

The Economics of Language—Accents, Trust, and Social Exchange in Labour Markets

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by,

Ece YAGMAN

Master's Candidate in the School of Economics – YGMECE001

Supervisor,

Dr. Justine BURNS

Associate Professor in the Department of Economics

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Department of Economics

University of Cape Town

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Abstract

This thesis examines the role that English language, and accent in particular, might play in strategic interactions characterized by asymmetric information. The experiment in this study—named the Trust Game—is designed to reveal the degree of trust and trustworthiness individuals display towards each other when the only information they receive is the race and linguistic background of their partners. The results indicate that a mother tongue English accent matters in a positive way, both for trust and trustworthiness, and especially for Black participants. The second part of the thesis brings together third party evaluations to unpack the reasons why speaking English might be such a powerful asset to have. Here, the results provide evidence in support of the positive correlation between *assessed* trustworthiness and *assessed* positive attributes, especially for Black subjects who speak English with a mother tongue English accent. Overall, the empirical evidence suggests that speaking with a mother tongue English accent matters in strategic interactions and it operates through a strong link with positive connotations. Considering the historical and political background of South Africa and the powerful role that language played in colonialism and apartheid, its role in labour market outcomes is an important policy consideration. This is especially true since the post-1994 constitutional settlement envisages a multilingual setting for the citizens of South Africa.

COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

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SUPERVISOR'S APPROVAL OF SUBMISSION OF DISSERTATION FOR EXAMINATION

I confirm that I have seen/have not seen the final version of Ece Yagman's dissertation and that it is submitted for examination with my approval.

Supervisor's Signature

Date

DEDICATION

To my late mentor Dr. Neville Alexander for his thinking, writing and activism that keeps me inspired and challenged every day.

“The choice of language and the use to which language is put is central to a people’s definition of themselves in relation to their natural and social environment, indeed in relation to the entire universe. Hence language has always been at the heart of the two contending social forces [indigenous and imperialist] in the Africa of the twentieth century”

-- Ngũgĩ wa Thiong’o

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I. Introduction

Communication in a common language is deeply woven into the social and economic structure of any society, as exchange of information is an essential precursor for individuals, through their networks, to engage in the labour market. In our daily lives, language functions as a reservoir of identity, tradition, culture and also a medium of information exchange. The transfer of this knowledge hinges on the quality and the efficiency of communication between individuals. When these individuals come together to collaborate and produce, the main languages spoken serve as the medium of communication in any given market. These prevalent languages, in which the main production processes take place in an economy, can be considered as economic resources. Depending on the social and historical context, different markets may require a different set of competence in certain languages [Coulmas, 1992]. Given that markets and languages are highly interrelated, if individuals in a given society have different levels of proficiency in the economically dominant language, then there will be horizontal (labour market entrance) and vertical (differential salaries) discrepancies between the speakers of different languages [Alexander, 2003]. Therefore, language practice and policy have important multidimensional roles as the success of the information exchange directly influences the success of individuals and groups within an economy.

The connection between language practice and economic consequences take very interesting turns when investigated in particular economic systems and countries. Due to its specific history and background, this is especially relevant in today's South African society with its eleven official languages. The legacy of the Dutch and British colonial rule and the ensuing apartheid government's discriminatory language policies against the indigenous and minority language groups rendered English, and to an extent Afrikaans, as the high-status languages. Although the 1994 South African constitution recognises and guarantees equal status to each of its eleven official languages, the

effects of decades long historical linguistic disadvantage in both the education sector and labour market cannot be quickly reversed. The overwhelming dominance of English and Afrikaans unavoidably marginalises the other official languages and creates a rift between the high and low-status languages [Alexander, 2004]. This linguistic heterogeneity between the high-status and low-status languages increases the transaction costs of information exchange and introduces an inefficient setting for the individuals to participate fully in the economy.

In an increasingly global world, where English is the dominant language, investment in English may be seen as a positive choice. What role does English proficiency and accent play in labour market outcomes? This is an important question for societies in transition, such as South Africa, that might be trying to promote multilingualism. If, however, the labour market only rewards speaking English, then a policy of multilingualism will be undermined by the language choices made by citizens. Since individuals have some choice, albeit imperfect, over the language they speak, they are active agents in this field to assess the incentives and make a decision to invest in English.

This thesis examines the role that English language, and accent in particular, might play in strategic interactions characterized by asymmetric information. The experiment in this study—named the Trust Game—is designed to reveal the degree of trust and trustworthiness individuals display towards each other when the only information they receive is the race and linguistic background of their partners. Trust is regarded as a social lubricant that curtails the cost of exchange in daily market or nonmarket environments [Lupia and McCubbins, 1998; Sztompka, 1999; Knight, 2001], and also as a form of social capital that may even enhance economic growth and performance [Knack and Keefer, 1997; Coleman, 1990]. Employing a Trust Game is a fitting approach to test factors that increase/decrease the likelihood of trust in strategic interactions. The results of our experiment suggest that females are less trusting than males, especially towards partners of the same race. However, mother tongue English mediates the negative effect of being paired with a co-

ethnic partner for females. On the other hand, amongst males, an English accent reinforces favouritism towards partners in same co-ethnic pairings. The findings further suggest that Black students and White students treat Black partners with a mother tongue English accent differently: Black students offer higher amounts to this group while White proposers offer less. The second part of the thesis brings together third party evaluations to unpack the reasons why speaking English might be such a powerful asset to have. Here, the results provide evidence in support of the positive correlation between *assessed* trustworthiness and *assessed* positive attributes, especially for Black subjects who speak English with a mother tongue English accent. Overall, the empirical evidence suggests that speaking with a mother tongue English accent matters in strategic interactions and it operates through a strong link with positive connotations.

II. Does Language Matter for Labour Market Returns?

2.1 Overview of models of discrimination

Individuals hold multiple characteristics which may affect labour market outcomes in different ways. Some of these characteristics are inherited and cannot be easily changed, such as gender and race; but others can be altered. Where individuals have a choice, they may try to alter their characteristics (i.e.: educational attainment or the spoken language) if it leads to better outcomes. This section begins with a brief review of the predominant economic models of discrimination in the labour market. Although these theories are different from each other, they all share a common point: to the extent that discrimination is present, it will affect the choices of both employers and employees.

Discrimination can be broadly defined as differential and unjust treatment of different categories of people, especially on the grounds of some personal characteristics such as race, age, sex or sexual orientation, which puts those people at a disadvantage [National Research Council, 2004]. Economic theory provides different models to explain labour market discrimination, typically with a focus on racial inequality. One of the first and primary models is taste-based discrimination. According to this theory that was developed by Becker (1957, 1971), individuals discriminate based on personal prejudice against a given race, gender or ethnicity. Becker shows how discrimination can potentially shift resource allocation and undermine efficiency in an economy as individuals are willing to sacrifice money (or factors and products) to satisfy their prejudice. He extends his model by distinguishing between negative discrimination and positive discrimination (or nepotism), highlighting that both have similar social and economic ramifications. Krueger [1963], Alexis [1973], Freeman [1973], Bergmann [1970, 1971] and Arrow [1972, 1973] modify the assumptions of and concepts of Becker's model but concur with him on the main findings: (1) employers are willing to reduce their income in order to avoid transacting with certain groups and, (2) discrimination cannot persist in the long-run because non-discriminating employers, employees and consumers would

drive the discriminators out of the market.¹ Implication of Becker's [1957] model is that over time, discrimination would be eliminated but the fact that it still exists tells us there is more to the story.

An alternative model of labour market discrimination is based on the notion that certain workers are paid less because employers, who have imperfect information on productivity, believe that they are less productive. These "Statistical discrimination" models—first introduced by Arrow [1973], Phelps [1972] and Spence [1973]—suggest that discriminatory behaviour is a result of simplified generalizations, in other words stereotyping, about people who belong to a specific group. If the employer or the principal has preconceived ideas and uses the observable characteristics of the group to make judgments about the individual attributes of a job candidate or an employee, then they will hire them only at lower wages. Regardless of whether these beliefs are true or not, employers' inclination to pay a premium for individuals from what they consider as "productive" groups lead to discriminatory market outcomes.

Variants of the statistical discrimination model attribute wage differentials to the quality of information that employers receive about different types of workers. Aigner and Cain [1977], for instance, consider a labour market where employers can only partially test worker ability. For example, it could be that personnel managers are predominantly white and are better at assessing the skills of workers similar to them. This would lead to a hiring situation where white workers would have less noise in their signals compared with those of black workers. Under this scenario, the wage offered would be a weighted average of the worker's own signal and the mean productivity of his group, but still the weight placed on signals from white workers would be higher than it is for black workers. Lundberg and Startz [1983] indicate that this information asymmetry might lead to an equilibrium where black workers are disincentivised to invest in productivity signals which would in turn render them less productive and yield lower wages. In essence, the social distance between the

¹ For instance, Bergmann [1971] includes the effect of crowding Black workers into a limited number of low-skill occupations, which would adversely affect wages of Black workers who did not finish elementary school.

employer and employee causes the employer to make inaccurate assessments. This might, in turn, lead the potential employee to invest less in productivity signals, which inevitably makes the initial stereotype a self-fulfilling prophecy.

In order to see if stereotypes could be self-perpetuating, Steele [1997] and Steele and Aronson [1995] conducted a test with Black and White undergraduate students. In one of the treatments, they made race salient by asking the individuals to check a box indicating race prior to the test. The results show that when individual awareness of race was prompted, the performance of Black students was significantly reduced. Similarly, Hoff and Pandey [2006] conducted maze-solving experiments with school children in India to observe the residues of past discrimination on individual achievement. They found that when the social identity, in this case caste identity, was publicly revealed in a mixed caste group, the low-caste subjects' performance declined by twenty per cent compared to the anonymous condition. The implication of this finding speaks to the powerful effects of past discrimination: stereotype threats might lead an individual to change her/his behaviour or hamper motivation.

While taste-based and statistical discrimination models focus on current labour market discrimination, there is another strand of literature, which emphasizes persistent effects of past discrimination. Models of "Intergenerational Transmission of Inequality" distinguish between human capital and social capital: the former is the set of an individual's skills that are deemed valuable by the labour market whilst social capital is the average stock of human capital in the community [Loury, 1977]. The overarching idea is that just as a child's human capital is positively related to the human capital of the parents, the influence of the community also serves as a mechanism through which economic status is transmitted to the next generation [Lundberg and Startz, 1983]. In other words, an individual's human capital depends in part on her/his own ability and in part on the social capital in the community. Even if there is no contemporary discrimination, inequality can still exist as a

historical legacy of the past discrimination and this would be exacerbated if the communities are segregated by race and income. Given South Africa's historical background and the segregationist policies of the apartheid government along racial lines, this model is specifically relevant to illustrate how past discrimination can perpetuate in the present even though there are no inherent differences in productive capacities between workers.

2.2 Returns to speaking English in the labour market

Numerous empirical studies across disciplines have examined the question of discrimination using various methods. While most of these studies focus on gender and race, an emerging body of literature concentrates on language—and in particular returns to speaking English—in an increasingly globalising world. As the focus of this thesis, we now turn to review the literature specifically on returns to speaking English in labour market.

The common thread throughout the literature on discrimination is that real attributes have been shown to affect perceptions and actions. Among these attributes, a specific yet subtle signal that might lead to discriminatory behaviour is the spoken language, or accent. Language use is reflexive and it is the main tool of interaction, learning, and disseminating information. More importantly, it is also used for shaping relations, assumptions, and judgements [Anderson, 2007]. In a labour market context, provision of a common language or a *lingua franca* is a prerequisite to enhance the capacity of the economy as a national unit of production, distribution, and exchange. At the individual level, language skill in a particular language is partly inherited and partly chosen—more so than other ascriptive characteristics. In particular, contrary to an ascriptive characteristic like race or gender, language can be learned and therefore it arguably provides an opportunity for the individual to exercise some choice, albeit imperfect, over it.

The importance of language in social and economic interactions leaves us with a pressing question: Why does language matter? From a pure economic theory point of view, we can think about the labour market signalling model where the agents signal their productivity levels to the principals through their educational attainments [Spence, 1974]. For the purposes of this paper, we can replace the medium of signalling with linguistic competence instead of education. The main types of human capital that are expected to increase productivity are education, work experience, and health [Becker, 1962; Chiswick and Miller, 1995; Chiswick, 2008]. As an extension of these assumptions, language proficiency can be considered as a form of human capital which also complements the other types, particularly education [Chiswick and Miller, 2003; Chiswick, 2008; Dustmann and Fabbri, 2003; Pendakur and Pendakur, 2002]. The mechanism through which language leads to differential treatment can also be partially explained by Arrow's [1973] statistical discrimination theory if we conjecture that an observable characteristic, such as speaking English with a particular accent, is used as a signal to make inferences about unobservables, like productivity or trustworthiness. In other words, language is an important *observable* characteristic in the labour market that an employer may use as a signal for productivity and coincidentally, it is also a trait that individuals have some degree of choice over.

The research and literature on the economics of language has been gaining popularity in the past three decades [Grin 2003]. There are two strands to this literature—one focusing on the context in developed countries and the other covering the angle of developing countries. Most of the research from developed countries highlights the extent to which language skills and earnings are mutually determined for immigrants. In this context, linguistic ability is typically measured as speaking the host country's dominant language fluently as acquisition of language capital can be costly for the immigrants who are coming from different mother-tongue backgrounds [Chiswick and Miller, 1994]. In a comparative analysis conducted by Chiswick and Miller [1995], for instance, the authors found positive and significant returns to dominant language proficiency, with an earnings premium ranging

between 5 to 20 percent. More specifically, after examining census data among immigrants in a comparative framework, the authors estimate an earnings premium for dominant-language proficiency between 5.3 and 9.3 percent in Australia, 11 percent in Israel, 12.2 percent in Canada, and 16.9 in the United States. Dustmann and van Soest [2002] observe similar results in their study which focuses on fluency and earnings among immigrants in Germany from 1984 to 1993. Their study identified a premium between 5-15 percent, depending on the method of estimation. Collectively, these studies show how destination language ability is positively correlated with earnings of immigrants.

The second type of literature that focuses on returns to language is based on data from developing countries. Broadly speaking, there are two main differences between the studies from the developed and developing world: (1) developing countries are not typical destinations for immigrants, and (2) major parts of the developing economies experience linguistic heterogeneity as a result of past European colonial influence [Casale and Posel, 2011; Chiswick et al., 2000]. For instance, for almost all of the countries in Latin America, indigenous languages co-exist with Spanish and Portuguese, which were brought over by the European conquest [Chiswick et al., 2000]. A similar situation is also present in Africa, where racial and linguistic heterogeneity is mostly attributable to the influence of European colonial powers and past discrimination [Kingdon and Knight, 2004]. In other words, the legacy of colonial rule created a situation specific to developing countries where the dominant language is not the home language or mother tongue of the native population. Therefore, research undertaken in the developing world mostly focuses on earning and employment differentials between indigenous and nonindigenous individuals. Chiswick et al. [2000] look at the effects of language usage on labour force participation and earnings in Bolivia. In this particular context, three language groups are of interest: monolingual Spanish speakers, monolingual indigenous language speakers, and bilinguals who speak both Spanish and an indigenous language. The findings suggest that skills in the dominant language are significant:

monolingual Spanish speakers earn about twenty-five per cent more than the other two groups do.² This may be a result of bilingual speakers being penalized in the labour market because of a lower proficiency in the dominant language; however, the authors cannot validate this as the respondents were not asked how well they could speak Spanish.

Another study in this field explores the effect of English language skills on the earnings in India. In the face of a demanding local and global labour market, Azam, Chin, and Prakash [2013] find that hourly wages are 34% higher for men who report speaking English fluently—a result that is similar to that of secondary school completion. What these studies show in common is that proficiency in the language of the former colonial power (Spanish and English) leads to higher earnings.

Does accent matter?

The international evidence covered so far suggests that returns to language matter as it may lead to differential labour market outcomes in terms of opportunities, employment and wages. Turning now from language, we will look at the role that accent, as opposed to language proficiency, might play in generating differential outcomes. In the international literature, it is now widely accepted that the acquisition of a second language after the critical stage (early childhood) inevitably leads to speech that differs from that of native speakers, mainly because established knowledge of the sound system of the first language impacts the perception and production of the phonetic patterns of the second [Flege, Munro, & MacKay, 1995; Long, 1990; Oyama, 1976; Scovel, 1988; Tahta, Wood & Loewenthal, 1981]. Do accents matter? On that question, a multidisciplinary array of research findings suggest that accents serve the listeners as immediate signals for assessing the character and background of the speakers [Giles, 1970, 1973; Ryan & Giles, 1982]. These evaluations play a key role in determining listeners' perceptions of, and actions towards, the speakers. Silverstein [2006]

² The dataset does not include information on the occupation type, i.e., job position, formal/informal economy, etc., but they speculate that the higher returns to bilingual Spanish speakers might reflect the value of speaking the dominant language in the capital cities of the nine states in Bolivia, including the national capital, La Paz.

calls this phenomena semiotic consubstantiality, which indicates that an individuals' speech has indexical substantiality and by speaking it, you are (or become) what you speak. In other words, our speech is a revealing signal for the listeners and it can play a major role in shaping the assessment of the speakers.

Since the way we sound is a significant signal, researchers have been interested in finding out more about accent stereotyping. Giles [1970], Giles & Sassoon [1983], and Stewart *et al.* [1985] provide evidence that an accented speech influences the listener's assessment of the speaker's personality, social status, social attractiveness, competence, and social distance. This influence might in turn stimulate negative stereotypes and instigate discriminatory behaviour. Similarly, Ryan, Gallois and Forbes [1983] argue that speech accents can stimulate stereotypes and prompt illegal and discriminatory behaviour against accented speakers. To the extent that accents can be used as costless observable cues, they may also lead to negative group stereotypes. For instance, a study from the housing market by Purnell, Idsardi, & Baugh [1999] found that callers who use standard American English versus African American vernacular English received significantly higher number of confirmed appointments to view apartments.

Brennan & Brennan [1981] and Lambert [1967] assert that an accent might be a trigger for a person to react negatively as a result of prejudices a person may hold against a particular group of people. For instance, an American study conducted with 730 undergraduate students revealed that an unseen speaker with a prominent non-English accent is rated as less interesting, less convincing, and even less physically attractive than another unseen speaker with a native English accent [Raisler, 1976]. Similarly, Ryan *et al.* [1977] showed a positive correlation between the degree of accentedness and ratings of negative assessments on status, solidarity, and speech characteristics.

Just as the departure from the native accent leads to more negative assessments, speaking with a natural accent can have positive connotations. For instance, research studies in the United States

revealed that higher status ratings (i.e. , intelligence, wealth, education, and success) are mostly given to speakers with native accents—even by the listeners who are foreign and who speak with an accent [Abrams and Hogg, 1987; Ryan and Carranza, 1975; Ryan and Sebastian, 1980]. Similarly, studies in the UK led to a social-psychological concept called Accent Prestige Theory (APT). The theory claims that speakers in the United Kingdom, who have an English accent that is categorized as “first-class”, are generally granted better evaluations; not only on a competence dimension that centres on intelligence, education, social class, and success, but also on a solidarity dimension which entails friendliness, trustworthiness, and kindness.

The positive and negative connotations based on accents are such prevalent notions that there is a growing business market that capitalizes on it. Internet courses that focus on reducing the “foreign” accent and offering customers a chance to sound like a first language English speaker remind us that the evidence on accent research is not only confined to academia. Blommaert [2009] analyses these courses and comes up with two main findings: (1) a rush towards English is a result of the global perception that English is the key to an upwardly mobile trajectory, and (2) the positive effect is even more prominent if the individuals sound American. According to the author, these courses capitalize on the idea that we live in a global system revolving around English, in a world where social effects of speech are very visible. Therefore, there is a natural incentive to sound more American as this is seen as an instrument for success, especially for people who are socio-linguistically different. A study from Sweden by Rodin and Ozcan [2011], which investigates the influence of accented speech in the dominant language, also finds strong negative beliefs about performance for candidates who speak Swedish with a foreign accent. In fact, their results indicate that these ethnic stereotypes associated with speech override stereotypes that are caused by appearances.

The multidisciplinary findings presented so far suggest that how you sound might matter in specific contexts. Inherent in this discussion is the effect of accents in the labour market: are first language speakers of the dominant language (i.e.: English) perceived as more capable and attractive by the labour market? For instance, Korzeny and Schiff's [1987] research reports that Mexican Americans in the U.S. think that their accents supersede their background and race as the primary cue that leads to discrimination. Similarly, Kalin and Rayko [1978] found that listeners in Canada judged speakers with a general Canadian accent as more suited for high-status jobs than non-native speakers. These two findings feed into Fuentres' [2002] research on speech accents as he reports that accents lead to lower ratings for therapists on various job evaluations, such as expertness and attractiveness. On top of that, he also shows lower willingness to work with accented therapists in the United States. Labour market consequences of accented speech are not only limited to employment prospects as there is also evidence of wage differentials. Various papers suggest that stronger accents are associated with lower incomes among individuals with foreign backgrounds [Borjas, 1994; Chiswick and Miller, 1995; Dustmann and Van Soest, 2002; Davila, Bohara, and Saenz, 1993].

Clearly, the international evidence suggests that language and accented speech matter in the sense that the opportunities one can expect in life can be hindered or amplified by it. Looking through a more local lens, growing evidence in South Africa demonstrates that English language and proficiency, together with accent, matter for labour market outcomes. Before reviewing this, however, it is important to establish that language as a characteristic holds some salience in South Africa as it has been a major theme in its history and politics.

2.3 Why study language in South Africa?

The lack of effective economic/labour market networks based around even the most prominent African languages is labelled as an important research priority by Cornwell and Inder [2007] and with good reason. The “language question” has been a preoccupying and a reoccurring theme in the young republic of South Africa, not only because of the struggle to bring national unity and to abolish the social inequality based on colour, language, and class, but also due to the officially structured racial segregation policy of the apartheid government that also encompassed linguistic segregation. The challenge for the current government is to deal with eleven official languages and conduct a policy of multilingualism in such a way that no person is held inferior or superior according to their mother tongue. As a result of the country’s unique history and impact of globalism, English emerged as the default bridging language. That being said, English and Afrikaans are the mother-tongue languages of respectively only 6.4% and 14.9% of population [Cornwell and Inder, 2007]. In this connection, it is fitting to focus on the language politics in post-apartheid South Africa as it holds great significance for both individuals and institutions in terms of economic opportunities and outcomes.

To properly analyse the role of language in economics in South Africa, it is necessary to understand the South African context in which it has been taking place. The language policy and identity planning of a government is reflective of the zeitgeist of an era. In the case of South Africa, this reflection manifests itself in four very different episodes of governance: the initial period of Dutch colonization, the succeeding British colonization, the apartheid years and the contemporary postcolonial context.

The Netherlands East India Company's (VOC)³ occupation of Table Mountain as a refreshment station in 1652 marked the emergence of a new society. The new white settler community were spreading a local variation of Dutch and, simultaneously, assimilating the local KhoiKhoi tongue and the language of the slaves that were brought from highly divergent geographical origins [Wilson and Thompspon, 1969]. The strong intolerance towards racial differences by the Dutch-speaking community is considered as the starting point of regarding race as a proxy for segregation [Orman, 2008]. The following British colonization in 1806 brought a prompt attempt to assimilate Afrikaans and the remains of the other indigenous languages and cultures in a systematic fashion. The ultimate objective was to pursue an "Anglicization" policy to reduce and eventually replace the language of the Dutch descendants [Giliomee, 2003]. Accordingly, English was declared as the official language in 1828 with the aim of eradicating the Dutch influence from many public spheres such as schools, courts and churches. This threat against the core values fuelled a language struggle amongst the Dutch community, as they were interested in maintaining the Afrikaner ethnic identity. The emergent resistance against the British dominance is considered central in order to understand the Afrikaner nationalist agenda during the apartheid years as the language policy conflict consolidated the Afrikaans language with Afrikaner identity [Alexander, 2005].

Like its predecessor, the British language policy aimed to linguistically and culturally assimilate the native African population mainly through the British missionary schools. By anglicizing a small section of the black population, the British colony did create an educated Black elite group—who spoke English—to further their economic and political interests [Orman, 2008]. Interestingly, Alexander [2003] discusses how the political consequences of this linguistic ideology survive to this day, as proficiency in English is seen as the vehicle to move upwards in the social and economic ranks of society.

³ *Vereenigde Nederlandsche Ge-Octroyeerde Oost-Indische Compagnie* in abbreviated form.

Language policy during the apartheid years concentrated on segregating South African society in artificially constructed racial categories. The Bantu Education Act of 1953 that had been implemented by the apartheid government stipulated that black learners had to be schooled in their mother tongues for the first eight years. This superficial assignment of the black population into specific language groups under the tag designation of mother language was especially problematic since many of the learners came from complex multilingual backgrounds [Beukes, 2004]. After primary school, the medium of instruction for secondary education was either English or Afrikaans, or both; yet, it was nonsensical to expect Black students to be able to continue their education in a new language after poor quality monolingual schooling [Orman, 2008]. In other words, the apartheid language policy was aligned with a political agenda of segregating people and insisting on ethnolinguistic differences to make sure that the segregation was done properly.

The segregationist policies of the apartheid government had far-reaching consequences that are still prevalent today. The stigmatization of mother-tongue education, for instance, can be tracked down to the apartheid government's deliberate attempts of promoting white Afrikaans while blocking the way for social advancement to the majority of the population. On that matter, Sonntag [1995] argues that Blacks saw English as the tool to combat divisive Bantu education and the imposition of Afrikaans. Indeed, the oppressive language policy of the apartheid government backfired in the sense that hegemony of English became the accepted way for national unity and liberation by the Black resistance movement and also served as a tool to express their rejection of the racist policies of the government [Alexander, 2003].

The post-apartheid period commenced with the election of African National Congress (ANC) under the leadership of Nelson Mandela in the first democratic elections of 1994. Naturally, for a nation that had been divided profoundly for so long, the new national language policy was a critical instrument to stimulate nation building, economic development and national unity. The endeavour

to turn away from the separationist legacy of the apartheid government as much as possible and to accommodate all the ethnic groups in the process of reconstructing the nation resulted in the officialisation of the nine African languages: Sepedi, Sesotho, Setswana, siSwati, Tshivenda, Xitsonga, isiNdebele, isiXhosa and isiZulu. The constitution *rhetorically* asserts that all the eleven official languages, with English and Afrikaans, must enjoy 'parity of esteem' and that economic development through the promotion of multilingualism is a strategic goal [Cole, 2005]. However, the reality is that English, as a cross-ethnic lingua franca, has undermined the speakers of African languages [PanSALB, 2000].

Language policy in the education sphere carries a cardinal role in realizing the post-apartheid multilingual vision. Although the new national language policy that was accepted in 1997 asserts that the learners have the right to get education in any one of the eleven official languages, African languages are generally used as medium of instruction only up to Grade 3 in practice [Webb, 2002]. For instance, although English is the first language of only 3.6% of the Eastern Cape, 67% of the single and parallel-medium schools offer English as medium of instruction [Webb, 2002]. A substantial amount of research has been done about the undesirability of this picture but discussing the real magnitude of the problem would be the subject of another research paper. At this juncture, it should suffice to say that it is axiomatic that insufficient linguistic development in the mother tongue also leads to inadequate command over the additional language, bringing the whole education system to the point of total failure (cf. Macdonald 1990, Webb 2002, 2004; Webb, Lafon, Pare 2010, Heugh 2000).

2.4 Does English matter for labour market returns in South Africa?

As stated before, the literature on the economics of language from developing countries reflects the effects of past discrimination as it highlights the differential returns to the dominant language of business (i.e.: English or Spanish) and the language spoken by the indigenous population [Casale and

Posel, 2011; Kingdon and Knight, 2004]. Coulmas [1992] points out that economic underdevelopment in many African countries is due to the fact that the overarching common language is not fully adapted and understood by the whole nation. In South Africa, this is naturally the prevailing situation given the country's unique history of colonial conquest and the ensuing apartheid government. Deumert et al. [2005] points out that one of the major social transformations occurred after the apartheid era with the repeal of movement restriction. This caused an increased migration from rural to urban areas in search of jobs. As a consequence, a workplace study from Cape Town reported that lack of proficiency in dominant urban languages (English and Afrikaans) by rural migrants can translate into limited opportunities for employment as well as access to public services (governmental and non-governmental) [Deumert et al., 2005]. Hence, this "language question" is central to the discussion on multilingualism in South Africa; where a former colonial language, which emerged as the de facto language of economic power, inadvertently marginalises certain segments of a society.

To analyse the socio-economic importance of languages better, Alexander [2005] proposes the power of language versus the language of power framework. While the first concept signifies the ability of groups to empower themselves by means of language, the latter is a case for the opposite, where the relevant group is disempowered due to the ability of others to impose their agendas. For reasons related to the colonial history of Africa and because of the multilingual character of colonially defined states, the languages of Europe—specifically Portuguese, Spanish, Dutch, English and French—became the languages of power. During the colonial era, African languages were not a part of high-status functions, not even in educational domains such as secondary and tertiary education [Alexander, 2000]. The perpetuation of linguistic heterogeneity between the high-status and the low-status languages increases the transaction costs of information exchange and introduces an inefficient setting for individuals to participate fully in the economy. It follows that if

English proficiency is unattainable for an individual, then he would have reduced access to job opportunities and economic mobility.

Studies from South Africa

Given the connection between labour market opportunities and language skills, it is no wonder that there has been a growing interest in the field of development economics to examine the economic implications of speaking English. Table 2.1 below summarises some of the available evidence in South Africa. Levinsohn [2004], for instance, uses data from three South African household surveys and focuses on the benefits of English as a first language in the labour market conditional on education, gender, and experience. His results are critical because of two reasons: (1) he finds that people who list their primary language as English earn about 25 percent more, and (2) returns to speaking English have increased for Whites post-apartheid. He also adds South Africa's exposure to globalism since 1994 into the potpourri for reasons why there has been a rise in the returns to speaking English as a first language.

Table 2.1: A Sample of Results from Labour Market and Language Studies Conducted in South Africa

Author & Year	Data	Returns to English-Wages	Returns to English-Probability of Employment
Levinsohn (2004)	LSMS 1993 LFS 2000 IES 2000	English speakers were earning 25 percent more in 2000, a 7 percentage point increase since 1993.	
Cornwell and Inder (2008)	OHS 1996-1998	Those who speak English at home enjoy a sizeable income premium of about 17.7%.	Africans who speak English at home have a 15.8 percentage point higher chance of employment than those with an official African mother tongue language.
Casale and Posel (2011)	NIDS 2008	African males who are proficient in English earn almost 52% over those who are not English proficient.	
McKenzie (2013)	NIDS 2008		Probability of female participation in the labour market increases by 8 percent if she is proficient in English.
Butler-Adam (2014)	LFS 2000, 2007 NIDS 2008	Speaking English at home increased gross monthly earnings, especially for non-White individuals.	Speaking English at home significantly increases the probability of employment, especially for non-White individuals.

Source: compiled by author

Cornwell and Inder [2007] analysed the language and employment outcomes of 160,000 working adults in South Africa and reached the conclusion that having English as one's mother tongue is one of the decisive determinants of employment and income. To be more specific, they assert that Africans who speak English at home enjoy a 15.8 percentage points higher chance of participating in the labour market than those with an official African mother-tongue language. Moreover, they find that it does not matter if the home language is one of the widely spoken African languages, namely isiZulu or isiXhosa. Individuals who speak English at home enjoy a greater chance of getting hired. Finally, after factoring in numerous variables (i.e.: education level, rural/urban setting, etc.), they also find that those who speak English at home benefit from an income premium of 17.7 percent. Given that nearly 40% of the population's mother tongue is either Zulu or isiXhosa, it is clear that this undesirable outcome marginalizes African language speakers.

Although Cornwell and Inder [2007] find very strong results, the dataset they used did not collect information on English language ability per se. That being the case, the authors had to use ‘the most often spoken language’, a variable highly correlated with race, which is used as a proxy for language skills. However, with the introduction of the first wave of the National Income Dynamic Study (2008), which is the first national survey to include questions on how well the individuals could read and write English and also their home language, it became possible to estimate returns to proficiency in English. Casale and Posel’s [2011] study was the first one to analyse this relationship.⁴ They report that working age African males who are proficient in English earn 52 percent more compared to those who are not. Not surprisingly, they also report that the same staggering effect is not pertinent for proficiency in an African language. McKenzie [2013] uses a similar approach to observe the relationship between skills in English and labour market opportunities. Her findings suggest significant and positive results for females—proficiency in English increases the chances of entering the labour market by 8 percent.

Finally, a comparative cross-sectional data analysis by Butler-Adam [2014] investigates the relationship between income (as the dependent variable) and a measure of English language skill as the key explanatory variable. While the first two datasets in the study includes information on just the home language (Labour Force Survey 2000 and 2007), NIDS (2008) renders the inclusion of an English proficiency variable possible.⁵ His findings concur with the previous econometric studies: proficiency in English matters for labour market outcomes both in terms of job prospects and income levels, especially for Black South Africans. Collectively, these studies point towards fragmentation and polarization along the ethnolinguistic line in South African labour markets.

⁴ They create a dummy variable that equals to one if an individual reports the maximum score (five out of five) on writing and reading ability. This strict definition of proficiency in the specified language is chosen on purpose to control for some of the problems related to self-report measures.

⁵ Butler-Adam follows Casale and Posel’s [2011] methodology in creating a strict English proficiency variable.

These econometric results raise the question: “Why are there positive returns to speaking English?” More specifically, identifying the key mechanism through which English language proficiency leads to positive labour market returns seems as an important next step. The literature and theories covered so far indicate that English, as a means of communication, can lead to more efficient job search from the perspective of the potential employee and thus result in better employment prospects. Another plausible explanation is that high returns to English language proficiency might be rooted in employer-perceived productivity effects. In other words, employers might be inferring a positive signal from English proficiency. This would link with Arrow’s [1973] theory in the sense that an observable quality (i.e.: proficiency in English) might be signalling something about an unobservable characteristic, such as productivity. If that happens to be the case, then the signals transmitted through language ability would perhaps partially explain the reason why English speakers earn more. Indeed, in the South African context, there is some experimental evidence to support this idea.

Following the Rodin and Ozcan [2011] paper, Butler-Adam [2014] uses a “betting-game”. This experiment is designed to resemble a hiring situation in the labour market, where the participants (simulating the role of employers) are shown limited information about a number of candidates, mainly through facial portraits and voice clips. Afterwards, they are asked to place bets on the candidates according to whom they believe scored the highest on a simple numeracy and literacy test. In Butler-Adam’s [2014] version of the experiment, he adapts the game to the South African context by choosing Black and White students to represent different home language groups.⁶ His results suggest that having an English accent significantly yields more positive assessments of ability, and for Black subjects, it reverses the negative race penalty. In other words, the findings suggest that

⁶ To ensure a proportionate representation across gender, language, and race categories, the experiment uses a (2x2x2) design. For instance, in each round, participants see a candidate from each gender, race (only Black and White to avoid complexity), and language group (mother tongue English speaker versus not).

there is a positive return to speaking English with an English accent. This finding can be partially explained by the perceived link between an English accent and aptitude.

Apart from signalling productivity, another possible explanation for high returns to English pertains to trust and social distance. It is widely recognized that trust between individuals is inversely related to social distance [Bouckaert and Dhaene, 2004]. Following this view, it is plausible to suggest that differences in attributes between interacting parties would lead to lower levels of trust and differential treatment based on the social distance. This alternative links with the Lundberg and Startz model [1983] outlined earlier that suggests wage differentials might be due to social distance between actors. If firms can assess the marginal product of a member affiliated with one group better than they can for the members of the other group, then the response to uncertainty about productivity would be the fundamental reason of wage differentials. The empirical component of this thesis sets out to test this alternative hypothesis. Specifically, by using an experimental Trust Game, we test whether a mother tongue English accent reduces social distance and improves trust.

III. Does English Language Proficiency Affect Trust?

3.1 Trust Games

Mounting experimental evidence suggests that ascriptive characteristics, such as gender and race, are associated with discriminatory behaviour. To investigate this type of behaviour, we focus on a specific aspect of social and economic interactions: trust. In the realm of economics, experiments have been gaining impetus to study social preferences such as trust and reciprocity. In particular, the Trust Game that was first devised by Berg, Dickhaut, and McCabe [1995] is a popular choice to collect behavioural trust measures from a dyadic exchange transaction. In this decision making task, two individuals (most often strangers) need to make a decision to interact with each other in order to increase their individual and collective welfare. This experimental design more or less simulates a labour market where asymmetric information and contractual incompleteness leads people to make strategic decisions on whether to trust a stranger or not [Kollock, 1994; Zak and Knack, 2001].

The standard Trust Game is a two-person (Player A and Player B) sequential experiment that examines how individuals make snap judgments whether to trust each other or not. During the initial stage, both of the players are given the same endowment by the experimenter, after which Player A is asked whether he or she would like to send any or part of their money to Player B. Should player A choose to do so, the experimenter subsequently doubles the amount sent by Player A, and Player B receives this multiplied amount. The second stage of the game involves Player B making a decision about transferring money back to Player A. Although the sub-game perfect equilibrium dictates that there should be no transfers to start with, the Pareto optimal outcome that maximizes the total pie requires Player A to transfer all of the initial endowment to Player B and for the latter to return 50% of the doubled amount. In most instances, Player A would only make a transfer if he/she has an expectation of getting at least half of the doubled amount in return. As the name suggests,

the amount that Player A sends is indicative of trusting behaviour that would maximize the overall pie, whilst the money Player B transfers back is considered as trustworthiness/reciprocity.⁷

In the international literature, Trust Games are widely used to understand the role of important social capital—such as generalized trust between strangers—in explaining economic outcome, especially in the labour markets. Although game theory predicts that there would be no transfers to start with, Camerer (2003) reports in his survey of experimental results that trustors send about 50 percent of their endowment, and trustees approximately return the amount that trustors sent to them, i.e. about one third of the tripled amount on average. Glaeser et al. (2000) found that proposers in same race pairs make significantly higher offers to each other than if their partner was from a different race group. Similarly, the results of a study by Wilson and Eckel [2006] suggest that proposers are significantly less likely to make an offer if they are paired with members of minority groups in the United States. In fact, a growing number of studies highlight some evidence on higher rates of trust towards lighter-skinned individuals [Fershtman and Gneezy, 2001; Haile, Sadrieh, and Verbon, 2008; Simpson, McGrimmon, and Irwin, 2007; Naef et al., 2009].

For instance, Fershtman and Gneezy [2001] highlight the dynamics of ethnic discrimination amongst Jewish Israeli students. What is particularly interesting about this study is that the authors find a systematic distrust towards Eastern Jews, by *both* Ashkenazic and Eastern Jews. However, this pattern of discrimination disappears when trust is not an issue (they measure this through another treatment where subjects play a Dictator Game), leading the authors to conclude that ethnic stereotyping, not a “taste-for-discrimination”, is the underlying reason for mistrust.

In contrast, Bouckaert and Dhaene [2004] find evidence in favour of dissipating ethnic discrimination with increasing common characteristics between interacting parties. In their study, they utilise a

⁷ The initial motivation of a trusting action can also be linked to altruistic motives. There are numerous studies focusing on disentangling inequality-averse other-regarding preferences from pure trust motives. See Cox, 2004; Ashraf et al., 2006; Carter and Castillo, 2003; Mansbridge, 1999; Kramer, 1999.

Trust Game in Belgium with small-business owners who come from Turkish and Belgian ethnic backgrounds. These subjects are matched with respect to gender, socio-professional status and place of residence—a fact that is known by them—so that the only difference is the ethnic affiliation.⁸ The authors find no significant differences between average trust and reciprocity and they interpret this as the sub-population effect: as the social distance gets smaller, ethnic differences get insignificant.

In South Africa, there have been only two studies to analyse discrimination through the Trust Game. Ashraf et al. [2006], for one, ran a combination of dictator and trust games with South African university students as a part of an experimental study that took place in three different countries.⁹ The biggest difference they found was between White and Black South Africans with the latter making significantly lower offers. A more recent and a comprehensive study was conducted by Burns [2006] where the author used photographs of participants to transmit information about race. By using pictures, she could examine how the racial identity of proposers and trustees might impact behaviour in a strategic setting. Findings from this study point towards a systematic distrust towards Black partners, by both Black and White proposers, and this is mostly due to mistaken expectations. These findings feed into the literature which suggests that costless and visible cues (such as race and gender) might exacerbate the differences between groups, especially for segmented societies [Zak and Knack, 2001; Bouckaert and Dhaene, 2004; Akerlof, 1997].

Finally, gender as a real attribute also plays an influential role when investigating group bias and trusting behaviour.¹⁰ One of the most compelling studies focusing on this aspect is perhaps the Goldin and Rouse [2000] paper. They showed that when the top US orchestras use “blind” auditions of musicians, the likelihood of female contestants being the winners in a final round is significantly

⁸ The first name of the opponent was revealed to make the ethnic affiliation salient.

⁹ The authors ran the study in Russia, South Africa and the United States as a robustness check.

¹⁰ Scharleman et al. [2001]; Chaudhuri et al. [2002]; Croson and Buchan [1999]

improved. In the context of the Trust Game, most of the international studies find that male proposers exhibit more trusting behaviour by making higher offers than females.¹¹ Croson and Gneezy [2009] attribute this difference to greater responsiveness of women to the experiment conditions. A meta-analysis conducted by them compares findings within and between various economic experiments in risk, social, and competitive preferences to examine the gender-specific outcomes in the labour and goods market. Their results indicate that women are more risk-averse, context-sensitive, and competition-averse compared to men.

While individuals cannot change the ascriptive characteristics that they are born with, they can choose to invest in human capital elements perceived to be beneficial, such as education. Language skills are an important component of human capital if there are explicit returns to speaking a particular language in a particular way. A multidisciplinary array of research findings suggest that accents serve the listeners as immediate signals for assessing the character and background of the speakers [Giles, 1970, 1973; Ryan & Giles, 1982]. Although the role of accents in discrimination studies has been gathering some academic attention, it has not been explored at length by experimental economists. To the best of our knowledge, there have been only three studies that explore how, and to what extent, an individual's looks and speech affect beliefs about his performance.

Firstly, Fershtman, Gneezy, and Verboven [2005] ran a Trust Game in Belgium, where the linguistic segmentation between the Flemish and the Walloons is very pronounced. Their results indicate that these linguistic groups discriminate against each other by offering significantly lower amounts if they are paired with a player who does not speak the same language, while both Walloon and Flemish students transfer significantly higher amounts to partners of their own ethnic group. This behaviour clearly indicates group bias.

¹¹ Snijders and Keren [2001]; Eckel and Wilson [2004]; Innocenti and Pazienga [2006]; Kanagaretnam et al. [2006]; Slonim [2006]; Chaudhuri and Gangadharan [2007]; Buchan et al. [2008]; Garbarino and Slonim [2009].

The second one of these studies is Rodin and Ozcan's [2011] "betting game". As mentioned before, they set out to observe if individuals draw inferences when they hear accents and make decisions based on stereotyping. When both looks and speech were presented for performance evaluation, they found a strong negative effect of speaking Swedish with an accent. Specifically, participants were significantly less likely to bet on candidates as being top performers in verbal and literacy test if the candidates spoke with a foreign accent.

Lastly, Butler-Adam's [2014] betting game was adapted from Rodin and Ozcan's [2011] experiment. His version was conducted with university students in Cape Town, South Africa. The results show positive returns to speaking the dominant language, English, as a first language. In particular, he finds that a mother tongue English accent can significantly improve assessment of ability, even more so than race and gender. In other words, accents can be powerful to the extent that sounding like a native English speaker can be useful to reduce the racial bias.

The preceding discussion has provided a perspective on research that uses experiments, specifically the Trust Game, to explore the dynamics of discrimination. The primary difference between the work presented here and most of the previous work is that we infuse an accent study into the Trust Game. In this paper, we incorporate voice clips to evaluate the relative importance of speech, as well as race. In an increasingly global world, where English is the dominant language, does investing in English yield positive outcomes? This is a particularly relevant question in South Africa with its specific history and the resultant high-status English legacy. Does a mother tongue English accent undermine or reinforce trust? And on the flip-side, how does English accent impact reciprocity? The Trust Game described here was tailored to answer these questions.

3.2 Experimental Design

The overall study is comprised of 2 parts:

- (1) In the first component subjects are interviewed, their voices are recorded and matched with their student photos, and they participate in a Trust Game.
- (2) In the second part of the research, the subjects who participate in the experiment get assessed on their personal attributes by third party evaluators in a non-strategic setting. These evaluations include assessments of trustworthiness and linguistic background of the subjects.

The experiment was conducted with undergraduate students at the University of Cape Town (UCT) in two separate sessions between May and October 2012. The students were invited to participate in a “decision-making”¹² study and told that they had an opportunity to earn extra cash based on the decisions they made during these tasks.¹³ Students, who were interested in being a part of the research, completed a short background questionnaire designed to elicit demographic as well as linguistic background (see Appendix for the complete questionnaire).¹⁴

Prior to the experiment, the participants were invited to a pre-study session by the experimenter. The main purpose of these one-on-one sessions was to record the voice of each of the subjects whilst also probing questions about the linguistic background.¹⁵ This way, the experimenter could clarify with the subject the difference between first-language/mother-tongue English and home language. As an example, a Black South African student who speaks isiXhosa as a home language is considered as a first-language English speaker if he went to an English crèche and learned the language during the critical stage/early childhood.¹⁶ Although there are no universally accepted

¹² The wording was carefully chosen since the students tend to behave more sceptical when the game is called “experiments”.

¹³ Recruitment was done both at the Upper and Middle campuses by class announcements and posters. While the students volunteered to take part in the experiments, they were unaware of the nature of research.

¹⁴ The questions are taken from 2008 National Income Dynamic Study.

¹⁵ The sessions were held in complete privacy. Each student was instructed to book a 10 minute slot for a pre-study session. The experimenter then would hold a one-on-one session with the candidate.

¹⁶ Early years is defined as from birth to at least 9 years old.

definitions for these concepts, we resort to Department of Basic Education's definitions [Department of Education, 2010]. Accordingly:

- **Mother tongue:** the language which a learner has acquired in early years and which normally has become his/her natural instrument of thought and communication,
- **Home Language:** the language that is spoken most frequently at home by a learner.

Following these definitions, one can see that it is entirely possible for a person to report English as a mother tongue (i.e.: if they individual grew up in a predominantly English speaking community), but speak Xhosa as a home language. In these sessions, each of the participants read the same script aloud and their voices were recorded by the same recording device.¹⁷ These recordings were also captured in the exact settings so as to avoid any kind of potential discrepancies in the data collected.¹⁸ While the script is contextually meaningful, it doesn't allow for any revelation of personal information. In addition to the voice clips, we also obtained subjects' photographs with their permission from their university student cards to reveal the racial identities. Subsequently a 10 second voice clip with a still picture was created for all of the participants. These clips were uploaded to an online video-sharing website called Vimeo, and each participant was given a unique link which allowed them access to their partner's clip in the decision task.

One of the biggest advantages of using Vimeo is that it provides detailed statistics on how many times your videos get watched and if the viewers watch the entirety of the clip. Since the links are designed to be private, only the students with the right link address and password can watch the clip that has been assigned to them. By using Vimeo, we could monitor the online procedure closely and

¹⁷ The script for the voice recordings is as follows: Hi, I am a student at the University of Cape Town. I will be taking part in this study designed and conducted by RUBEN. Good luck! (RUBEN stands for Research Unit of Behavioural Economics and Neuroeconomics).

¹⁸ In order to control for grammar errors, all of the participants read aloud the same script.

check if the subjects followed the instructions properly—that is, if they saw the photo and heard the voice of their partners before making a decision.

Once all the videos were uploaded to Vimeo, the experimenter divided the sample pool into two groups along two parameters: race and language. While care was taken to attain equal proportions of race and language interactions amongst participants, the gender of participants in a given pairing was held constant for possible confounding cross-gender effects that might arise. Following the pair-up process, Player A's received their decision tasks in their emails. The instructions stated that they were endowed with ZAR50 and they now had a chance to send any amount from this R50 to their partner, Player B. They were also told that any amount that they decide to send would be doubled by the experimenter. The decision could only take place *after* watching the video that allowed them to see and hear Player B, who was also endowed with ZAR50. The instructions also provided a private link and password so that Player A's could gain access to their specific partner's clip.¹⁹ A similar process was also followed for all Player B's, whereby they saw and heard their partners *before* making a decision on the amount they were going to send back, if any.²⁰ In sum, revealing the participants' accents as well as their race, we are attempting to measure the effect of these elements have on behavioural interactions.

¹⁹ Each of the participant's video was uploaded with an anonymous subject-number.

²⁰ The actual instructions are included in Appendix.

3.3 Third Party Evaluations

To obtain a rating of looks and speech of the Trust Game participants that is independent from the experimental setting, a new group of students (called “evaluators”) were recruited. As the subjects participating in the Trust Game and evaluators are all undergraduate students at the same university and recruited the same way, how the subjects are perceived by the evaluators would be a good approximation of how they are perceived by the opponents in the Trust Game. This approach was particularly important for the mother-tongue English assessment as self-reported information on language might be noisy (even though the experimenter probed questions with regards to linguistic background and double-checked the answers with the subjects). For instance, Deumert, Inder & Maitra [2005] warn about considerable over-reporting in English proficiency in their qualitative study which focuses on rural-urban migrants in four low-income areas in Cape Town. They found that participants, who self-reported average or high-skills in English, often had less than basic level.

The evaluators had not participated in the Trust Game and therefore had no interaction with the participants. They were simply asked to make their best assessment on a host of attributes regarding the candidate they were assessing. For instance, evaluators were asked to rate the candidates on trustworthiness, confidence, attractiveness and timidity after they watched their clips. In total, there were 8 different attribute questions with a rating scale from 1 to 10 for each clip.²¹ Each evaluator assessed between 21-22 candidate clips.

In order to incentivize the evaluators to offer honest assessments (instead of randomly ticking boxes), each evaluator was told that the experimenter already had data on the subjects for these attributes based on self-report measures from the survey interviews, experimental decisions and psychometric testing. Evaluators only had to guess what these scores would be and the closer their

²¹ The social class question is an exception as it was phrased as: “The candidate is...” with only 5 answer options ranging from Low class to Upper class.

assessment was to the data, the more money they would receive. Put simply, an evaluator's compensation was directly linked to how many correct answers they could get.²²

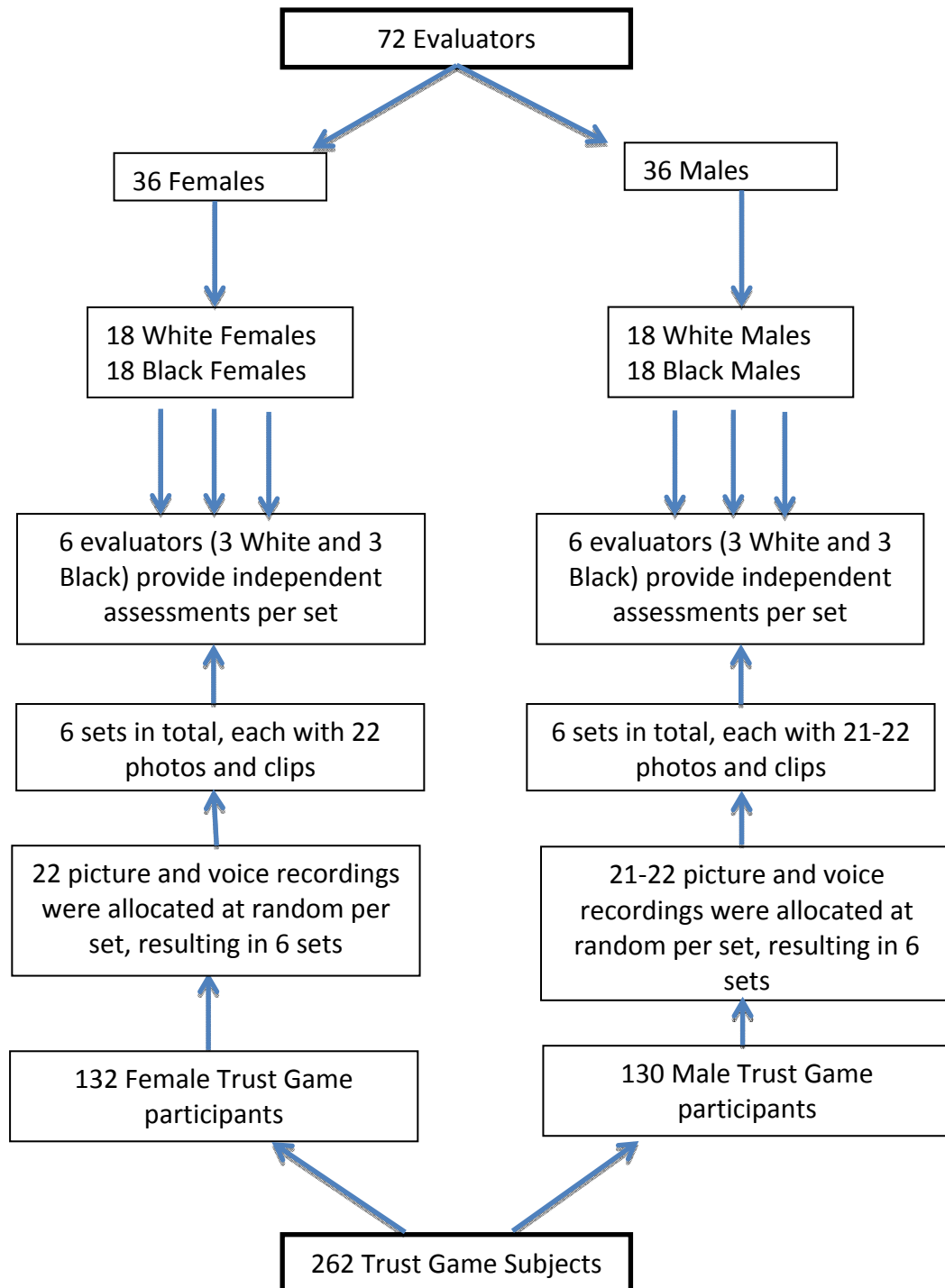
A total of 72 UCT students were recruited as picture and voice evaluators. Each of these evaluators was then sent the assessment task that included an online private link which directed users to a playlist of videos. These videos contained the pictures and voice clips of each Trust Game participants.²³ The link also included a set of evaluation questions on a range of characteristics about these subjects. For instance, evaluators were asked to rate the candidates on characteristics, such as friendliness, as well as on linguistic features, i.e.: speaking English as a first language. Assessments were then done by the evaluators who watched a set the clips and then answered the assessment questions. In order to make sure that the assessments were as objective as possible, we assigned 6 evaluators—3 White and 3 Black—per voice clip. Similar to the Trust Game design, the gender of the evaluators and candidates in the clips was not mixed.²⁴ Each evaluator assessed between 21-22 candidates and in total, we collected 1572 unique observations for these picture and voice evaluations. Figure 3.1 demonstrates the setup of evaluations and the distribution of evaluators.

²² Once they submitted all of their responses, two questions were chosen at random from each of the candidate assessments. These answers were compared to those of the respondents and the evaluators were paid R3 for each correct answer that they got. For instance, if the assessment of the individual matched their actual data that was counted as a correct answer and the evaluator was paid for it (ie: if an evaluator scored 30 correct answers out of 54 randomly selected questions, we paid R90).

²³ These sets included a mixture of mother-tongue English as well as mother-tongue non English candidates.

²⁴ The reasoning behind this is same with the Trust Game—to ensure that there is no cross-gender effects.

Figure 3.1: Overview of Third Party Evaluation Setup-Distribution of Picture & Voice Clip Sets per Evaluator



3.4 Summary Statistics

Table 3.1 below reflects summary statistics on some key demographic characteristics of the participants who took part in the Trust Game. The 262 students that participated in the experiment have an average age of 20 and the majority of the subjects are South African. The gender split is equal and the racial composition is made of 35% White and 65% Black students.²⁵ The language breakdown shows that amongst mother tongue English speakers, 57% of them are White participants while 43% are Black students.

The language section further displays home language categories across the Trust Game participants. As stated earlier, the mother tongue English indicator was not the only linguistic background information that was collected; students also reported the main language they speak at home with their families. We labelled this variable as Home Language and categorized it into four groups:

1. **African Languages:** Ndebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Siswati, Tshivenda, isiTsonga, Shona, Kiswahili, Yoruba, and Bemba;
2. **English;**
3. **Afrikaans;**
4. **Other European Origin Languages:** German, French, and Portuguese.

Parsing the data into different home language groups demonstrates that racial and language groups do not constitute a perfect overlap; yet there is a very close association between the two. For instance, amongst the students who report English as a home language, 68% of them are White participants compared with 32% Black participants. As mentioned before, our design allows for linguistic diversity amongst the subjects. Although the racial and linguistic lines run quite closely in South Africa, it would be nonsensical to assume that speaking an African language as a home language is synonymous with being mother-tongue non-English. To illustrate, a Black student, who

²⁵ It is important to note that we use these socially constructed terms as racial identities, we refer to the physical attributes of skin colour (phenotype), namely “blackness” or “whiteness”.

speaks an African language at home with his family but was taught in English starting from an early stage of his life, is considered as a mother-tongue English speaker. The key point here is that there is an organic ethnolinguistic variation in the sample.

When we examine the data between different socio-economic categories, significant differences emerge. For instance, majority of the White students report their family's incomes in the middle, upper and rich brackets compared to Black subjects, a difference that is statistically different (Fisher's Test, $p\text{-value}=0.00$). Consistent with this finding, only 15% of the White students are recipients of financial aid whereas this ratio goes up to 85% for the Black students (Fisher's Test, $p\text{-value}=0.00$). Overall, amongst the students who report to have a part-time job, the ratio of White participants is 61%—again, a statistically significant difference from the 39% reported by Black students (Fisher's Test, $p\text{-value}=0.00$).²⁶ Since the games are incentivised with real money, the differences in socio-economic background might affect choices. Thus, we control for socio-economic background in all regressions.

²⁶ There are no significant differences between males and females in terms of the descriptive statistics.

Table 3.1: Descriptive Statistics of TG Participants

Demographics	All	White	Black	Female	Male	MTNE	MTE
Age	20 (1.74)	19.8 (1.46)	20.1 (1.87)	19.8 (1.67)	20.2 (1.80)	20.1 (1.85)	19.8 (1.65)
White	35%			43%	57%	7%	93%
Black	65%			54%	46%	62%	38%
Female	50%	30%	70%			44%	56%
Male	50%	40%	60%			42%	58%
South African	80%	42%	58%	51%	49%	40%	60%
Language							
Mother Tongue Non English	43%	5%	95%	52%	48%		
Mother Tongue English	57%	57%	43%	49%	51%		
African Language	50%	0%	100%	56%	44%	80%	20%
English	47%	68%	32%	44%	56%	0%	100%
Afrikaans	2%	100%	0%	50%	50%	67%	33%
Other	1%	50%	50%	50%	50%	100%	0%
Socio-economic Status							
Has a part-time job	32%	61%	39%	47%	53%	26%	74%
Receives financial aid	26%	15%	85%	43%	57%	58%	42%
Poor	5%	18%	82%	0%	100%	73%	27%
Low Income	14%	6%	94%	45%	55%	68%	32%
Middle Income	49%	25%	75%	57%	43%	47%	53%
Upper Income	29%	73%	27%	45%	55%	17%	83%
Rich	4%	89%	11%	22%	78%	0%	100%

Note: MTNE denotes “mother-tongue non-English” and MTE stands for “mother-tongue English”

Finally, we compare the demographic composition between Player A’s and Player B’s in Table 3.2.

The results show that the distribution of characteristics is even and there are no statistically significant differences on average between the characteristics of participants allocated to the roles of A or B.

Table 3.2: Descriptive Statistics of TG Participants by Player Group

Demographics	Player A All	Player B All
Age	20 (1. 87)	20 (1. 59)
White	37%	33%
Black	63%	67%
Female	50%	50%
Male	50%	50%
MTNE	40%	45%
MTE	60%	55%
South African	80%	80%
Has a part-time job	34%	29%
Receives financial aid	31%	22%
Income		
Poor	5%	5%
Low Income	16%	11%
Middle Income	47%	50%
Upper Income	30%	28%
Rich	2%	6%
Home Language		
Traditional African Language	45%	54%
English	52%	41%
Afrikaans	3%	2%
Other	0%	3%

IV. Trust Game Findings

This section will examine the results of the Trust Game (TG) by focusing on Player A's offers and Player B's returns. In the experiment, participants found out about the gender and racial identity of their partners by viewing their photos. They were also able to hear what their partners sounded like through voice clips. No additional information on the language background was provided by the experimenter. Consequently, participants had the opportunity to identify insiders (the partners who look & sound similar to them) and outsiders based on these visual and audial cues. Numerous studies have shown that when categorization is salient, an individual is perceptive of the potential in-group and out-group differences and the recognition of these differences are most likely to be negative for the out-group and favourable for the in-group [Tajfel, 1959; Sherif, 1966; Tajfel and Turner, 1986; Karp et al., 1993; Yamagishi and Kiyonari, 2000; Lévy-Garboua et al., 2006]. In order to see if the individuals tend to favour partners who are similar to them based on inherited characteristics as well as perceived language background, offers in the Trust Game are compared in two dimensions: ethnicity and language.

4.1 Descriptive Statistics

As mentioned before, the participants were matched with each other based on racial and linguistic background while keeping the gender fixed. As a result, there are no cross-gender interactions in the study. Table 4.1 below displays the descriptive statistics of Player A's mean offers, their expected returns from Player B's, as well as the actual amount returned by Player B's by ethnicity.

Table 4.1: Mean offers, Expectations and Returns in Trust Game by Ethnicity

Categorization	Pairing	Mean offer as proportion of endowment	Proportion of doubled offer proposer expects to be returned (A expects/Doubled amount)	Actual proportion of doubled amount returned to proposer (B returned/Doubled amount)
Total	female	0.37 (0.33) <i>66.00</i>	0.67 (0.51) <i>65.00</i>	0.54 (0.40) <i>52.00</i>
	male	0.48 (0.36) <i>65.00</i>	0.59 (0.36) <i>64.00</i>	0.46 (0.33) <i>53.00</i>
Co-Ethnic Pair	female	0.30 (0.29) <i>39.00</i>	0.73 (0.59) <i>38.00</i>	0.54 (0.34) <i>26.00</i>
	male	0.49 (0.35) <i>35.00</i>	0.57 (0.32) <i>35.00</i>	0.43 (0.33) <i>30.00</i>
Non Co-Ethnic Pair	female	0.48 (0.36) <i>27.00</i>	0.60 (0.36) <i>27.00</i>	0.53 (0.46) <i>26.00</i>
	male	0.46 (0.37) <i>30.00</i>	0.60 (0.41) <i>29.00</i>	0.50 (0.32) <i>23.00</i>

(R1) Female pairs evidence lower trust than male pairs on average

The first row provides the total statistics for female and male pairs separately. It shows that, on average, female proposers offer 37% of their endowments while males propose 48%. This result is significant at the 10% level (Mann-Whitney, $z=-1.613$, $p\text{-value}=0.1067$). One rationale for this might be that the female proposers are offering less because they anticipate being discriminated against. Whilst Hoff and Pandey [2006] argue that groups that have historically been discriminated against (in this case women) may anticipate unequal treatment and behave negatively as a consequence, the expectation results from our study confirm that this is not the case. On average, females expect to receive back 67%, compared to 59% for men, and this difference is not significant. Moreover, the actual returns received back by female Player A's are higher than male Player B's returns—54% of the doubled amount vs. 46%—albeit not being a

statistically significant difference. Thus, on average, female proposers make significantly lower offers in this game despite the fact that their expectations of return and actual return received are not different than their male counterparts.

(R2) Being paired with a co-ethnic partner significantly reduces offers made by women but not by men

The difference in offers between female and male pairs becomes more stark when considering the behaviour of these two groups in co-ethnic pairs.²⁷ The second row of Table 4.1 displays that females in the co-ethnic pairs offer less than one-third of their endowment while men in co-ethnic pairs offer almost half of their money (Mann-Whitney, $z=-2.583$, $p\text{-value}=0.0098$). Differences between males and females are not as stark in non-coethnic pairs (48% vs. 46%, and this is not a statistically significant difference). Moreover, females in co-ethnic pairings offer 30% of their endowments; a much lower amount than the 48% that is offered by females in non-coethnic pairings. (Mann-Whitney, $z=2.429$, $p\text{-value}=0.0151$). Males, on the other hand, exhibit no signs of significant difference in offers between co-ethnic and non-coethnic partners (49% vs. 46%). Numerous experimental studies find no gender difference in sending behaviour [Croson and Buchan, 1999; Clark and Sefton, 2001; Cox and Deck, 2006; Bohnet, 2008; Schwieren and Sutter, 2008]. That being said, our findings so far are more in accord with the results reported in meta-analysis by Croson and Gneezy's [2009] where they come to the conclusion that women trust less than men in the experimental decision making settings.

²⁷ The co-ethnic group consists of same race pairs (Black Player A – Black Player B; White Player A – White Player B) while the non-co-ethnic group includes the mixed race (Black Player A – White Player B; White Player A – Black Player B) pairs.

(R3) Reciprocity by Player B's is not significantly affected by partner ethnicity

Despite the fact that female Player A's make lower offers on average, especially to co-ethnic partners, female Player B's do not appear to make significantly different return offers within pairs. Similarly, co-ethnicity does not lead to any differences in return offers for males. However, we see that female Player B's return significantly higher amounts than male Player B's in co-ethnic pairings (Mann-Whitney, $z=1.750$, $p\text{-value}=0.0802$).

We now turn our attention to the linguistic aspect of the experiment. In the South African context, race and home language are highly correlated due to the historical and political background of the country. Some 39% of White South Africans report English as their home language and 59% report it as Afrikaans. By contrast, only 0.5% of Black individuals speak English as a home language (Statistics South Africa 2003). As reported earlier, 91% of the White students in our sample speak English as a home language compared to 23% of the Black students who regard English as their home language (refer back to Table 3.1).²⁸ To that end, it is important to note that although race and language are highly correlated, they are not synonymous and thereby the same home language pairs and co-ethnic pairs do not constitute a perfect overlap.

In our study, the participants saw a picture and listened to a voice clip that belongs to their partners before making a decision. An important point to emphasize here is the difference between the visual and audial cues: while the participants could observe the race of their partners from the photos, they were not given any information on the home language of their partners by the experimenter. In other words, players could only infer similarity or dissimilarity

²⁸ The rest of the White participants mainly speak Afrikaans at home. 76% of Black students consider one of the traditional African languages as their home language.

based on what *they* heard. According to numerous research findings from different disciplines, speech accents can affect listeners' evaluations of speakers' and play a role when the listeners are forming ideas around similarity with the speakers [Giles, 1970; Giles and Sassoon, 1983; Stewart *et al.*, 1985]. This is relevant in our context because it means that the linguistic dimension will likely alter the degree of similarity that the students feel towards their partners. That being said, we cannot verify if the participants actually infer home language when they listen to the voice clips or if they instead hear an English/ethnic accent. In order to control for this, we utilise two parameters of linguistic identification in this study: home language, as a proxy for linguistic similarity; and mother-tongue English, as a dummy variable that stands for speaking English as a first language and indicates something about accent.

(R4) Linguistic similarity significantly affects trust decisions for men and women but in different directions

As indicated by the linguistic affiliations in Table 4.2, there is a considerable difference in offers between females and males who speak the same home language. In same language pairs, female offer amounts are less than half of the amounts offered by males (Mann-Whitney, $z=-2.448$, $p\text{-value}=0.0143$). This difference in male vs female behaviour is not as stark in pairs where home language is different.

When we compare female offers across linguistic categories, female Player A's make lower offers in same home language pairs (26%) compared to different (40%).²⁹ The reverse holds true for males: Player A's offer a significantly higher amount (62%) if they are paired with someone who speaks the same home language, compared to the percentage (42%) they offer in different home language pairs (Mann-Whitney, $z=-1.762$, $p\text{-value}=0.0781$). Again, female proposers

²⁹ Not a statistically significant result.

appear far more responsive, and negatively so, to being paired with a partner who is similar in some way, in this case home language, and this mirrors the earlier results on ethnicity. For men, the opposite holds true.

(R5) Language appears to affect the return offers expected by women but not by men

In contrast to the ethnicity results in Table 4.1, expectations and returns offer a different story in Table 4.2: While female Player A's make lower offers to same HL partners, they also report lower expected returns from a same HL partner versus a different HL partner (48% vs. 72%). Although this result is not statistically significant, the difference is still large enough to suggest that lower offers might have to do with lower expected returns coming from same HL partner. While it is unclear what might drive these expectations, they do not reflect reality, since both same HL and different HL female Player B's reciprocate about the same amount (Mann-Whitney, $z=-0.885$, $p\text{-value}=0.3761$).

Amongst men, we see that while male Player A's make higher offers to same HL than different HL partners, their expected returns are more or less the same (55% for same HL partners vs. 60%). Thus, although male Player A's make lower offers to different HL partners, they anticipate the same return as they do from a same HL partner. This expectation turns out to be statistically correct—the return offers are not significantly different based on linguistic affiliation.³⁰

³⁰ Males in same HL pairings return 52% compared to 43% for different HL. This is not a statistically significant difference, but direction of difference suggests that, if anything, male expectations were in the wrong direction.

Table 4.2: Mean Offers, Expectations, and Returns in Trust Game by Home Language

Categorization	Pairing	Mean offer as proportion of endowment	Proportion of doubled offer proposer expects to be returned (A expects/Doubled amount)	Actual proportion of doubled amount returned to proposer (B returned/Doubled amount)
Total	female	0.37 (0.33) 66.00	0.67 (0.50) 65.00	0.54 (0.40) 52.00
	male	0.48 (0.36) 65.00	0.59 (0.36) 64.00	0.46 (0.33) 53.00
Same-Home Language Pair	female	0.26 (0.30) 13.00	0.48 (0.39) 13.00	0.49 (0.37) 9.00
	male	0.62 (0.40) 19.00	0.55 (0.36) 19.00	0.52 (0.39) 17.00
Diff-Home Language Pair	female	0.40 (0.33) 53.00	0.72 (0.52) 52.00	0.55 (0.40) 43.00
	male	0.42 (0.33) 46.00	0.60 (0.36) 45.00	0.43 (0.30) 36.00

Our final goal in the descriptive statistics section is to analyse the interaction between race and language. Accordingly, Table 4.3 includes four categories which will be used to cross-reference the two variables:

1. Complete similarity (**same race, same home language**)
2. One degree of difference (**same race, different home language**)
3. One degree of difference (**different race, same home language**)
4. Complete dissimilarity (**different race, different home language**)

(R6) Similarity appears to promote trusting behaviour for men, but the opposite holds true for women

Male subjects send 75% of their endowments when they are paired with someone who is completely similar to them (similar in terms of race and language), and this amount is significantly higher than any of the other three categories in race & language interactions (when some element of heterogeneity is introduced).³¹ Conversely, for women, similarity is not conducive to trusting behaviour. Females who are in the same race-same HL group make the lowest offers of 19% and this is significantly lower than male offers in the same category, which hover around 75% (Mann-Whitney, $z=-2.821$, $p\text{-value}=0.0048$). As differences in pair characteristics increase, however, female offers also increase. In fact, the highest female offer of 49% takes place in the last category where there is complete heterogeneity, and this is significantly higher than the same race-same HL amount (Mann-Whitney, $z=-2.281$, $p\text{-value}=0.0226$). In sum, whilst homogeneity appears to bolster trusting behaviour for men, the opposite holds true for women.³²

³¹ Same Race & Same HL vs. Same Race & Diff HL: Mann-Whitney, $z=2.618$, $p\text{-value}=0.0088$; Same Race & Same HL vs. Different Race & Same HL: Mann-Whitney, $z=1.842$, $p\text{-value}=0.0655$; Same Race & Same HL vs. Different Race & Different HL: Mann-Whitney, $z=1.855$, $p\text{-value}=0.0636$.

³² There are no statistically significant differences in the expected amounts and return offers.

Table 4.3: Mean Offers, Expectations, and Returns in Trust Game by Ethnicity and Home Language

Categorization	Pairing	Mean offer as proportion of endowment	Proportion of doubled offer proposer expects to be returned (A expects/Doubled amount)	Actual proportion of doubled amount returned to proposer (B returned/Doubled amount)
1. Same Race & Same Home Language	female	0.19 (0.21) 9.00	0.51 (0.44) 9.00	0.65 (0.42) 5.00
	male	0.75 (0.38) 12.00	0.54 (0.32) 12.00	0.49 (0.46) 12.00
Total		0.51 (0.42) 21.00	0.53 (0.36) 21.00	0.54 (0.44) 17.00
2. Same Race & Diff Home Language	female	0.33 (0.30) 30.00	0.79 (0.62) 29.00	0.52 (0.32) 21.00
	male	0.36 (0.26) 23.00	0.59 (0.33) 23.00	0.40 (0.22) 18.00
Total		0.34 (0.28) 53.00	0.70 (0.52) 52.00	0.46 (0.28) 39.00
3. Diff Race & Same Home Language	female	0.43 (0.43) 4.00	0.41 (0.31) 4.00	0.30 (0.22) 4.00
	male	0.39 (0.34) 7.00	0.57 (0.45) 7.00	0.61 (0.11) 5.00
Total		0.40 (0.35) 11.00	0.51 (0.40) 11.00	0.47 (0.22) 9.00
4. Diff Race & Diff Home Language	female	0.49 (0.36) 23.00	0.63 (0.36) 23.00	0.57 (0.48) 22.00
	male	0.48 (0.39) 23.00	0.61 (0.40) 22.00	0.47 (0.36) 18.00
Total		0.48 (0.37) 46.00	0.62 (0.38) 45.00	0.53 (0.43) 40.00

The summary statistics in this section explored the mean offers, expected returns and actual returns in the Trust Game by different race and language categories. The main findings can be summarized as below:

- Females exhibit less trusting behaviour than men and this behaviour is mainly driven by females in co-ethnic pairs,
- Although men tend to trust more, females reciprocate more in co-ethnic pairs only,
- Linguistic affiliation leads to higher offers for males and the opposite holds true for women. Overall, the results suggest that males are more trusting in homogeneous groups and females are more trusting in heterogeneous groups.

We now move onto a multivariate framework to further examine these results.

4.2 Regression Results

The regression results presented in this section utilise a standard Tobit framework with double censoring. The rationale behind this approach is that the offer a player can make to the other is bounded between two extremes – a zero offer at the lower bound of the distribution and a R50 full offer at the upper bound. Formally, let y_i^* be a latent variable which measures the amount of money one player is willing to offer to the other, and it linearly depends on a vector of variables X_i' . However, we only observe y_i , which is the actual amount of money offered by the player. Then the model we estimate has the following structure:

$$y_i = \alpha + X_i' \gamma + \varepsilon_i ; \quad (1)$$

where

$$y_i = \begin{cases} y_i^* & \text{if } y_i^* \in [0,50] \\ 0 & \text{if } y_i^* < 0 \\ 50 & \text{if } y_i^* > 50 \end{cases} . \quad (2)$$

We use this specification, as opposed to conventional ordinary and non-linear least squares (e.g. logit, probit) because they are inconsistent and less efficient when the outcome variable of interest is of the above form (see Wooldridge, 2002).³³ The rest of the section presents the findings of the regression analyses. First, we look at race and gender in the context of trust. Following that, we introduce the language effect and look for a relationship between accents and trust. Thereafter, we analyse the results using the voice evaluations from third party judges to be able to compare the regressions between self-reported first language and voted first language. Finally, we replicate the same exercise for the responses of Player B's, controlling for the amount proposers sent, in the aspect of trustworthiness.

³³ The results are robust when we estimate both OLS and logit/probit models.

4.2.1 Trust

Does gender & race matter?

Table 4.4 below reports the marginal effects of Tobit regressions controlling for a number of potential confounding factors. These include a control for financial aid—used as a proxy for socio-economic status³⁴—and a control for familiarity between students—as some of the participants might be friends, which would lead to biases in their responses.³⁵ The first three columns confirm that there is, in fact, a difference between male and female offers. On average, offers by male participants are 22% higher than those of their female counterparts. This is a robust result even when we control for the proposer’s expected return (columns 2 and 3).

Turning to separate regressions for males and females, Columns 4-6 indicate that there is no significant difference in the proposals conditional on the race of proposers for men. Black women, on the other hand, make significantly higher offers than their White counterparts. Moreover, as in the summary statistics, males make significantly higher offers in co-ethnic pairs while the opposite holds true for women.

The strong distrust amongst women in co-ethnic groups raises interesting questions about the source of this sentiment. In particular, we are interested in finding out whether the distrust lies within White-White or Black-Black pairs. Columns 6 and 9 give us a perspective on the direction of co-ethnicity by adding an interaction term between co-ethnic pairs and Black Player B’s. Once

³⁴ University of Cape Town’s financial aid programme requires students to prove that they are in need of financial aid.

³⁵ All of the tobit regressions include the following additional controls: age of the proposer, squared age of the proposer, socioeconomic status, proposer’s nationality and a dummy indicating if the players know each other or not.

we control for this interaction, the co-ethnic pair variable is still significant for both males and females and the interaction term is negative. This suggests that the co-ethnicity effect is not different for Black or White Player As. That being said, the co-ethnic pair co-efficient for males increase when we add the interaction term suggesting that the positive bias is mostly driven by the White-White pairs.³⁶

To answer the question we posed at the beginning of this section, we find strong evidence that gender and race indeed matter in the context of trust. In particular:

1. Males make significantly higher offers than females,
2. Black females are significantly more trusting than White females, especially towards White partners,
3. For men, positive co-ethnicity bias is stronger amongst White pairs than Black pairs. Even though the co-efficient on the interaction term is insignificant, it is large and economically significant.
4. For women, negative co-ethnic co-efficient is marginally larger in Black pairs, but the size of co-efficient on interaction is small.

³⁶ Even though the regression results do not point out to any significant differences, the descriptive statistics show that there is indeed a difference within co-ethnic offers by males. Average offer by males in White-White pairing is 0.73, while Black-Black pairings send 0.38 on average (Mann-Whitney, $z=2.225$, $p\text{-value}=0.0261$). An average offer by females in White-White pairings is 0.36 and in Black-Black pairings hovers around 0.29 (not statistically different). These results must be interpreted with caution since the sample size is too small to test for definitive results.

Table 4.4: Offers in Trust Game

<i>Dependent variable: Amount sent by Player A</i>									
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit All	(4) Tobit Male	(5) Tobit Male	(6) Tobit Male	(7) Tobit Female	(8) Tobit Female	(9) Tobit Female
Proposer is Male	0.213*	0.224*	0.224*						
	(0.129)	(0.116)	(0.117)						
Proposer is Black	0.0304	0.250*	0.248	-0.132	0.191	0.289	0.516*	0.696***	0.706***
	(0.161)	(0.140)	(0.181)	(0.207)	(0.172)	(0.231)	(0.287)	(0.176)	(0.201)
Proposer Receives Financial Aid	-0.316*	-0.368***	-0.368***	-0.294	-0.393***	-0.390***	-0.344	-0.116	-0.116
	(0.174)	(0.138)	(0.138)	(0.201)	(0.145)	(0.144)	(0.273)	(0.199)	(0.198)
Proposer is South African	0.205	0.287*	0.287*	0.354	0.434*	0.438*	0.256	0.133	0.134
	(0.194)	(0.147)	(0.147)	(0.321)	(0.227)	(0.230)	(0.236)	(0.163)	(0.163)
Co-ethnic Pair	-0.0276	0.113	0.110	0.237	0.390***	0.529*	-0.603**	-0.671***	-0.661**
	(0.127)	(0.126)	(0.239)	(0.162)	(0.150)	(0.307)	(0.273)	(0.169)	(0.311)
Proposer's Expected Return		0.0305***	0.0305***		0.0270***	0.0270***		0.0394***	0.0394***
		(0.00278)	(0.00278)		(0.00397)	(0.00393)		(0.00210)	(0.00213)
Co-ethnic Pair X Proposer is Black			0.00465			-0.221			-0.0178
			(0.280)			(0.375)			(0.323)
Observations	117	117	117	61	61	61	56	56	56

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported. The sample size decreases to 117 from 131 due to missing data on financial aid.

Does language matter?

Since the motivation of this study is to observe the effect of language above and beyond the implications of a given race, we continue our regression analysis by adding a variable that accounts for home language. As stated before, Player A's see a picture and hear a voice clip of Player B's. The caveat here is that while a photograph can clearly signal the ethnic identity and gender of a participant, inferring background information from a voice clip can be less obvious. However, earlier studies show that the human ability to guess home language status after an aural cue is indeed strong. For instance, Purnell, Idrardi, & Baugh [1999] demonstrate that a group of untrained listeners hearing a voice over the telephone could guess the race of speakers after hearing them say only the word "hello".³⁷ Similarly, Flege's [1984] perceptual study shows that phonetically untrained listeners are able to detect a foreign accent in tiny segments of speech as short as .03 seconds.

In our experiment, the script that the students repeated was in English. By keeping the scripts identical and monolingual, we made it possible for the students to hear if their partners sounded like them or not. Although this fact was not revealed to the students, the participants' linguistic backgrounds were known by the experimenters since it was collected in the application forms, as well as during one-on-one interviews. Following the in-group/out-group framework, we now check whether there are implications of linguistic sameness or segmentation, as many studies have shown that an accent different from one's own is an important indicator signalling that someone is different [Ryan *et al.*, 1983; Giles *et al.*, 1987; White & Li, 1991; Bresnahan and Kim, 1993].

From the summary statistics, we already know that males have a tendency to favour in-group individuals whereas females act in the opposite manner when it comes to trust. In this section the primary question we are posing is "Does race remain a robust factor once we take language into

³⁷ The success rate of correct identification is more than 70% of the time.

account?” The variable “Same HL Pair” is utilised as a proxy for linguistic similarity in Table 4.5. It is important to bear in mind that home language just measures the effect of participants speaking the same home language and it should be interpreted differently from speaking English with an accent.

(R7) Belonging to the same home-language group has no significant effect on trusting behaviour

The estimates presented in Table 4.5 incorporate the linguistic dimension while still controlling for co-ethnicity. The reason behind this approach lies in the experimental design: the participants saw the photo *before* they could click on the play button to hear the voice clip. Hence, there is no value in examining the same HL on its own as ethnic identity of one’s partner was inevitably part of the information held by the player. Overall, the same home language variable is not statistically significant in any of the specifications. The coefficient on co-ethnicity for males (Column 3) is still positive and significant when we control if the pairs speak the same home language, while the latter takes on a positive value. This result backs up summary statistics which indicated that males respond to sameness positively. The opposite holds for females (Column 5)—co-ethnicity is negative and significant when we factor in HL, while HL coefficient is negative. In other words, women respond negatively to sameness.

The interaction between co-ethnicity and same home language (Columns 4 and 6) shows that the co-ethnicity variable for males loses its significance but stays positive, whereas the co-ethnicity coefficient for females remains robust. The interaction term is insignificant for both males and females, implying that belonging to the same language group does not create much difference for the participants who share the same ethnicity. Interestingly enough, the interaction term is positive, potentially suggesting a correlation with regards to pairs who share the same ethnolinguistic background³⁸, but unfortunately the sample size is too small to verify anything further.

³⁸ Ethnolinguistic background combines the phenotype of skin colour with language of origin for an individual.

Table 4.5: Offers in Trust Game & Home Language

<i>Dependent variable: Amount sent by Player A</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Proposer is Male	0.226* (0.116)	0.227* (0.117)				
Proposer is Black	0.249* (0.138)	0.258* (0.153)	0.194 (0.174)	0.234 (0.190)	0.692*** (0.181)	0.727*** (0.185)
Proposer Receives Financial Aid	-0.376*** (0.141)	-0.373*** (0.142)	-0.369** (0.152)	-0.360** (0.157)	-0.164 (0.199)	-0.150 (0.205)
Proposer is South African	0.292* (0.150)	0.287* (0.152)	0.418* (0.234)	0.398 (0.249)	0.171 (0.165)	0.163 (0.171)
Proposer's Expected Return	0.0305*** (0.00277)	0.0305*** (0.00277)	0.0269*** (0.00400)	0.0268*** (0.00399)	0.0383*** (0.00241)	0.0382*** (0.00237)
Co-ethnic Pair	0.118 (0.124)	0.0991 (0.160)	0.383*** (0.146)	0.309 (0.191)	-0.643*** (0.165)	-0.704*** (0.193)
Same Home Language Pair	-0.0359 (0.140)	-0.0696 (0.248)	0.112 (0.178)	-0.0117 (0.281)	-0.148 (0.185)	-0.270 (0.327)
Co-ethnic Pair X Same Home Language Pair		0.0595 (0.330)		0.249 (0.433)		0.180 (0.398)
Observations	117	117	61	61	56	56

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

Does accent matter?

In order to unpack the interplay between ethnicity and language, we introduce a binary self-report measure which indicates if the subjects identify themselves as first language English speakers or not.

Mother Tongue English³⁹ (MTE) participants speak English with no or very little pronounced accent whereas the Mother Tongue Not English (MTNE) subjects speak English with a degree of foreign accent. In the international literature, it is now widely accepted that the acquisition of a second language after the critical stage (early childhood) inevitably leads to speech that differs from that of native speakers, mainly because established knowledge of the sound system of the first language

³⁹ In this study we are using the terms first language English (FLE) and mother tongue English (MTE) interchangeably. MTE denotes not only the language one learns from one's mother, but also the speaker's dominant and home language, i.e. not only the first language according to the time of acquisition, but the first with regard to its importance and the speaker's ability to master its linguistic and communicative aspects [Pokorn, 2005]

impacts the perception and production of the phonetic patterns of the second [Flege, Munro, & MacKay, 1995; Long, 1990; Oyama, 1976; Scovel, 1988; Tahta, Wood & Loewenthal, 1981].

In the framework of this research, the “same home language” and “mother-tongue English” variables measure different elements: while the same HL is a proxy to investigate linguistic sameness/segmentation, MTE attempts to capture the effects of speaking English with an accent or not. Primarily, we are interested to find out if there is any premium on speaking English as a first language in a strategic setting where trust is a pre-requisite for any interaction.

(R8) Accent mediates the effect of being paired with a co-ethnic partner, especially for women

Table 4.6 presents the offers in the Trust Game when we factor in the mother tongue English variable and investigate how it behaves on its own and when interacted with co-ethnicity. Amongst men, offers are significantly higher in co-ethnic pairs as before and there is no significant impact of having a mother tongue English partner. When we interact Partner is MTE with co-ethnicity under Column 4, the co-ethnicity variable loses its significance and becomes smaller. The interaction term itself suggests that males in co-ethnic pairings send 46% more when partnered with a mother tongue English speaker and even though this interaction lacks significance, it still suggests that offers in co-ethnic pairs are larger when males have a first-language English partner.

On the other hand, Column 5 shows that females make 33% lower offers if their partner is MTE and this is statistically significant at the 1% level. The crux of the story is told by the interaction term itself under Column 6: whilst females make significantly lower offers to co-ethnic partners, this is reduced if the partner is mother-tongue English. The positive and significant interaction term indicates that females in co-ethnic pairings make 61% higher offers to first-language English partners than those who are not first language English. The subjects in question are the “Black & Black” and “White & White” pairs where Player B’s are receiving significantly higher offers if they are MTE speakers. Thus, the data suggests that there might be a language effect, more specifically an accent

effect, along with the race dynamics especially for females who react to accents strongly in co-ethnic pairs.

Table 4.6: Offers in Trust Game, Ethnicity & Mother Tongue

<i>Dependent variable: Amount sent by Player A</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Proposer is Male	0.230** (0.114)	0.236** (0.113)				
Proposer is Black	0.264* (0.140)	0.367** (0.164)	0.144 (0.183)	0.274 (0.223)	0.666*** (0.179)	0.838*** (0.219)
Proposer Receives Financial Aid	-0.390*** (0.142)	-0.374*** (0.144)	-0.358** (0.147)	-0.389** (0.156)	-0.221 (0.180)	-0.102 (0.200)
Proposer is South African	0.274* (0.146)	0.293** (0.149)	0.449* (0.234)	0.497** (0.236)	0.0882 (0.171)	0.104 (0.163)
Proposer's Expected Return	0.0303*** (0.00279)	0.0304*** (0.00278)	0.0275*** (0.00415)	0.0280*** (0.00392)	0.0381*** (0.00198)	0.0379*** (0.00211)
Co-ethnic Pair	0.0974 (0.128)	-0.158 (0.205)	0.434*** (0.152)	0.161 (0.245)	-0.647*** (0.168)	-1.104*** (0.289)
Player B is Mother Tongue English	-0.106 (0.116)	-0.340 (0.209)	0.194 (0.170)	-0.0651 (0.291)	-0.331*** (0.120)	-0.708*** (0.210)
Co-ethnic Pair X Player B is Mother Tongue English		0.383 (0.255)		0.457 (0.348)		0.605* (0.321)
Observations	117	117	61	61	56	56

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

(R9) Accent is a particularly important mediator for females with Black partners

Given that White participants are mostly mother tongue English speakers, a more interesting question to ask is how do Player A's respond to Black partners with mother tongue English accents. This question is especially relevant in South Africa where discriminatory practices were based on racial divides during the apartheid era. Here we have a group of Black South Africans, who have been historically discriminated over something that they have no control over (skin colour), but they can, more or less, control their decision to invest in a non-African language. Although language

ability is partly inherited, individuals can still choose to invest in it over time if they believe that returns to speaking the economically dominant language is higher.

We are interested in whether or not Black Player B's with mother tongue English accent (i.e. individuals who have made this investment) receive significantly higher offers. In order to answer this question, in Table 4.7 we limit the sample to those who were paired with a Black partner. Once we adjust our focus, it becomes clear that Black males make significantly higher offers (to Black partners) than White males. On the other hand, Black female Player A's make significantly lower offers (to Black partners) than White players. Again, this is in line with earlier descriptive statistics where the offers are significantly different based on co-ethnicity affiliation.

Black male proposers make higher offers to Black partners than White male proposers and this is further enhanced if Black partner is mother tongue English speaking. To be sure, the co-efficients are not statistically significant, but they are still fairly large in magnitude.⁴⁰ Conversely, White proposers make lower offers to Black partners with mother tongue English accents although this coefficient is very small and not significant. Thus, no statistically strong evidence of accents playing a mediating role for males was found.

Amongst females, Black proposers make significantly lower offers to Black partners but this is undone if a Black partner has a mother tongue English accent. The converse is true for White females: Column 6 suggests that, *ceteris paribus*, White females make higher offers to Black partners but not if they are MTE. In other words, for White females, hearing an MTE accent reverses the positive race effects.

⁴⁰ It is important to note that lack of significance may simply reflect low sample size power.

Table 4.7: Offers in Trust Game, Ethnicity & Mother Tongue-Only Black Player Bs

Dependent variable: Amount sent by Player A

VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Proposer is Male	0.187 (0.154)	0.190 (0.150)				
Proposer is Black	0.255 (0.187)	0.0267 (0.240)	0.450** (0.226)	0.363 (0.267)	-0.0499 (0.240)	-0.500** (0.246)
Proposer Receives Financial Aid	-0.144 (0.236)	-0.0739 (0.269)	-0.0987 (0.249)	-0.113 (0.262)	-0.00435 (0.277)	0.253 (0.273)
Proposer is South African	0.108 (0.188)	0.138 (0.200)	0.129 (0.292)	0.173 (0.287)	-0.0704 (0.286)	-0.0958 (0.237)
Proposer's Expected Return	0.0348*** (0.00354)	0.0352*** (0.00371)	0.0304*** (0.00425)	0.0310*** (0.00386)	0.0415*** (0.00437)	0.0422*** (0.00420)
Player B is Mother Tongue English	-0.148 (0.160)	-0.508 (0.312)	0.152 (0.242)	-0.0277 (0.471)	-0.420*** (0.161)	-1.009*** (0.308)
Proposer is Black X Player B is Mother Tongue English		0.566 (0.357)		0.295 (0.509)		0.907** (0.392)
Observations	79	79	37	37	42	42

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported. It should be noted that the sample is smaller as it is only limited to Black Player A's.

(R10) Objective voice assessment results for first-language English follow the self-reported mother tongue English outcomes

The findings presented thus far suggest a pattern of favouritism towards co-ethnic partners for males irrespective of accent and co-ethnic partners for females *only if* they have a first language English accent. In other words, males and females tend to behave in opposing directions and females are particularly sensitive to how their partners sound. So far we have used the self-reported mother-tongue English variable for the participants to analyse the relationship between Player A's offers and the characteristics of the pairs. Even though self-reported measures are commonly used as an evaluation tool, it has its own limitations: self-reported data is in essence a subjective proxy and thus it may lead to selection bias.⁴¹

As a robustness check, we incorporate the independent third party voice evaluations and re-run the regressions with this objective variable which proxies for accents. As explained earlier⁴², each Trust Game subject is assessed by six different evaluators and the composite score for each is reached by taking the average of these ratings. The variable we use in the regressions, "Player B is voted as MTE", is a binary variable which takes on a value of one if the majority of the voice evaluators rated Player B as a first-language English speaker.

We motivate our approach in using third party voice evaluators based on compelling research in linguistics and social psychology. Numerous studies have investigated the identifiability of racial background in the presence of audial stimuli and invariably they found that evaluators can recognize the ethnolinguistic differences in English with a high degree of accuracy [Purnell, Idsardi and Baugh, 1999; Thomas and Reaser, 2004; Newman and Wu, 2011]. In our study, we found that 83% of the self-reported MTE speakers were also rated as first-language English speakers by the third party voice evaluators. Only 26 of the MTE participants were voted as non-mother tongue language

⁴¹ For example, participations might report English as a first language if they believe that it is important for success.

⁴² Please refer to Experimental Procedure

English speakers and these are in fact all Black students with different home language backgrounds.⁴³ Therefore, it is plausible to regard the voice evaluations as a conservative MTE variable since the judges were very sensitive to even slight accents in the participants' voice clips.

In most cases, the regression results using the third party evaluations validate the previous findings using the self-reported measures as can be seen in Table 4.8 (for comparative reasons, we report the self-report and evaluation results side by side although the table mainly highlights the third party evaluations). Comparing Columns 2 and 4 shows that the co-ethnicity co-efficient for males loses significance when we add the interaction to the regression. However, the co-ethnicity co-efficient is still positive, as is the interaction term, which suggests that sounding mother tongue English strengthens the co-ethnicity bias. For females, offers are lower in co-ethnic pairs but this is reversed if Player B is mother tongue English.

As a final regression, we replicate our approach in Table 4.7 and limit the sample to Black Player B's again in order to isolate the impact of mother tongue English for Black subjects. The results are reported in Table 4.9. Amongst men, "Proposer Black" co-efficient is positive and significant under Column 2. This effect is further enhanced if Player B is also mother-tongue English as shown by the interaction term. Females, on the other hand, start with a negative co-ethnicity effect for Black pairs. This gets reversed if Player B is evaluated as mother-tongue English: Black Player A's make 74% higher offers if they are matched with a Black Player B who sounds like a mother tongue English speaker. It can thus be suggested that in Black-Black pairs, speaking English as a mother tongue is a positive attribute. When we look at the offers in White-Black pairs with regards to mother-tongue English, "Player B is Mother-Tongue English" co-efficients under Columns 4 and 6 suggest that White students trust Black subjects with MTE accents less or perhaps feel less altruistic towards them.⁴⁴

⁴³ Only one White self-identified MTE student was rated as non-FLE, who actually reported her home language as Afrikaans.

⁴⁴ Attempts were made to run probit regressions on zero offers but given that only 10% of the whole sample sent R0, the results are unreliable.

Table 4.8: Offers in Trust Game-Comparison between Self-Reported Language Skills and Third Party Evaluations

VARIABLES	Tobit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Males	Males	Males	Males	Females	Females	Females	Females
	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation
Proposer is Black	0.144 (0.183)	0.205 (0.171)	0.274 (0.223)	0.382* (0.224)	0.666*** (0.179)	0.697*** (0.176)	0.838*** (0.219)	0.803*** (0.215)
Proposer Receives Financial Aid	-0.358** (0.147)	-0.412*** (0.151)	-0.389** (0.156)	-0.420*** (0.156)	-0.221 (0.180)	-0.147 (0.201)	-0.102 (0.200)	-0.0570 (0.209)
Proposer is South African	0.449* (0.234)	0.456** (0.230)	0.497** (0.236)	0.452* (0.246)	0.0882 (0.171)	0.121 (0.163)	0.104 (0.163)	0.113 (0.165)
Proposer's Expected Amount	0.0275*** (0.00415)	0.0270*** (0.00392)	0.0280*** (0.00392)	0.0281*** (0.00375)	0.0381*** (0.00198)	0.0390*** (0.00211)	0.0379*** (0.00211)	0.0397*** (0.00242)
Co-ethnic Pair	0.434*** (0.152)	0.366** (0.157)	0.161 (0.245)	0.0232 (0.274)	-0.647*** (0.168)	-0.666*** (0.167)	-1.104*** (0.289)	-0.969*** (0.316)
Player B is Mother Tongue English	0.194 (0.170)	-0.102 (0.172)	-0.0651 (0.291)	-0.410 (0.268)	-0.331*** (0.120)	-0.120 (0.142)	-0.708*** (0.210)	-0.375 (0.241)
Co-ethnic Pair X Player B is Mother Tongue English	-	-	0.457 (0.348)	0.569 (0.411)	-	-	0.605* (0.321)	0.406 (0.334)
Observations	61	61	61	61	56	56	56	56

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Results are conditional on age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

Table 4.9: Offers in Trust Game-Comparison between Self-Reported Language Skills and Third Party Evaluations-Only Black Player B's

VARIABLES	Tobit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Males	Males	Males	Males	Females	Females	Females	Females
	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation
Proposer is Black	0.450** (0.226)	0.559** (0.226)	0.363 (0.267)	0.368 (0.323)	-0.0499 (0.240)	-0.107 (0.248)	-0.500** (0.246)	-0.521* (0.268)
Proposer Receives Financial Aid	-0.0987 (0.249)	-0.374 (0.281)	-0.113 (0.262)	-0.377 (0.297)	-0.00435 (0.277)	0.159 (0.311)	0.253 (0.273)	0.441 (0.320)
Proposer is South African	0.129 (0.292)	0.384 (0.268)	0.173 (0.287)	0.352 (0.326)	-0.0704 (0.286)	-0.0930 (0.278)	-0.0958 (0.237)	-0.215 (0.278)
Proposer's Expected Amount	0.0304*** (0.00425)	0.0317*** (0.00348)	0.0310*** (0.00386)	0.0342*** (0.00382)	0.0415*** (0.00437)	0.0441*** (0.00517)	0.0422*** (0.00420)	0.0484*** (0.00584)
Player B is Mother Tongue English	0.152 (0.242)	-0.510** (0.259)	-0.0277 (0.471)	-0.888* (0.459)	-0.420*** (0.161)	-0.143 (0.177)	-1.009*** (0.308)	-0.635** (0.302)
Proposer is Black X Player B is Mother Tongue English	-	-	0.295 (0.509)	0.614 (0.547)	-	-	0.907** (0.392)	0.743* (0.381)
Observations	37	37	37	37	42	42	42	42

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Results are conditional on age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported. It should be noted that the sample is smaller as it is only limited to Black Player A's.

In summary, the resulting empirical evidence is rather mixed along racial lines and gender groups. The summary statistics suggest that similarity promotes trusting behaviour for males while the opposite holds true for females. This pattern is backed up by the regression results. When we examined the offers in the Trust Game by race and gender, we found that on average males make higher offers, especially in White-White pairings. We then checked to see if these results remained robust we add language variables into the account. From the language and accents perspective, four important findings are of note: (1) belonging to the same home language group has no significant effect, (2) there is favouritism towards co-ethnic partners for males *irrespective* of accents whereas females show favouritism for co-ethnic partners *only if* they are mother tongue English speakers, (3) when we introduce the mother tongue English variable, Black proposers send more to Black trustees but White proposers send relatively less , and (4) using the assessed English accent variable, which can be considered as a more conservative proxy for accents, confirms and strengthens the previous results.

Turning now from trust we look at recipients' trustworthiness and analyse it in different racial, gender and language groups in the next section.

4.2.2 Trustworthiness

During the first stage of the Trust Game, Player A's were given a choice: if they were willing to place trust in Player B's by risking some of their endowments, Player B's could also choose to reciprocate and reward this trust. So far, the paper has focused extensively on the degree of trust—measured by the amount sent—by Player A's in a one-shot Trust Game. This section will introduce the degree of trustworthiness (or reciprocity)—measured by the amount returned—demonstrated by Player B's. The difference between trust and trustworthiness lies in the motivation of the behaviour: trust is considered to be motivated by beliefs of trustworthiness and on unconditional kindness. Trustworthiness, in return, is assumed to be driven by reciprocity as well as unconditional kindness in the realm of behavioural economics [Ashraf et al., 2006].

Reciprocity originates from a basic fairness heuristic perspective: if a trustee returns the full amount (before being doubled), then this act supports the proposition that individuals reciprocate in response to being trusted and that the extent of reciprocity is directed by equity considerations [Burks et al., 2003]. Unconditional kindness, on the other hand, touches upon utility functions. For instance, Rabin [1993] includes a kindness function into subjects' utility in order to capture the direct and positive relationship between the predisposition to reciprocate and initial kindness. Put simply, trustworthy behaviour is considered to be rooted in social norms such as reciprocity and kindness.

What happens to reciprocity when racial and linguistic identities of the partners are revealed? Coleman [1990] argues that norms (which are described as a set of implicit or explicit rules, socially defined as appropriate, to control an individual's action) are more likely to be internalized when a subject can clearly identify with a particular group. In order to see if the individuals tend to favour partners who are similar to them based on inherited characteristics as well as perceived language background, we will examine reciprocity by ethnicity and language.

(R11) Reciprocity is not significantly affected by partner ethnicity

Table 4.10 replicates the summary statistics in the previous section and aggregates the return offers all together. On average, men return 46% compared to women who send back 54%, a difference that is not statistically significant. However, if we look at the difference between females and males in co-ethnic pairs, we find that female Player B’s return significantly higher amounts than males in co-ethnic pairings (Mann-Whitney, $z=1.750$, $p\text{-value}=0.0802$). This is rather an unexpected result in terms of reciprocity considering that females in co-ethnic pairs are the ones who make the lowest offers hovering around 30% (refer back to Table 4.1). Home language affiliation, shown on the right hand side of Table 4.10, does not seem to affect any of the return offers. Both females and males return about the same amount in same and different home language pairings.

Table 4.10: Returns in Trust Game

by Ethnicity			by Home Language		
Categorization		Actual proportion of doubled amount returned to proposer (B returned/Doubled amount)	Categorization		Actual proportion of doubled amount returned to proposer (B returned/Doubled amount)
Total	female	0.54 (0.40) 52.00	Total	female	0.54 (0.40) 52.00
	male	0.46 (0.33) 53.00		male	0.46 (0.33) 53.00
Co-Ethnic Pair	female	0.54 (0.34) 26.00	Same-Home Language Pair	female	0.49 (0.37) 9.00
	male	0.43 (0.33) 30.00		male	0.52 (0.39) 17.00
Non Co-Ethnic Pair	female	0.53 (0.46) 26.00	Diff-Home Language Pair	female	0.55 (0.40) 43.00
	male	0.50 (0.32) 23.00		male	0.43 (0.30) 36.00

To test for other possibilities, a series of tobit regressions will be presented in the next section where the dependent variable is the amount sent back by Player B.⁴⁵ It is important to note that in these regressions, the sample size decreases to 96 from 117 due to attrition.

Does gender & race matter?

(R12) Reciprocity is lower in co-ethnic pairs, especially for males

Controlling for the amount received from Player A's, Table 4.11 presents the return amounts in the Trust Game. Unlike the initial offers by Player A's, there are no significant differences on average between males and females in the return offers. Controlling for the amount received by trustees, it is clear that males in co-ethnic pairs reciprocate significantly less (Column 3). Females in co-ethnic pairings also make 16% lower return offers than females in non-coethnic pairings, albeit the coefficient is not significant. Simply put, Table 4.11 supports the descriptive statistics in that co-ethnic males make significantly lower return offers than co-ethnic females. Compared to the offers by Player A's, these are rather surprising results since we have found that: (1) Males make significantly higher offers than females, and (2) Males in co-ethnic pairings make higher offers. This indicates that the return offers are not set to be direct reciprocations of the initial offers.

⁴⁵ The dependent variable, Amount sent back in the Trust Game, is logged to minimise scaling effects. In order to avoid getting missing values, we utilised a transformation by setting all censored observations of $\ln x$ (Amount sent back by Player B) to an amount slightly smaller than the minimum non-censored value of $\ln x$.

Table 4.11: Return Offers by Trustees in the Trust Game

<i>Dependent variable: Amount sent back by Player B</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Trustee is Male	-0.0337 (0.171)	-0.0346 (0.172)				
Trustee is Black	0.278 (0.203)	0.244 (0.264)	0.528** (0.252)	0.557* (0.338)	0.0392 (0.289)	0.00542 (0.445)
Trustee Receives Financial Aid	-0.0586 (0.222)	-0.0518 (0.226)	0.282 (0.278)	0.281 (0.277)	-0.369 (0.446)	-0.359 (0.486)
Trustee is South African	0.0500 (0.245)	0.0433 (0.238)	0.247 (0.305)	0.247 (0.304)	-0.440 (0.293)	-0.453 (0.312)
Amount received by Trustee	0.0487*** (0.00575)	0.0490*** (0.00585)	0.0528*** (0.00750)	0.0524*** (0.00837)	0.0528*** (0.00704)	0.0530*** (0.00718)
Co-ethnic Pair	-0.230 (0.182)	-0.273 (0.328)	-0.358* (0.216)	-0.325 (0.439)	-0.163 (0.303)	-0.212 (0.442)
Trustee is Black X Co-ethnic Pair		0.0707 (0.425)		-0.0614 (0.590)		0.0724 (0.616)
Observations	96	96	53	53	43	43

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

Does language matter?

(R13) Co-ethnic males who speak the same home language return lower amounts

Similar to Player A's experimental setting, Player B's also had to listen to a voice clip before they made a decision on how much money, if any, they would like to return. Table 4.12 shows that once we add the home language variable to the regression model, very few co-efficients are significant. That being said, it is interesting to see that the co-ethnicity is still positive for men (Column 4) and negative for women (Column 6); a pattern that was consistently repeated for Player A's. On the other hand, Column 4 shows that the return offers are significantly lower for males in co-ethnic pairings if partners share the same home language. This stands in contrast to earlier results as we found that for males, homogeneity in characteristics is instrumental for trust as they make the highest offers when paired with someone from a similar racial and linguistic background (refer back

to Table 4.3). Amongst women, we find that reciprocity is mainly driven by the amount received and has little to do with partner characteristics.

Table 4.12: Returns in Trust Game & Home Language

<i>Dependent variable: Amount sent back by Player B</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Trustee is Male	-0.0509 (0.174)	-0.0539 (0.175)				
Trustee is Black	0.231 (0.222)	0.206 (0.221)	0.332 (0.285)	0.270 (0.290)	0.0884 (0.307)	0.0885 (0.307)
Trustee Receives Financial Aid	-0.120 (0.238)	-0.129 (0.242)	0.124 (0.289)	0.0281 (0.300)	-0.369 (0.466)	-0.369 (0.468)
Trustee is South African	0.0750 (0.251)	0.0701 (0.251)	0.320 (0.306)	0.393 (0.317)	-0.245 (0.328)	-0.244 (0.336)
Amount received by Trustee	0.0429*** (0.00462)	0.0441*** (0.00478)	0.0481*** (0.00609)	0.0542*** (0.00788)	0.0452*** (0.00599)	0.0452*** (0.00642)
Co-ethnic Pair	-0.205 (0.177)	-0.0560 (0.216)	-0.199 (0.211)	0.147 (0.301)	-0.172 (0.328)	-0.174 (0.358)
Same Home Language Pair	-0.0203 (0.234)	0.297 (0.250)	-0.244 (0.335)	0.295 (0.335)	0.150 (0.339)	0.142 (0.366)
Co-ethnic Pair X Same Home Language Pair		-0.557 (0.382)		-1.047* (0.586)		0.0142 (0.586)
Observations	96	96	53	53	43	43

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

Does accent matter?

(R14) Accent undermines the positive race effects

Turning now to the experimental evidence on speaking English as a first language and its implications for reciprocity, Table 4.13 displays the regression results when we factor in Player A's self-reported mother tongue, which we assume has some impact on accents. We need to concede that none of the results in this table are significant; nonetheless, the direction of the co-efficients is still revealing. For instance, the co-ethnicity co-efficient is now negative for both males and females. Amongst males, the return offers are even lower if Player A is a mother tongue English speaker. The opposite holds true for females: mother tongue English reverses the negative co-efficient. This result

is actually reminiscent of the Player A's behaviour (refer back to Table 4.7). In sum, males and females behave differently in co-ethnic pairs when Player A's are mother tongue English, albeit none of the co-efficients are statistically significant.

Table 4.13: Returns in Trust Game, Ethnicity & Mother Tongue

<i>Dependent variable: Amount sent back by Player B</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Trustee is Male	-0.0535 (0.171)	-0.0587 (0.171)				
Trustee is Black	0.203 (0.221)	0.252 (0.214)	0.414 (0.266)	0.341 (0.313)	-0.142 (0.324)	-0.0540 (0.300)
Trustee Receives Financial Aid	-0.109 (0.238)	-0.0747 (0.243)	0.112 (0.314)	0.0830 (0.316)	-0.266 (0.458)	-0.0950 (0.486)
Trustee is South African	0.0747 (0.251)	0.0488 (0.264)	0.292 (0.307)	0.316 (0.317)	-0.256 (0.315)	-0.385 (0.360)
Amount received by Trustee	0.0420*** (0.00465)	0.0422*** (0.00466)	0.0456*** (0.00610)	0.0457*** (0.00606)	0.0456*** (0.00626)	0.0475*** (0.00594)
Co-ethnic Pair	-0.190 (0.183)	-0.334 (0.347)	-0.254 (0.220)	-0.0812 (0.489)	-0.0151 (0.319)	-0.464 (0.471)
Proposer is Mother Tongue English	0.190 (0.191)	0.0694 (0.303)	0.0826 (0.253)	0.219 (0.443)	0.369 (0.304)	-0.0162 (0.420)
Co-ethnic Pair X Proposer is Mother Tongue English		0.204 (0.381)		-0.245 (0.591)		0.664 (0.502)
Observations	96	96	53	53	43	43

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported

(R15) Black females receive lower returns unless they are mother tongue English

Consistent with the sequence that was followed in the Trust section, here we also limit the sample to only Black partners. Again, this limitation is practiced to observe if speaking English as a mother tongue has any impact on reciprocity towards Black students. Columns 3 and 4 present the results for males. These findings are not remarkably different from the previous table when the whole sample was present, as return offers are even lower for Black and mother tongue English speaking Player A's. Females, on the other hand, show strong evidence for positive effects of an English

accent on reciprocity. On average, females return 66% higher amounts to mother tongue English proposers (Column 5). With the introduction of the interaction term, the racial identification also becomes salient—female Black Trustees reciprocate significantly higher amounts to proposers who are Black and mother tongue English speakers (Column 6). This result is consistent with the previous findings in the Trust section where females in Black co-ethnic pairs make significantly higher offers to mother tongue English partners. In sum, the return-offer analysis suggests that the impact of having a mother tongue English accent is bilateral for females in the Trust Game—they are trusted more and reciprocated to more than the mother tongue non-English speakers.

Table 4.14: Return Offers by Trustees in the Trust Game - Only Black Player A's

<i>Dependent variable: Amount sent back by Player B</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Trustee is Male	-0.144 (0.236)	-0.153 (0.235)				
Trustee is Black	-0.0934 (0.271)	-0.214 (0.396)	0.157 (0.327)	0.356 (0.474)	-0.361 (0.352)	-0.990* (0.569)
Trustee Receives Financial Aid	-0.0666 (0.380)	-0.00680 (0.390)	-0.153 (0.420)	-0.245 (0.433)	-0.00416 (0.799)	0.425 (0.864)
Trustee is South African	-0.0194 (0.351)	-0.0542 (0.372)	0.198 (0.415)	0.277 (0.449)	-0.190 (0.434)	-0.283 (0.496)
Amount received by Trustee	0.0409*** (0.00631)	0.0409*** (0.00626)	0.0498*** (0.0102)	0.0510*** (0.00960)	0.0402*** (0.0102)	0.0424*** (0.00938)
Proposer is Mother Tongue English	0.391* (0.219)	0.242 (0.314)	0.192 (0.311)	0.470 (0.426)	0.657** (0.285)	0.108 (0.402)
Trustee is Black X Proposer is Mother Tongue English		0.253 (0.423)		-0.449 (0.587)		1.129* (0.638)
Observations	61	61	33	33	28	28

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported. The sample size is only limited to Black Player A's and therefore there is a reduction in numbers.

As a robustness check, we also run similar regressions with the third party voice evaluations. The results, with regards to the effects of ethnolinguistic similarity, are parallel to the findings from Table 4.13 and 4.14, only without the statistical significance (see Table 4.15 and 4.16).

Table 4.15: Return Offers in Trust Game-Comparison between Self-Reported Language Skills and Third Party Evaluations

VARIABLES	Tobit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Males	Males	Males	Males	Females	Females	Females	Females
	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation
Trustee is Black	0.414 (0.266)	0.408 (0.263)	0.341 (0.313)	0.614* (0.333)	-0.142 (0.324)	0.0331 (0.290)	-0.0540 (0.300)	-0.0642 (0.335)
Trustee Receives Financial Aid	0.112 (0.314)	0.131 (0.303)	0.0830 (0.316)	0.166 (0.305)	-0.266 (0.458)	-0.360 (0.489)	-0.0950 (0.486)	-0.324 (0.488)
Trustee is South African	0.292 (0.307)	0.293 (0.307)	0.316 (0.317)	0.263 (0.305)	-0.256 (0.315)	-0.267 (0.340)	-0.385 (0.360)	-0.267 (0.346)
Amount received by Trustee	0.0456*** (0.00610)	0.0488*** (0.00641)	0.0457*** (0.00606)	0.0497*** (0.00616)	0.0456*** (0.00626)	0.0450*** (0.00567)	0.0475*** (0.00594)	0.0450*** (0.00575)
Co-ethnic Pair	-0.254 (0.220)	-0.292 (0.223)	-0.0812 (0.489)	-0.840 (0.479)	-0.0151 (0.319)	-0.141 (0.317)	-0.464 (0.471)	0.159 (0.608)
Proposer is First Language English	0.0826 (0.253)	0.255 (0.270)	0.219 (0.443)	0.668 (0.454)	0.369 (0.304)	-0.0673 (0.337)	-0.0162 (0.420)	-0.135 (0.384)
Co-ethnic Pair X Proposer is First Language English			-0.245 (0.591)	-0.740 (0.646)			0.664 (0.502)	0.390 (0.666)
Observations	53	53	53	53	43	43	43	43

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported

Table 4.16: Return Offers in Trust Game-Comparison between Self-Reported Language Skills and Third Party Evaluations-Only Black Player A's

VARIABLES	Tobit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Males	Males	Males	Males	Females	Females	Females	Females
	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation	Self-Report	Third Party Evaluation
Trustee is Black	0.157 (0.327)	0.125 (0.296)	0.356 (0.474)	-0.245 (0.401)	-0.361 (0.352)	-0.194 (0.386)	-0.990* (0.569)	-0.104 (0.451)
Trustee Receives Financial Aid	-0.153 (0.420)	-0.0885 (0.367)	-0.245 (0.433)	-0.0576 (0.383)	-0.00416 (0.799)	-0.344 (0.806)	0.425 (0.864)	-0.313 (0.826)
Trustee is South African	0.198 (0.415)	0.209 (0.401)	0.277 (0.449)	0.151 (0.393)	-0.190 (0.434)	-0.244 (0.534)	-0.283 (0.496)	-0.269 (0.564)
Amount received by Trustee	0.0498*** (0.0102)	0.0510*** (0.0103)	0.0510*** (0.00960)	0.0529*** (0.00914)	0.0402*** (0.0102)	0.0395*** (0.00919)	0.0424*** (0.00938)	0.0402*** (0.00918)
Proposer is First Language English	0.192 (0.311)	0.283 (0.334)	0.470 (0.426)	0.714 (0.533)	0.657** (0.285)	0.185 (0.362)	0.108 (0.402)	0.0908 (0.405)
Trustee is Black X Proposer is First Language English			-0.449 (0.587)	-0.783 (0.673)			1.129* (0.638)	0.984 (0.678)
Observations	33	33	33	33	28	28	28	28

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

(R16) Both males and females reciprocate more in mother tongue English pairings

The results presented thus far point towards a pattern of negative reciprocity for males in the same co-ethnic group, which gets strengthened if Player A is mother tongue English speaker, and positive return offers by female B's if their partner is MTE. The tobit model we have used so far cannot distinguish between a zero-offer, which can be interpreted as a lack of willingness to engage, and a continuum of offers. In order to examine if there are any differences between the decision to reciprocate and the amount sent back, we will utilize a probit model where the dependent variable takes a value of 1 if the trustee returned a positive amount, and zero otherwise. Table 4.16 presents the results of this exercise.

Firstly, being in a co-ethnic pairing lowers the chances of making a return offer—a result which is consistently significant for males. Once we add the interaction term for co-ethnicity and mother tongue English, it becomes clear that this combination lowers the chances of receiving return offers amongst males. There are no significant results of mother tongue English, on its own or in an interaction, for females. Out of curiosity, we change our specification in the last two columns in order to investigate the interaction between proposers' and trustees' language skills.⁴⁶ Interestingly, the negative co-efficient next to "Trustee is MTE" suggests that they make lower returns to non-mother tongue English speakers. This is reversed if mother tongue English trustees are paired with other MTE individuals: on average, they are significantly more likely to make return offers and this holds true for both men and women. In other words, accents reinforce trustworthiness for everyone.

⁴⁶ As a side note, we have reviewed the results of this interaction while examining trust; however, the results did not lead to any additional information (see Appendix).

Table 4.17: Examining Differences in the Decision by Trustees in the Trust Game to Make a Return from the Decision of How Much to Return

VARIABLES	Probit									
	Male					Female				
Trustee is Black	0.225** (0.111)	0.234** (0.115)	0.215 (0.144)	0.221* (0.114)	-0.177 (0.137)	-0.101 (0.118)	-0.102 (0.122)	-0.0828 (0.116)	-0.167 (0.130)	-0.726** (0.305)
Trustee Receives Financial Aid	0.231* (0.127)	0.242* (0.125)	0.240* (0.124)	0.182 (0.126)	0.157 (0.101)	-0.0977 (0.131)	-0.0553 (0.131)	-0.0421 (0.135)	0.000571 (0.128)	0.105 (0.126)
Amount received by Trustee	0.0120*** (0.00263)	0.0117*** (0.00275)	0.0116*** (0.00278)	0.0132*** (0.00290)	0.0178*** (0.00409)	0.0149*** (0.00413)	0.0137*** (0.00356)	0.0138*** (0.00359)	0.0134*** (0.00395)	0.0120*** (0.00242)
Co-ethnic Pair	-0.234** (0.105)	-0.257** (0.119)	-0.224 (0.180)	-0.274** (0.131)	-0.693*** (0.190)	-0.00338 (0.101)	0.0138 (0.0987)	-0.0368 (0.173)	-0.0118 (0.0984)	-0.534** (0.263)
Proposer is MTE		0.0629 (0.0899)	0.0934 (0.155)	0.0653 (0.0901)	0.283*** (0.0887)		0.110 (0.0890)	0.0683 (0.147)	0.113 (0.0834)	0.466*** (0.165)
Co-ethnic Pair X Proposer is MTE			-0.0546 (0.222)	-	-			0.0762 (0.192)	-	-
Trustee is MTE				-0.119 (0.100)	-0.247** (0.102)				-0.161 (0.103)	-0.210 (0.132)
Trustee is MTE X Proposer is MTE					0.743*** (0.192)					0.929** (0.403)
Observations	53	53	53	53	53	37	37	37	37	37

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for probit model. In the probit regression, the dependent variable takes a value of 1 if the trustee returned a positive amount, and zero otherwise. The sample size for females decreases to 37 from 43 because the citizenship variable predicts success perfectly and therefore 6 observations could not be used in the probit model.

Additional controls for age, age squared of proposer, financial aid and South African citizenship is included but not reported.

The preceding chapter has presented the experimental results from the Trust Game that suggests English accent matters in a positive way, both for trust and trustworthiness, and especially for Black participants. The key findings can be summarised as follows:

- Women are less trusting on average. Being paired with a co-ethnic partner reduces the offers by women but not for men.
- Mother tongue English accent mediates the effect of being paired with a co-ethnic partner, especially for women. Amongst men, accent enhances homogeneity and thus trust.
- When we focus only on Black Player B's, we find divergent behaviour along the race line. Black Player A's regard Black subjects who have an English accent as more trustworthy whereas White Player A's consider them as less trustworthy.
- Third party assessment results for English follow the self-reported mother tongue English outcomes closely.
- Reciprocity is lower in co-ethnic pairs, especially for males. This is surprising since male Player A's made the higher offers to co-ethnic partners. Amongst females, the return-offers suggest that mother tongue English subjects are trusted more and reciprocated to more than the mother tongue non-English speakers.
- Probit results show that a mother-tongue English accent reinforces trustworthiness for all parties. That being said, the key factor that affects reciprocity significantly and consistently is the initial amount sent by Player A's.

Accordingly, we may speculate that the high labour market returns to English may partly reflect higher trust and trustworthiness levels being attached to mother tongue English speakers. However, it is still not clear why this positive association should exist. One possibility is that mother tongue English is associated with a whole host of positive attributes, such as confidence or alertness, and these, in turn, are correlated with perceptions of trustworthiness. In order to see if there is a connection with the way people sound and these perceived positive attributes, the next chapter makes use of 3rd party evaluations.

V. Attitudes towards Race, Language & Trust

The results of the Trust Game in the previous chapter suggest that individuals exhibit higher trust towards partners with mother tongue English accent. Put alternatively, individuals are regarded as more trustworthy if they are mother tongue English. These results, however, do not shed any light upon the reasons *why* this may be the case. Our main goal here is to unpack this question and check whether individuals with a first language English accent are considered as more trustworthy together with other positive behavioural attributes. For instance, are people who are perceived as native English speakers not only perceived as trustworthy, but also as more confident compared to non-mother tongue English speakers? And, do we observe any correlation between positive behavioural and personal attributes and accents?

In order to answer these questions, the second phase of the research brought together a panel of evaluators who offered their objective views on the photos and voice clips of the Trust Game participants. In particular, the third party evaluators assessed the participants on a number of key behavioural traits, such as trustworthiness, confidence and social class (a sample of these questions and the scale is shown in Figure 5.1).^{47 48} These evaluations also included questions on the participants' linguistic background, such as if they sound like a first language English speaker. This approach fits well with the previous experimental design since the participants did not receive any information on the linguistic background but they could draw inferences based on the voice clips. That being said, the second phase of the experiment is fundamentally different because the evaluators do not interact with the candidates that they are assessing. The rationale behind this approach is to evaluate the differences

⁴⁷ We follow Rodin and Ozcan's [2011] framework for attribute categorization.

⁴⁸ While most of the ratings were done on a scale from 1 to 10, the social class variable used a range between 1 (low class) to 5 (upper class).

between the experimental results from a strategic setting and independent assessments from individuals who don't have anything at stake.

By gathering these independent evaluations, we are now able to perform a regression analysis between the third party rankings of a number of attributes and their assessment of whether an individual is mother tongue English speaking or not. More specifically, is it the case that individuals who are assessed as mother tongue English speakers are also assessed as being more confident, friendly, and attractive?

Figure 5.1: A Sample Screen and Subset of the Attribute Questions Used in the Evaluation Experiment

Please answer the following questions on a scale from 1-10, with 1 being the very least and 10 being the maximum possible.

	Not at all	2	3	4	5	6	7	8	9	Completely
How trustworthy is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How trusting is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How confident is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How friendly is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How timid is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How alert is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The mean scores of the third party evaluators by race and gender are displayed in Table 5.1 below.⁴⁹

When we analyse the data across genders, a very strong pattern emerges: female evaluators give significantly higher scores to female candidates on various positive attributes. For instance Black females received substantially higher scores on both “trustworthy” and “trusting” than their male counterparts.⁵⁰ A meta-analysis conducted by Jackson, Hunter, and Hodge [1995] and Wilson and Eckel [2006] find similar results—females give significantly higher scores than males in individual differences evaluations.

What do the evaluation scores say about trust and trustworthiness? The trustworthy scores for both male and female White candidates are significantly higher than the Black counterparts.⁵¹ That is, the score for White males is 6.49 compared with 5.9 for Black males. The difference between female trustworthy scores is smaller, 6.92 vs. 6.64, yet statistically significant. Similarly, assessments of whether a subject is trusting are also significantly higher for White candidates, but this time only for males.⁵² We also encounter racial differences when we look at other positive attributes, such as confidence. The evaluation scores reveal that the confidence rating of White males is systematically higher than of those Black counterparts.⁵³ The social class variable is also significantly higher for both male and female White candidates.⁵⁴ It appears that when subjects use the information available to them to draw inferences about other individuals, there is a “White” premium on positive attributes, most notably for males. As a

⁴⁹ An average score was calculated for each trait by adding up the six different score from evaluators and taking the average.

⁵⁰ Black Female-Black Male: (Mann-Whitney, $z = 4.748$, $p\text{-value} = 0.0000$); Black Female-Black Male (Mann-Whitney, $z = 4.009$, $p\text{-value} = 0.0001$).

⁵¹ White Male-Black Male: (Mann-Whitney, $z = 3.176$, $p\text{-value} = 0.0015$); White Female-Black Female (Mann-Whitney, $z = 2.418$, $p\text{-value} = 0.0156$).

⁵² White Male-Black Male: (Mann-Whitney, $z = 2.291$, $p\text{-value} = 0.0220$).

⁵³ White Male-Black Male: (Mann-Whitney, $z = 3.417$, $p\text{-value} = 0.0006$).

⁵⁴ White Male-Black Male: (Mann-Whitney, $z = 8.442$, $p\text{-value} = 0.0000$); White Female-Black Female (Mann-Whitney, $z = 6.242$, $p\text{-value} = 0.0000$).

final note, it does not come across as a surprising result that White subjects are more likely to be assessed as first language English speakers.

Table 5.1: Summary Statistics of Third Party Evaluations, Conditioned on Gender and Race

On a scale of 1-10...	(1) White Males	(2) Black Males	(3) White Females	(4) Black Females
<i>Degree of person's looks</i>	5.90***	4.72	5.83	5.52
<i>How trustworthy is this person?</i>	6.49***	5.91	6.92**	6.64
<i>How trusting is this person?</i>	6.19**	5.80	6.28	6.38
<i>How confident is this person?</i>	6.67***	6.06	6.55	6.59
<i>How friendly is this person?</i>	6.34	6.12	6.91	6.77
<i>How timid is this person?</i>	4.31	4.64	4.46	4.30
<i>How alert is this person?</i>	6.39	5.88	6.77	6.30
<i>Social class (scale 1-5)</i>	3.79***	2.59	3.59***	2.83
<i>South African</i>	0.94	0.88	0.92*	0.78
<i>First-language English</i>	0.96***	0.35	0.97***	0.49
N	52	78	39	93

Note: Stars denote statistically significant differences between White & Black males (columns 1&2) and White & Black females (columns 3&4). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5.2 below presents the summary statistics of the behavioural attributes vis-à-vis language evaluations. Specifically, in column (1) we report summary statistics for the whole sample, in columns (2) and (3) we distinguish between candidates who were assessed as mother tongue English and mother tongue non-English, and in column (4) we report mean difference between these two categories, with

associated standard errors. For example, the mean score for confidence hovers around 6.4 for the whole sample. In the language subgroups, however, mother tongue English speakers score an average of 6.8 compared to 5.8 by the non-mother tongue English candidates. The last column shows that this one point difference is statistically significant at the 1% level. Overall, the table strongly suggests that individuals who have been assessed as mother tongue English speakers are also assessed more positively on behavioural scores, on average. In particular, individuals who have been assessed as mother tongue English also have significantly higher score in important features such as looks, trustworthiness, trusting, confidence, friendliness, alertness and social class.⁵⁵ The only time we observe a higher score for the mother tongue non-English speakers is timidity—a trait that can be considered as a negative characteristic. Clearly, the confounding effect here is that both White subjects and mother tongue English subjects were assessed more positively than their counterparts. To delve into this further and isolate the language effect, we use regression analysis.

⁵⁵ All differences are statistically significant at 1% level, except the variable “trusting” which is still significant at 10% level.

Table 5.2: Summary Statistics of Third Party Evaluations, Conditioned on Being Voted as a First Language English Speaker

On a scale of 1-10...	(1) Full Sample	(2) Mother tongue English	(3) Mother tongue non- English	(4) Mean Difference
<i>Degree of person's looks</i>	5.403	5.750	4.851	0.899*** (0.137)
<i>How trustworthy is this person?</i>	6.433	6.604	6.161	0.444*** (0.111)
<i>How trusting is this person?</i>	6.158	6.254	6.005	0.249* (0.107)
<i>How confident is this person?</i>	6.442	6.829	5.825	1.004*** (0.126)
<i>How friendly is this person?</i>	6.511	6.695	6.218	0.477*** (0.119)
<i>How timid is this person?</i>	4.428	4.107	4.940	-0.833*** (0.140)
<i>How alert is this person?</i>	6.265	6.560	5.793	0.768*** (0.113)
<i>Social class (scale 1-5)</i>	3.063	3.455	2.438	1.016*** (0.072)
N	262	161	101	262

In the regression analysis, we proceed in the following two steps. First, we create a dummy variable for each of the behavioural traits (as listed in Table 5.1), which equals one if the assessed score is greater than five.⁵⁶ Secondly, we use these dummy variables as regressands in a probit model and estimate the association between speaking English as a first language and the outcome.⁵⁷ The tables below report marginal effects from the co-efficient “Voted MTE”. While the first column shows the pure correlation effect between the specified characteristics and being assessed as an English speaker by a third party evaluator, the second column reports the results with additional controls. These controls include age, age squared, race, and a dummy indicating if the evaluators know the subjects.

⁵⁶ The dummy variable would equal 1 if the score is greater than three, for the case of social class.

⁵⁷ Results are robust when using logit as well as conventional linear probability models.

Table 5.3 shows the results of this exercise. For example, an individual assessed as mother tongue English by third party evaluators is 21% more likely to receive a high score when assessed on looks compared to an individual who is not assessed as mother tongue English. The first item listed under characteristics, self-reported MTE, exhibits the positive and significant correlation between being assessed as an English speaker and self-reported mother tongue English. Recall that correlation analysis shows that 83% of the self-reported MTE speakers were also rated as first-language English speakers by the third party voice evaluators. The correlation here, with or without the additional controls, serves to confirm that it is very likely for the self-reported English speakers to be voted as mother-tongue English.

The rest of the characteristics report the probabilities of receiving a score higher than five, first for the whole sample and then by each gender group. Two points from this table are of note. First, the regression analysis confirms the findings from summary statistics: subjects who are assessed as mother-tongue English speakers are more likely to be associated with positive behavioural characteristics. For instance, an individual who was assessed as mother tongue English by a third party evaluator is 17% more likely to be assessed as a confident person, *ceteris paribus*. Second, trustworthiness is significantly correlated with also being assessed as an English speaker for the sample as a whole, and especially for male subjects. This positive association is important as it shows that even independent third party evaluators appear to hold a positive association between trustworthiness and English accent. Thus, it seems plausible that the reason why mother-tongue English speakers are offered higher amounts in the Trust Game by Player A's is at least due to the fact that they are indeed assessed as more trustworthy. In effect, the general results from Table 5.3 suggest that being assessed as a first language English speaker is *highly* correlated not only with trustworthiness, but also with other positive attributes.

Table 5.3: Predicted Probabilities of Behavioural Characteristics Conditioned on Mother Tongue English

Characteristics	Voted MTE	Voted MTE (with additional controls)	Characteristics	Voted MTE	Voted MTE (with additional controls)
Self-Reported MTE:			Friendly:		
All	0.377*** (0.026)	0.174*** (0.032)	All	0.122*** (0.024)	0.135*** (0.026)
Male	0.416*** (0.030)	0.159*** (0.046)	Male	0.142*** (0.034)	0.169*** (0.043)
Female	0.337*** (0.043)	0.173*** (0.045)	Female	0.095*** (0.031)	0.108*** (0.032)
Looks:			Timid:		
All	0.238*** (0.026)	0.212*** (0.029)	All	-0.147*** (0.026)	-0.177*** (0.027)
Male	0.253*** (0.033)	0.166*** (0.037)	Male	-0.159*** (0.036)	-0.171*** (0.042)
Female	0.218*** (0.039)	0.234*** (0.04)	Female	-0.132*** (0.037)	-0.170*** (0.036)
Trustworthiness:			Alert:		
All	0.104*** (0.024)	0.073** (0.025)	All	0.144*** (0.023)	0.149*** (0.027)
Male	0.142*** (0.036)	0.092* (0.038)	Male	0.125*** (0.036)	0.105* (0.045)
Female	0.059** (0.029)	0.046 (0.032)	Female	0.158*** (0.029)	0.176*** (0.033)
Trusting:			Social Class:		
All	0.072*** (0.028)	0.057 (0.031)	All	0.331*** (0.022)	0.232*** (0.027)
Male	0.073* (0.041)	0.036 (0.048)	Male	0.386*** (0.025)	0.234*** (0.039)
Female	0.064* (0.036)	0.072 (0.039)	Female	0.272*** (0.034)	0.224*** (0.037)
Confidence:					
All	0.153*** (0.027)	0.174*** (0.029)			
Male	0.166*** (0.038)	0.161*** (0.048)			
Female	0.135*** (0.037)	0.174*** (0.036)			
N (All):	1524	N (Male):	754	N (Female):	770

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for probit model. Additional controls include gender (for all), race, age, age squared, and a binary variable indicating if the evaluator knows the subject.

An example of the estimation model would be as such: (1) Pr(confident)= f(Voted MTE) ; (2) Pr(confident)=f(Voted MTE, age, age*age, race, know).

Table 5.4 presents similar estimates for Black and White subjects respectively. The positive and significant results on the left hand side of the table suggest that the correlation between English accent and positive attributes is stronger for Black participants. On average, both female and male Black subjects are evaluated as more confident, friendly, alert, and perceived to be in a higher social class if they have also been assessed as first language English speakers whilst the co-efficient on timidity significantly loses magnitude. For Black males, trustworthiness is also highly associated with an English accent. Thus, we find a close link between positive attributes and mother tongue English that is particularly predominant for Black individuals.

Table 5.4: Predicted Probabilities of Behavioural Characteristics Conditioned on Mother Tongue English

Characteristics	Black		White		Characteristics	Black		White	
	Voted MTE	Voted MTE with add. controls	Voted MTE	Voted MTE with add. controls		Voted MTE	Voted MTE with add. controls	Voted MTE	Voted MTE with add. controls
Self-Reported MTE:					Friendly:				
All	0.234*** (0.045)	0.229*** (0.045)			All	0.159*** (0.031)	0.142*** (0.032)	0.106** (0.050)	0.111** (0.051)
Male	0.190*** (0.066)	0.191*** (0.064)			Male	0.197*** (0.053)	0.193*** (0.053)	0.111 (0.080)	0.108 (0.080)
Female	0.257*** (0.060)	0.242*** (0.060)			Female	0.101*** (0.039)	0.103*** (0.038)	0.114* (0.061)	0.117** (0.056)
Looks:					Timid:				
All	0.252*** (0.032)	0.239*** (0.031)	0.087 (0.057)	0.074 (0.057)	All	-0.209*** (0.033)	-0.198*** (0.034)	-0.090* (0.048)	-0.095* (0.049)
Male	0.222*** (0.041)	0.216*** (0.040)	0.014 (0.086)	0.003 (0.089)	Male	-0.203*** (0.053)	-0.200*** (0.053)	-0.105 (0.070)	-0.109 (0.071)
Female	0.246*** (0.046)	0.251*** (0.044)	0.148** (0.075)	0.251*** (0.044)	Female	-0.196*** (0.043)	-0.194*** (0.043)	-0.073 (0.065)	-0.076 (0.070)
Trustworthiness:					Alert:				
All	0.085*** (0.030)	0.063** (0.030)	0.064 (0.049)	0.074 (0.048)	All	0.173*** (0.031)	0.172*** (0.031)	0.068 (0.060)	0.065 (0.060)
Male	0.151*** (0.052)	0.142*** (0.052)	-0.037 (0.070)	-0.015 (0.067)	Male	0.129** (0.054)	0.130** (0.054)	0.034 (0.091)	0.022 (0.087)
Female	0.009 (0.035)	0.011 (0.035)	0.145** (0.062)	0.146** (0.062)	Female	0.189*** (0.035)	0.198*** (0.037)	0.103 (0.081)	0.102 (0.081)
Trusting:					Social Class:				
All	0.071** (0.035)	0.047 (0.034)	0.063 (0.066)	0.066 (0.067)	All	0.217*** (0.026)	0.216*** (0.027)	0.209*** (0.070)	0.188*** (0.067)
Male	0.062 (0.058)	-0.028 (0.093)	0.053 (0.057)	-0.023 (0.093)	Male	0.239*** (0.038)	0.231*** (0.036)	0.163* (0.094)	0.154 (0.095)
Female	0.048 (0.042)	0.048 (0.042)	0.146 (0.094)	0.146 (0.093)	Female	0.199*** (0.038)	0.207*** (0.038)	0.233** (0.094)	0.247** (0.100)
Confidence:									
All	0.212*** (0.035)	0.198*** (0.036)	0.082 (0.054)	0.081 (0.053)					
Male	0.212*** (0.059)	0.199*** (0.060)	0.062 (0.091)	0.059 (0.090)					
Female	0.189*** (0.043)	0.193*** (0.044)	0.099 (0.064)	0.108 (0.066)					
Observations	982		542		Observations	982		542	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Marginal effects are reported for probit model. Additional controls include gender (for all), race, age, age squared, and a variable indicating if the evaluator knows the subject.

Finally, we focus on the trustworthiness score as it is essential for the decision to transfer any money in the Trust Game. In the previous tables, we found that the trustworthiness score was significantly correlated with assessed mother tongue English, especially for men. As opposed to relatively more observable/discernible traits such as attractive looks or confidence, this characteristic is rather abstract. It goes to say that the likelihood of being assessed as trustworthy may be linked to the observer's assessments of visible attributes such as attractiveness, as well as audial cues that allow assessments of confidence and friendliness. In order to see if trustworthiness can be predicted by personal attributes, we run a final probit regression where we build up the specifications gradually and report the results in Table 5.5 below.

The first specification shows that there is a positive correlation between being assessed as speaking English as a mother tongue and trustworthiness. That is, chances of being voted as a trustworthy individual go up by 10 per cent if the person is also assessed as an English speaker. This correlation remains positive and significant with the inclusion of controls for confidence and looks, but disappears once controls for friendliness, alertness, and social class are included. This exploratory analysis suggests that there may be complex interplay between how a person sounds, their accents in particular, and the kinds of behavioural characteristics that are attributed to them. In the absence of psychometric data on behavioural attributes, it seems plausible that accents may play some sort of mediating role.

Table 5.5: Trustworthiness Scores as Predictions by Positive Attributes

VARIABLES	Probit					
	(1)	(2)	(3)	(4)	(5)	(6)
	All	All	All	All	All	All
	Trustworthy	Trustworthy	Trustworthy	Trustworthy	Trustworthy	Trustworthy
Voted MTE	0.104*** (0.024)	0.060** (0.024)	0.040* (0.024)	0.018 (0.021)	0.011 (0.021)	0.000 (0.021)
Looks		0.174*** (0.021)	0.138*** (0.021)	0.095*** (0.019)	0.090*** (0.019)	0.084*** (0.019)
Confident			0.165*** (0.021)	0.064*** (0.021)	0.041* (0.022)	0.039* (0.022)
Friendly				0.293*** (0.017)	0.270*** (0.017)	0.270*** (0.017)
Alert					0.090*** (0.021)	0.086*** (0.021)
Social Class						0.037* (0.022)
Male (Voted MTE)	0.142***	0.085**	0.062*	0.036	0.032	0.013
Female (Voted MTE)	0.059**	0.030	0.014	-0.004	-0.013	-0.019
N (All):	1,524	N (Male):	754	N(Female):	770	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Marginal effects are reported for probit model. In the interest of parsimony, only the co-efficient on Voted MTE is reported for males and females.

VI. Discussion and Conclusion

This thesis has sought to contribute towards the empirical and experimental developments in the study of discrimination and the economics of language. In the experimental part of this thesis, we set out to test if a mother tongue English accent creates more trust in a strategic setting by reducing social distance. The experimental design utilises a Trust Game, which more or less simulates a labour market where asymmetric information and contractual incompleteness leads people to make strategic decisions on whether to trust a stranger or not. Using an experimental Trust Game to analyse the impact of English on behavioural interactions among a sample of South African undergraduate students, the results suggest that:

- Men and women behave differently—females are significantly less trusting compared to men. While males display favouritism towards co-ethnic partners, the opposite holds true for women.
- Females favour co-ethnic partners only if they speak English as a mother tongue. This is especially true for Black women.
- Black Player A's regard Black subjects who have an English accent as more trustworthy whereas White Player A's consider them as less trustworthy.
- Race and language do not affect reciprocity as starkly as they affect trust—it is mostly the initial amount sent that matters for return amounts.

One of the first results that we found speaks to the gender differences in trusting behaviour. Homogeneity in characteristics appears to enhance trusting behaviour for men while the opposite holds true for women. Croson and Gneezy [2009] conjecture that the gender differences in experimental games is mostly caused by greater responsiveness of women to the conditions of the experiment. To put it another way, it may not necessarily be the case that women are less trusting but that their choices are more context-dependent than that of men.

The trust analysis points to favouritism towards co-ethnic partners for males, irrespective of mother tongue English accent. For females however, results indicate that accent mediates effects of being paired with a co-ethnic partner. When we divide the sample further and only look at Black Player B's, we see mother tongue English carries a different implication for White and Black students. More specifically, we find that Whites send relatively lower amounts to Black mother-tongue English speakers while Black students send significantly higher amounts.

We explain the behaviour of White students from the "continuum model of impression formation" theory in social psychology by Neuberg and Fiske [1987]. The idea here is that relatively automatic first impressions anchor subsequent thinking. According to this theory, people engage in a continuum of processes ranging from the most automatic, stereotype based approach (relying on race, gender, class, etc.) to the most deliberate impression formation that is based on attributes [Fiske and Neuberg, 1990]. For example, when a woman is walking by herself at night and sees a man approaching her, she might first feel threatened. If then she realizes that he is wearing a doctor's coat, she might change her perception quite quickly from feeling threatened to relief. Applying this to our results, when White students first see a Black student, they may send greater amounts out of pure altruism based on a stereotype of lower socio-economic status. Burns [2006] find similar results in her Trust Game study in South Africa where White students send significantly higher amounts to non-Whites despite lower expected returns from this race group. However, in our study, we speculate that White students' perceptions change when they hear a mother tongue English accent as they realise that the Black partner does not fit the stereotype that they might have created in the first place.

On the other hand, Black students are behaving in an opposite manner when they are paired with co-ethnic and mother tongue English speaking partners. We speculate that this is a systematic pattern of high-status vs. low-status language legacy that still reverberates today. More specifically,

for reasons connected with colonial history, English has widespread use in high-status domains of politics, media and, education. Barkhuizen & Gough [1996] assert that during the apartheid era, colonial languages such as English were endorsed with a perception of 'power' by being sanctioned as the sole means to education and societal mobility. The other side of the coin is that African languages were given a 'lower-status' as they were merely categorized as a method of interaction within 'native' communities. It can be argued that this fragmentation along high-status/low-status language manifests itself in the Trust Game when Black students trust their co-ethnic partners more if they have a mother-tongue English accent.

In terms of reciprocity, we find that race and language does not affect the decisions; subjects reciprocate based on how they have been treated in terms of offers made. In other words, language may be more important in allowing people to make assumptions about trustworthiness, but less important in decisions of reciprocal behaviour.

Finally, the third party evaluations demonstrate the positive correlation between trustworthiness and positive attributes. What is particularly interesting is the fact that the positive correlation is stronger for Black subjects. For instance, there is a positive and significant correlation between being assessed as confident and friendly while being also assessed as a mother tongue English speaker. While we cannot say much about the causality here (i.e.: are English speakers more likely to be assessed as confident, or are confident people more likely to be assessed as mother tongue English speakers), to the extent that employers might make these similar positive associations between mother tongue English and unobservable behavioural traits, this could affect the language acquisition choices of employees, especially Black South Africans.

A growing body of literature suggest that language has been playing an increasingly important role in labour market outcomes. An interesting quality about language is that, unlike ascriptive

characteristics like race, individuals can exercise some choice over it if they believe that there are higher returns to the economically dominant language. For instance, if employers infer a positive quality when they hear a native accent in the dominant language, then the employees might choose to invest in that language. For employees who do not have a chance to invest in the dominant language skill, this could cause horizontal (labour market entrance) and vertical (differential wages) discrepancies.

This is a particularly important challenge for any country trying to promote multilingualism in an increasingly globalised world. In South Africa, the constitution promotes multilingualism and asserts that all eleven official languages must enjoy “parity of esteem” and be treated equitably (Constitution of the Republic of South Africa, 1996, Section 6(1)). The reality, however, is that English remains as the dominant language in the domains of commerce, education, government and public services [Deumert et al., 2005]. Numerous studies from South Africa point to increasing returns to speaking English for the non-White population. This has important consequences in the labour market: if the private actors are aware of these higher returns and the labour market continues to reward these traits, this dynamic would make it difficult to achieve the multilingual setting envisaged in the constitution.

Certainly, it would be unrealistic to expect a sudden recovery from centuries long of disempowering and segregationist policymaking and the scars of the colonial conquest and apartheid cannot be wished away. However, if the multilingualism policies are not revisited and revised as quickly as possible, Alexander warns: “[t]here is a real danger that a language faultline will displace the racial faultline [in post-apartheid South Africa] ... to demarcate an unbridgeable gulf between those who are ‘in’ and those who are ‘out’” [Alexander, 2004]. If the overarching goal is to achieve a democratic regime enjoyed by all South Africans and a vigorous market that is competitive in the world market, then the language question should be given the imminent priority.

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Appendix

Part A: Experimental Set-Up

Table A-1: Example of Sign-Up Sheet

Sign-Up Sheet

Thank you very much for your voluntary participation in these decision tasks. Please take the time to complete the questions below. Bear in mind that there are no correct responses - should you prefer not to respond to a given question, simply leave it out and move on. However, please understand that the more fully you complete the questionnaire, the better the quality of data available to the researchers. All responses will be kept confidential.

*** Required**

Student Number *

Gender *

Female

Male

Which faculty are you registered in?

Age in years today
Citizenship *

South African

Foreign

If foreign, which country are you from?

Race *

African

Coloured

Indian

White

Other

Are you a first language English speaker? *

Yes

No

What is the main language that you speak at home with your family? *

Do you have a part-time job or do you do any activity to earn money for yourself?

- Yes
- No

Do you receive financial aid from UCT for your studies? (do not include merit awards)

- Yes
- No

Which best describes your family's financial status

- Rich
- Upper Income
- Middle Income
- Low Income
- Poor

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Table A-2: Example of Player A Decision Task

TASK

- Your reference number is: 1A
- This is **a new decision-making task**. Please **read the instructions carefully**, as it may differ from any previous decision-tasks you might have participated in.
- In this decision-making task, you are Player A. You are paired with another person, Player B. Your position as Player A was randomly assigned.
- In this task, you have been given R50. Player B has also been given R50.
- You now have the chance to decide if you want to send any of your R50 to Player B. You can choose to send any amount of the R50 to Player B, starting from R0 up to R50. Any amount you send must be in multiples of R1.
- Any amount that you decide to send to Player B will be taken away from the R50 you have been given.
- Any money you send to Player B will be doubled before it is given to Player B.
- Once Player B receives this money that has been doubled, Player B will be asked to decide if they want to send any money back to you.
- Any money that is sent back to you by Player B will not be doubled. You will get whatever amount Player B decides to send back to you.
- This task will be completed online. There will be **2 steps**:
 - i You will be directed to a video player website (Vimeo) where you will get to see and hear Player B. You can only make a decision once you see and hear Player B. Please note that Vimeo's views counter will be checked in order to confirm that you have actually watched the clip. If you had not watched the video completely, then you will be disqualified from the study and you will not receive any money.

Now please follow this link to see and hear Player B. The **password** to see the video is **5035**. Please make sure that the volume is turned on.

<https://vimeo.com/42580718>

ii You can only move on to second step once you have watched the video. If you have done so, then please click on the following link in order to complete your task:

<https://docs.google.com/spreadsheet/viewform?formkey=dGpMaHJoalR2QTVzYzNPeGxIVU5kWkE6MQ>

- As soon as your decision has been received, Player B will be notified via e-mail. Player B will be given the same information as you have received about the details of the task (i.e. they will know that you also received R50, and that any amount you've decided to send has been doubled).
- As soon as Player B submits his/her decision, we will notify you of the outcome of this decision-making task. (Please be patient as it may take a few days for Player B to respond).
- Any decision you make will be private. There are no tricks in this experiment. Everything is exactly as it has been described to you.

Thank you for your participation.

Table A-3: Player B's Return Decision on Google Docs

Decision-Making Tasks B

Please answer the questions below in order to complete the task assigned to you. All responses will be kept confidential.

* Required

Please enter your reference number here *

Please enter your student number here *

Please confirm that you have watched Player A's clip *
Vimeo's views counter will be checked in order to confirm that you have actually watched the clip

Yes

Please record how much money, if any, you want to send to Player A. *
Below, please record the amount that you would like to send to Player A. You may return any amount, from R0 up to the maximum amount of monies you have in this allocated task, as long as it is in multiples of R1.

Do you know the person in the clip? *

Yes
 No

I will send R_____ to Player A. *
Please fill in the blanks to confirm that you understand the conditions

I understand that the amount I am sending will be not be doubled by the experimenter, so that Player A will receive R_____. *
Please fill in the blanks to confirm that you understand the conditions

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Table A-4: Example of Assessment Questions for the Third Party Evaluators

Decision Task 6M

* Required

Assessment 1

What is the title of the video *
 You can find this information right below the play screen ie: 348A

On a scale from 1-10, to what degree do you think this person's looks corresponded to the generally accepted view of attractive looks?

1 2 3 4 5 6 7 8 9 10

Not attractive Very attractive

Please answer the following questions on a scale from 1-10, with 1 being the very least and 10 being the maximum possible.

	Not at all	2	3	4	5	6	7	8	9	Completely
How trustworthy is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How trusting is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How confident is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How friendly is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How timid is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How alert is this person ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Low class	Lower-middle class	Middle class	Upper-middle class	Upper class
The candidate is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Is this person South African?

- Yes
- No

Does this person sound like a first-language English speaker? *


- Yes
- No

Does this person speak English as a main language at home with his/her parents?

- Yes
- No

Do you know this person? *

- Yes
- No


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Table A-5: Example of Participant Announcements

Thank you for signing up to participate in the research being conducted by RUBEN.

Please note that:

- Over the course of the next few weeks, you will be contacted via e-mail and offered one or more opportunities to participate in various decision-making tasks. Some of these tasks will be done online, and should not take more than 10 minutes of your time for any given task.
- For some of the tasks, you will need to book an appointment and show up at the Leslie Social building over the next two weeks for a 2-minute pre-study task. You will receive show-up fees for these tasks. We will send you further instructions if you are assigned into this group.
- It is crucial that you check your e-mail regularly, and ensure that your mailbox is not over quota.
- You are under no obligation to participate. Participation is voluntary, and you may choose not to participate by simply not responding to the opportunity. However, if you do choose to participate, your response will be taken to signal your consent to voluntarily participate in the task at hand.
- All research tasks have been approved by the Ethics Committee in the Faculty of Commerce at UCT. The research is being funded by a grant from the National Research Foundation (NRF).
- You will have the opportunity to earn money based on the decisions you make during these tasks. Payments will vary, based on the nature of the task, as well as the number of tasks completed.
- A record will be kept of any monies that accrue to you over the next few weeks. Once you have completed the task/s assigned to you, you will be notified to come and collect your payment.
- Payments will be made through the Cashiers Office in Kramer Building on Middle Campus. In order to collect your payment, you will need to present a valid student ID card. However, you will not be able to claim payment until we notify you that your monies are available. This is in order to prevent fraud.
- We ask that you check your UCT e-mail account regularly (once a day) to ensure that we are able to complete the research timeously and to ensure that we can pay you as soon as possible. In some tasks, you will be paired with another person, so we ask you to be patient as it may take a day or two to collect the relevant data from both parties (but again, if you check e-mail regularly, things will go faster).

If you have any queries about this research, please e-mail decisiontasks2012@gmail.com

IF YOU WOULD LIKE TO PROCEED

Having read this information about the way the research will be carried out, we now ask you to complete the attached questionnaire. It is relatively short and will take approximately 5 of your time.

As soon as we receive your completed questionnaire, we will e-mail you your first task.

Your participation is greatly appreciated!

Figure A-5: Vimeo Example

The screenshot shows a Vimeo video player interface. At the top, the Vimeo logo and navigation menu are visible. The video player itself shows a woman in a pink shirt. Below the video, the user profile '190B' is shown with a smiley face icon, and the video is identified as being from 'rubenadmin' 1 year ago, uploaded via iMovie. The video has 11 plays, 0 likes, and 0 comments. A stats panel is open, displaying a weekly play count graph for the period from Sunday, May 27, 2012, to Sunday, June 3, 2012. The graph shows a single data point of 1 play on May 27. To the right of the graph is a table with columns for 'Plays', 'Likes', and 'Comments' for each day in the week.

	Plays	Likes	Comments
Sun Jun 3, 2012	0	0	0
Sat Jun 2, 2012	0	0	0
Fri Jun 1, 2012	0	0	0
Thu May 31, 2012	0	0	0
Wed May 30, 2012	0	0	0
Tue May 29, 2012	0	0	0
Mon May 28, 2012	0	0	0
Sun May 27, 2012	1	0	0
Weekly Totals	1	0	0

Part B: Additional Results

Mother tongue English Interactions

Table B-1: Offers in Trust Game & Mother Language with Interaction

Dependent variable: Amount sent by Player A

VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Proposer is Male	0.230** (0.114)	0.225** (0.112)				
Proposer is Black	0.301** (0.148)	0.312** (0.152)	0.169 (0.214)	0.184 (0.211)	0.692*** (0.177)	0.707*** (0.187)
Proposer Receives Financial Aid	-0.376*** (0.140)	-0.357** (0.142)	-0.352** (0.141)	-0.353** (0.139)	-0.200 (0.190)	-0.160 (0.200)
Proposer is South African	0.284* (0.146)	0.322** (0.154)	0.460* (0.238)	0.485** (0.238)	0.0843 (0.173)	0.129 (0.190)
Proposer's Expected Return	0.0304*** (0.00279)	0.0301*** (0.00277)	0.0275*** (0.00414)	0.0274*** (0.00410)	0.0385*** (0.00236)	0.0381*** (0.00232)
Co-ethnic Pair	0.0968 (0.128)	0.134 (0.128)	0.433*** (0.152)	0.467*** (0.148)	-0.640*** (0.169)	-0.626*** (0.174)
Proposer is MTE	0.0687 (0.108)	0.237 (0.162)	0.0403 (0.144)	0.222 (0.210)	0.0777 (0.167)	0.196 (0.275)
Player B is MTE	-0.102 (0.116)	0.0692 (0.182)	0.195 (0.169)	0.376* (0.223)	-0.323*** (0.122)	-0.182 (0.273)
Proposer is MTE X Player B is MTE		-0.268 (0.230)		-0.290 (0.303)		-0.212 (0.347)
Observations	117	117	61	61	56	56

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.

Table B-2: Offers in Trust Game & Mother Language with Interaction-Only Black Player B's

<i>Dependent variable: Amount sent by Player A</i>						
VARIABLES	(1) Tobit All	(2) Tobit All	(3) Tobit Male	(4) Tobit Male	(5) Tobit Female	(6) Tobit Female
Proposer is Male	0.186 (0.154)	0.172 (0.148)				
Proposer is Black	0.240 (0.195)	0.316 (0.206)	0.380* (0.227)	0.501** (0.239)	0.0129 (0.245)	0.0414 (0.259)
Proposer Receives Financial Aid	-0.149 (0.233)	-0.0988 (0.245)	-0.127 (0.248)	-0.262 (0.289)	0.0211 (0.284)	0.131 (0.310)
Proposer is South African	0.103 (0.186)	0.237 (0.210)	0.0830 (0.261)	0.212 (0.268)	-0.0655 (0.278)	0.0318 (0.321)
Proposer's Expected Return	0.0348*** (0.00354)	0.0349*** (0.00358)	0.0306*** (0.00431)	0.0320*** (0.00411)	0.0416*** (0.00439)	0.0412*** (0.00457)
Proposer is MTE	-0.0278 (0.136)	0.292* (0.176)	-0.120 (0.161)	0.221 (0.179)	0.124 (0.213)	0.319 (0.297)
Player B is MTE	-0.149 (0.160)	0.288 (0.217)	0.144 (0.243)	0.636*** (0.184)	-0.420*** (0.163)	-0.116 (0.419)
Proposer is MTE X Player B is MTE		-0.670** (0.286)		-0.843** (0.411)		-0.428 (0.499)
Observations	79	79	37	37	42	42

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects are reported for tobit model. Additional controls for age, age squared of proposer and a dummy indicating if the subjects know each other is included but not reported.