcons3	-1.346	16.54	0.467	15.98
	(4.321)	(1,650)	(4.639)	(1,034)
5.envcons3	1.758	25.67	3.761	24.33
	(3.607)	(1,650)	(4.122)	(1,034)
2.belief	-0.607	7.263**	-1.632	6.150**
	(1.656)	(3.088)	(1.819)	(2.821)
3.belief	-1.296	3.306	-1.798	2.661
	(3.287)	(2.759)	(3.531)	(2.539)
4.belief	-0.586	-1.369	-0.916	-1.355
	(1.544)	(1.185)	(1.602)	(1.218)
5.belief	2.734*	-0.920	2.832*	-0.717
	(1.440)	(1.096)	(1.557)	(1.091)
riska	0.382	0.0815	0.631	0.182
	(0.381)	(0.229)	(0.461)	(0.244)
same	1.303***	0.488	1.014**	0.284
	(0.400)	(0.305)	(0.421)	(0.323)
wtp			0.300**	0.155**
			(0.119)	(0.0717)
Constant	-3.483	-11.72	-8.591	-13.04
	(9.866)	(1,650)	(10.64)	(1,034)
Observations	220	320	220	320

CURRICULUM VITAE

Emine Özge Yurdakurban was born in Beyşehir in 1993. She graduated from Meram Anadolu Lisesi in 2011. She completed his undergraduate degree at Ankara University at the Faculty of Political Science in Economics Department in 2016. In 2017, she started his graduate degree at Galatasaray University, MA in Economics program. At the end of 2017, she started to work and she is still working at Yeditepe University Department of Economics as a research assistant

TEZ ONAY SAYFASI

Üniversite	: T.C. GALATASARAY ÜNİVERSİTESİ
Enstitü	: SOSYAL BİLİMLER ENSTİTÜSÜ
Hazırlayanın Adı Soyadı	: Emine Özge Yurdakurban
Tez Başlığı and Pension Games	: An Experimental Study on Homophily and In-Group Bias in Poverty
Savunma Tarihi	: 28 / 08 / 2020
Danışmanı	: Doç. Dr. Bilge ÖZTÜRK GÖKTUNA

JÜRİ ÜYELERİ

Unvanı, Adı Soyadı İmza

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JÜRİ ÜYELERİ

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