

# **The Curious Case of Social Trust**

## **– Examining the Impact of Ethnic Heterogeneity and Segregation on Social Trust in Bosnia-Herzegovina**

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**Abstract:** Social trust is a fundamental part of the grease that ensures the smooth functioning of human society. It is what enables human co-existence in a society largely populated by mutual strangers. This thesis studies social trust in an environment of ethnic heterogeneity and segregation, using Bosnia-Herzegovina as a case study. It does this by consulting previously collected survey data from the UNDP, as well as through fresh collection of data from a game-theoretical experiment held on the ground in Bosnia-Herzegovina. The experiment was done in Bosnia-Herzegovina's two major cities, where the objective was to map the level of trusting, cooperative and altruistic behavior shown by the participants. The thesis incorporates the results from both the survey data and the experiment. It finds dual implications from the two sources. The survey data implies a high level of distrust throughout the population, whilst the experiment shows a remarkably high level of trusting, cooperative and altruistic behavior, implying that reconciliation in the divided population is indeed possible. The thesis thus finds that high degrees of ethnic heterogeneity **and** segregation contribute to lower levels of social trust – but that ethnic heterogeneity might be bridgeable if other social factors, such as inter-ethnic socialisation, provide a counterweight to centrifugal tendencies. As such, various kinds of ethnic heterogeneities by themselves do not necessarily imply low levels of social trust.

**Keywords:** social trust, ethnic heterogeneity, segregation

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“Learning to trust is one of life’s most difficult tasks.”

— Isaac Watts

“You must trust and believe in people, or life becomes impossible.”

— Anton Chekhov

### **Social trust – How to make or break a society**

Social trust is one of the cornerstones of human co-existence. It provides a framework for how people can interact with each other within societies in order to achieve their idiosyncratic goals, whatever these may be. For a community to last and prosper, there must be a measure of trust in the common project, and in other autonomous members of the community (Beugelsdijk et al., 2004). As we build societies of ever-increasing complexity and size, managing and maintaining social trust becomes more difficult. A large, modern community entails, on an individual level, meeting more and more strangers on a daily basis; people who we may or may not have met before and who we may or may not meet again.

Social trust in itself thus becomes an important field of study, not least due to its relevance and connection to economic development, which has been extensively researched throughout the years. A key observation is that high-trust societies tend to be more prone to rapid and advanced development than countries where that trust is lacking (Arrow, 1972; Bergdahl et al., 2007; Beugelsdijk et al., 2004; Fukuyama, 1995; Glaeser, 2000; Putnam, 1993). The presence, or absence, of social trust can impact a number of social interactions (and economic outcomes that can be derived thereof), ranging from simple economic transactions to complex contracts. In a sense, the essence that it boils down to is: ‘do I trust a person I am not greatly familiar with to treat me fairly? Do I trust him to uphold our agreements, deliver his end of whatever bargain we have struck, or at the very least trust him not to purposefully act to harm me and mine?’ In essence, to paraphrase McGregor (1967) we could say that social trust, like a reputation, can pay high dividends when on a high level. However, we might further paraphrase McGregor (1967) and add that both social trust and reputation are hard to establish and easy to destroy. High social trust can take decades or even centuries to attain, but need only a few years, or even months, to be demolished (by, for example, conflict, social upheaval, economic disturbances, and so on). All it takes is a small deviation from the social contract by some individuals or institutions to set off a chain of reactions where fewer and fewer people believe in, and adhere to, its foundations.

Furthermore, it has been argued that our ability or willingness to trust others is contingent on our ability to relate to them, which is in turn related to how similar we consider them to be to ourselves (Delhey & Newton, 2005; Lewis & Weigert, 1985; Williams, 1995; Zak & Knack, 2001). A significant amount of research shows that social homogeneity (in terms of ethnicity, class, religion, etc.) has often been an important predictor for levels of trust in a given society (Easterly, 2000; Zak & Knack, 2001). Indeed, Fukuyama (2011) argues that our basic mode of political organisation is based on small groups with shared kinship (i.e. families or tribes), with each successive layer of political organisation (from family to clan to social/ethnic group to nation, etc.) commanding less and less ‘natural’ loyalty. This behavioural tendency is closely tied to trust – ‘who can I trust to have my back when things go pear-shaped and survival is at stake?’ Societies with significant ethnic heterogeneity combined with high levels of social segregation – the mental and physical separation of groups – thus add another important dimension to the discussion of social trust. To be more specific, ethnic heterogeneity acts as a basis for group division. An individual can consider himself, and be considered by others, as belonging to a certain ethnic group – and which means by default that he does not belong to another (assuming, of course, that there is no prevalent ambiguity in ethnic identity). Social segregation within and between groups based on said ethnic heterogeneity then acts to cement, or perhaps even strengthen, the division between ethnic groups in a society. Following Fukuyama (2011), such societies are political organisations arguably far removed from the basic mode of human political existence, and the ‘natural’ loyalty such entities might command could very well be limited.

Using Fukuyama’s (2011) perspective, ethnic heterogeneity in combination with social segregation can have major implications for levels of social trust, both between individuals belonging to the **same** ethnic group and between individuals belonging to **different** ethnic groups. It can also have major ramifications for general trust levels within the society as a whole. The heterogeneous nature of many modern countries, and the increasing heterogeneous outlook of several other (primarily Western) countries, provide a background for why the combination of social trust, heterogeneity and segregation is interesting to explore. If ethnic heterogeneity and segregation increase social distance, social trust might be significantly different in those countries or territories than in other comparable entities without such heterogeneity and segregation.

This thesis will thus take a critical look at social trust in the face of ethnic heterogeneity and segregation. It will investigate how particularized trust within and between ethnic groups, as well as generalized trust within the society, is affected by those factors. It will also seek to

provide some answers to questions which emerge from the investigation, such as: 'what are the consequences of ethnic heterogeneity and segregation? Are centrifugal forces paramount, or can reconciliatory tendencies act to counterbalance a divided society in favour of unity and community?' The thesis will strive to find those answers with a thorough investigation of previously collected data as well as by new, primary data from a country with the characteristics that make it an apt and relevant area of study for drawing more general conclusions about the topic at hand.

One example of a country with those characteristics is Bosnia-Herzegovina (henceforth Bosnia), which suffered a devastating civil war in the 1990s. The war, primarily ethnic in character, transformed Bosnia from a Yugoslav republic where the importance of ethnicity and religion were downplayed by the government to a country with widespread ethnic segregation and tension, often sanctioned by the government(s). Bosnia, with its three major ethnic groups (Bosniaks, Serbs and Croats) and high degree of ethnic segregation and lingering ethnic tensions, is an apt example of an ethnically heterogeneous and segregated country, and provides an ideal case for investigation.

This thesis looks at a combination of survey data and experimental data to find what characterizes trust in Bosnia-Herzegovina. It is also the first paper to look at to what extent the post-war generation of Bosnians trust each other in an experimental setting with the aim of determining to which extent centrifugal and reconciliatory forces are affecting Bosnia's post-war transition. It adds to the current body of knowledge by looking at how ethnic heterogeneity and segregation in combination affect generalized and particularized trust levels over time. It also gives us a new perspective on how reconciliation and centrifugality function as opposing forces to affect trust and altruism levels within post-conflict generations. The thesis will start by addressing the theoretical framework underlying social trust- and cohesion, and discuss the Bosnian situation in the past twenty-five years. It will also investigate empirical data from Bosnia, including our own experimental study using investment and dictator games. Lastly, the thesis will analyse all parts (theoretical, empirical and actual outcomes) to discuss how social trust may have impacted, and still impacts, the development of Bosnia.

## **Analytical framework**

Trust is often highlighted as one of the underlying factors that facilitates a well-functioning society (Arrow, 1972; Bergdahl et al., 2007; Beugelsdijk et al., 2004; Fukuyama, 1995; Glaeser, 2000; Putnam, 1993). Trust between people and in institutions is necessary for many societal contracts to work due to complexities involved in economic interactions between people in a community. If I require input goods for my factory, I need to purchase them from someone else (or else diversify and produce it myself). Do I trust my supplier to deliver his end of the bargain if I pay upfront for them? Can he trust me to pay up if I do not? Do I trust my employees to do the work I expect of them in my factory, and do I trust them not to steal or misappropriate valuable assets situated therein? These issues come in many different forms, but they usually have to do with individual actors having to put trust in others, whether institutions or citizens, to uphold their part of any given agreement. If that trust exists, and is honoured, then transaction costs become much lower and less of an obstacle for doing business. If that trust does not exist, then transaction costs are exponentially increased. Without trust, society's (economic, political and social) efficiency will erode (Berggren & Jordahl, 2006; Fukuyama, 1995; Inglehart, 1999; Uslaner, 2003). Lack of trust means, as stated previously, increased transaction costs expressed through, for example, higher costs for contract enforcement, control and security. Increased transaction costs associated with any economic interaction will correlate with a lower propensity to invest in projects that would have had a positive return given a higher level of social trust. In a society with low generalized trust, people have a smaller pool to choose from when engaging in economic interactions. Instead of looking for the counterparty with whom the transaction would be mutually most beneficial given high generalized trust levels, the agent has to resort to a smaller sample of close acquaintances who he can trust enough for the transaction to be profitable. Therefore, when there is a widespread lack of faith in others, many mutually (and socially) beneficial economic interactions are not made – with a loss of economic development as a result (Berggren & Jordahl, 2006; Fukuyama, 1995; Knack & Keefer, 1997; La Porta et al., 1997; Putnam 1993).

In the field of social trust, a distinction is made between generalized, institutional and particularized trust (Hooghe & Stolle, 2003; Rothstein & Stolle, 2003). Generalized trust describes the concept of trust in 'most people', or unknown individuals. Nevertheless, the subjective meaning of the term 'most people' and whether it actually means general trust has been questioned (Delhey

., 2011). It does, however, arguably provide some poignant insight into the aspect of trust that relates to individual-to-individual interactions outside of the personal sphere of friends and family. Particularized trust, on the other hand, describes trust in 'known' people, or people belonging to the same group (such as family and friends or even broader groups such as co-religionists or those with a similar ethnic background). The difference between generalized and particularized trust is not necessarily absolute but can, rather, be a gradual shift. Fukuyama (2001) emphasizes this by arguing that there is a radius of trust which might correlate negatively with a radius of distrust, i.e. that being close in the radius of trust means you are far away in the radius of distrust, and vice versa. Individuals who are closer in the radius of trust tend to be trusted more whereas individuals further out in the radius are distrusted, or at best not trusted to the same extent as those closer to the core. In the context of Bosnia, ethnicity identity represents a divider between groups, where it might be argued that someone of the same ethnicity would be more likely to be seen as an in-group member than someone of a different ethnicity (Alesina & La Ferrara, 2000; Baldassari, 2015; Delhey & Newton, 2005; Gustavsson & Jordahl, 2008; Leigh, 2006; Putnam, 2007; Stolle et al., 2008). Thus, individuals with a common ethnic identity might rely to some extent on particularized in-group trust when engaging with each other, whereas individuals from other ethnicities would to a higher extent fall under the blanket of generalized, out-group, trust (or distrust). According to Fukuyama (2001), a higher level of particularized trust in, for example, one's own ethnic group could increase distrust for other ethnic groups as they would be moved further out in the radius of trust.

Institutional trust, on the other hand, is trust between individuals and institutions. Rothstein and Stolle (2003: pg. 192) argue that institutional trust is dependent on the 'perceived fairness and impartiality of the institutions responsible for the implementation of public policies.' It differs from particularized and generalized trust in the sense that it is not about interpersonal trust but rather trust between an individual and a faceless institution. Institutional trust often seems to correlate with generalized trust, something usually explained by the generalized trust inherent in a society resonating in trust in institutions. Rothstein and Stolle (2007) challenge this notion by presenting evidence of a causal link from institutional characteristics to generalized trust. Well-functioning policy-making institutions will, according to Rothstein and Stolle, generate higher institutional trust and also directly impact generalized trust levels positively. This potential causal link between well-functioning institutions and generalized trust should not be ignored in the case of Bosnia, a country with corrupt, complicated and ineffective policy-making institutions.

### ***The Rational Man – Homo Economicus and his issues with trust***

A basic theoretical fundament for discussing social trust is the classical economic conception of man. In conventional economic theory, two main assumptions tend to be made about the nature of *Homo Economicus*; one concerns his analytical process, and the other his perception of ends. The first assumption is that man is a perfectly rational creature when it comes to analysing what decisions to take about the future. The second assumption is that he takes all his decisions with the aim of maximizing his perceived utility from any decision, given the constraints imposed upon him in that same decision (Berg et al., 1995).

Often this theory comes with a further set of assumptions as well, which seek to nail down a more specific type of behaviour; (1) the objects of interest are restricted to personal consumption (i.e. utility is derived from consumption, not some abstract altruism and the like); (2) more consumption is preferred to less; (3) only current consumption possibilities and plans for future consumption can influence current behaviour (i.e. past events do not matter to what choices will be made in the present) (Berg et al., 1995). These assumptions combined with perfect rationality and utility maximization gives us our self-interested protagonist.

One of the most important implications of *Homo Economicus* is thus that trust is entirely absent from the equation. In a society of such beings, there is no such thing as trust. Every transaction is taken with a view to maximizing self-interest (as derived from the initial premises), and expecting that everyone else will do the same (since they have similar premises and rational inclinations). The element of trust, as such, does not play a role in any interaction between people (at least where utility is concerned). If two people can maximize their utilities by cooperating, they will do so. If they can maximize it by deviating from the agreement, they will both do so instead (even if that places both in a sub-par outcome).

The theory of *Homo Economicus* might thus be seen as a negation of any kind of social trust. If we were to describe social trust in classical jargon, it might be described as a belief (or lack thereof) that others might be willing to forego utility-maximizing strategies in order to achieve cooperation, and perhaps a better longer-term pay-off. We could illustrate this point with an example in the form of an investment game. In the investment game, two players are paired with each other. The first player is endowed with a sum of cash, say X, which he can decide how to allocate. He can keep it all, or he can send some or all of it to player two (where the amount sent, Y, is equal to or smaller than X). The sum that is sent is then doubled. Player two can then decide whether to keep the entire sum (2Y) for himself, or send

some of it back to player one (Berg et al., 1995). In the one-shot game, there is no reason why player two would ever decide to send back any money to player one – it goes directly contrary to what a perfectly rational individual with the above-mentioned characteristics would do. It follows that there is no reason why player one would ever decide to send any money to player two – there is no conceivable reason why he would ever get any of it back. In this game there is no social trust as described above; two *Homo Economicus* can simply not be induced to trust and cooperate with each other for the simple reason that trust is an alien concept to these two beings. Cooperation is made only if a rational assessment of one's self-interest indicates that it should – and that renders trust entirely superfluous, because the other person is assumed to be doing the same.

***Social proximity and trust – a model for social (dis)trust due to economic, social and genetic proximity***

Conventional economic theory can be found quite wanting when discussing social trust for the simple reason that there is no actual social trust to be found in it. It provides us with a platform for understanding human behaviour given certain premises and assumptions of it, but it does not greatly help us understand the issues of social trust themselves. For that, we will be looking into alternative theories of social behaviour.

A development in the social trust theory field is that brought by Zak and Knack (2001). Their insight is to construct a theoretical model which takes into consideration aspects which might affect social trust, such as social distance between people in terms of class, education, ethnicity, religion, race, etc., in order to evaluate how, and to what extent, these difference might impact economic outcomes.

To test this, Zak and Knack construct a 'general equilibrium heterogeneous agent growth model' (pg. 296) in which brokers and clients are assigned a composite index value,  $j$  and  $i$  respectively, which represents the relative social and genetic, etc. position of that client or broker. In the model, (immortal) clients are motivated by a desire to maximize their utility (derived from consumption) over time. However, clients need brokers for implementation of financial decisions, such as saving and investing money for future consumption, and borrowing money or liquidating assets for current consumption. Furthermore, there is a level of asymmetric information prevalent in their relationship. The client cannot directly observe what actions are taken by the broker, and can only partially remedy this by investigating and monitoring the broker in order to ensure his fiduciary compliance. Monitoring, however, is costly. In order to monitor brokers, clients must take time away from their paid jobs in order

to do due diligence on the broker, which then represents an opportunity cost from loss of wages. The brokers, thus, have a scope for cheating their clients, which is the reason for why monitoring might be necessary.

Now, various social differences between a broker and a client can induce different types of behaviour in regards to each other, depending on their social proximity to each other (that is to say, the proximity of  $i$  and  $j$  to each other on the composite index scale). The theoretical argument made is that clients and brokers who are closer to each other will be more likely to form bonds of trust with each other, since the client would feel more likely to be treated right, and the broker would feel less free to cheat a client close to his own (social and/or genetic) kinship group than one further distant from it.

The important implication from the theory is that as heterogeneity grows (i.e. as the distance between  $i$  and  $j$  increases), the less money is likely to be invested. The lack of trust which stems from differences between client and broker can thus have major influences on the economic development of entire countries. Where social distances are great and social trust (consequently) is low, people are less willing to part with their savings to other parties, which limits capital available for investments in the country, which in turn leads to lower economic growth.

As the authors themselves note, however, another way the situation could “resolve” itself (although outside the scope of the model itself due to its random matching of client and broker) is by segregation of different social groups, where “clusters” of trust emerge. Examples of that might be Jews in medieval Europe, Lebanese and Indian traders in East Africa and whites in South Africa.

### ***Centrifugality and reconciliation***

Zak and Knack’s model provides a good framework for formalising the economic outcome of social distance between people. However, it does not help us understand how social distances emerge, and what their trajectories might be. Another theoretical aspect to take into account, then, would be what we could term centrifugality and reconciliation, which can start to give us an understanding on that point. We can use Meier’s (2008) theory of (institutional) change and Kriesberg’s (2007) discussion of reconciliation as a fundament for discussing those two aspects.

Meier’s theory is focused on the underlying causes of change, such as in a political or social arena, and the imperatives which lie behind it. The two key concepts are embeddedness and

opposition, which represent the two opposing forces in the struggle for change. The forces of embeddedness represent the status quo, and are the opponents of change, whilst the forces of opposition, on the other hand, represent those elements which want to replace the status quo with something else. The two forces are constantly in conflict with each other, with one or the other being victorious in a given time. There are countless examples of such struggles – big and small, political, social or economic – where some coalition or force is pushing for change, and another is defending the current order.

We can relate and apply this theory to centrifugality and reconciliation, as discussed by Kriesberg (2007). These two represent two different opposing tendencies, and thus also social trajectories. Centrifugality is a force for separation and division, whereby a society would tend towards fragmenting into smaller constituent pieces (on a social level if not a political). Reconciliation is the opposite force, a force which pushes for unity and community rather than sundering. To paraphrase Kriesberg (2007), reconciliation often refers to the process of developing a mutual reconciliatory understanding between two previously divided groups. Which of the two forces would prevail in a given society in a given time depends significantly on the underlying conditions prevalent in that society. Ethnic heterogeneity and segregation are elements which would play very readily into the hand of centrifugal elements. They provide a divided population with the potential to breed more division endogenously by having existing antagonisms provide the fuel for an ever-deepening downwards spiral of resentment. It gives us a framework for evaluating the trajectories of division and/or unity, and thus social trust, in a society.

The theory does not explicitly relate to social trust, but rather does so implicitly. After all, social trust is closely tied with the concepts of centrifugality and reconciliation. An increasingly sundered population implies a decreasing level of generalized social trust, whilst an increasingly united population implies the opposite. Thus, combined with the earlier theories we would have a solid analytical framework for examining social trust in an ethnically heterogeneous and segregated society.

### ***Implications of theory***

These theories provide a certain level of insight into human behaviour, although that insight might be found wanting in certain aspects. That academic creation, *Homo Economicus*, gives us an understanding of how a perfectly rational being under a strict set of premises would act. However, we might ask ourselves to what extent *Homo Economicus* is prevalent in the population. *Homo Economicus* does not trust, cannot trust and has no need of trust to make

its decisions. It would thus not matter whether a society is a high-trust one or a low-trust one (and, in fact, it would be a low-trust one by definition). Yet, academic research has shown that trust does play a major role in human interaction, and that high-trust societies are consistently better off than their low-trust counterparts (Arrow, 1972; Bergdahl, et al., 2007; Beugelsdijk et al., 2004; Fukuyama, 1995; Glaeser, 2000; Putnam, 1993). Perhaps we can reconcile the existence of *Homo Economicus* with social trust with a study by Yamagishi et al. (2014), which finds that *Homo Economicus* and almost-*Homo Economicus* individuals do exist, just not in the quantities assumed by conventional economics. Instead, the proportions of those who act like *Homo Economicus* or almost-*Homo Economicus* are fairly small, at 7% and 9% respectively. That would give the *Homo Economicus* theory some validity (as these one-in-six people would still play a significant role in social and economic life), whilst still allowing for a crucial importance to be given to social trust.

However, Zak and Knack's theory becomes much more interesting for the case in Bosnia. Its description of trust conditional on social, economic and genetic distance is a poignant groundwork for analysing the situation on the ground in the country, as it outlines and predicts what can happen to societies where there is perceived to be a social gap between the members of that country, and especially the implications of making that social gap even wider through civil war, ethnic division, widespread corruption and patronage-dependence.

In addition, the theory of centrifugality and reconciliation adapted from Meier's (2008) theory of (institutional) change, as well as Kriesberg's (2007) discussion of the forces of reconciliation and its opposite, gives us a wide base from which to evaluate social integration/segregation in a society. It expands the analysis which can be drawn using only the previous two, as it takes into account not just the current state of social proximity, like in Zak and Knack, but also the trajectory of it. This theory would thus complement an examination of an ethnically heterogeneous and socially segregated country.

## **The Bosnian-Herzegovinian situation**

### ***1995–2002***

#### *Social trust in the aftermath of war*

The modern Republic of Bosnia-Herzegovina was born in the cataclysmic death throes of Yugoslavia in the early 1990s. The Yugoslav republic which preceded it had been one of the less developed of the Yugoslav republics, and had been the only one without a dominating

ethnic group. Nevertheless, the republic had been characterized by relatively good relations between the nationalities, strengthened by the communist party's (the league of communists) desire for an integrated and unified Yugoslav populace. However, the good ethnic relations which had prevailed in the decades prior to its secession from Yugoslavia were utterly destroyed by the war, which tore the social fabric of the country apart (Dyrstad, 2012; Efendić et al., 2014; Gavric et al., 2013). By the time the war ended in 1995, Bosnia was unrecognizable from what it had been just a few short years earlier. Indeed, the years of war were not only a catastrophe in terms of human lives directly affected or ended by the conflict, but it was also a catastrophe for the very fabric of Bosnian society, institutions and economy.

The breakdown of ways of life, friendships and friendly neighbourhood relations have massive implications for the functioning of any society. The calamity that struck Bosnia was no different; indeed, it was perhaps worse than many by the very way in which the social fabric was torn apart. State functions which had once supplied the means of maintaining a livelihood all but evaporated (Pugh, 2002). Neighbours who had once been friends, or at least on friendly terms, turned deadly enemies. This often occurred on an impersonal level, where these neighbours disappeared into the opposing lines, but also sometimes on personal levels, when neighbours were the ones to commit terrible deeds to other members of their communities (Gavric et al., 2013; Phillips, 2009). Communities which had provided the social pillars for the lives of their constituents ceased to exist (Phillips, 2009). The flood of refugees into new areas created a different social fabric than that of the old; more cutthroat, less predictable, with fewer traditional constraints to acceptable means of behaviour (Pugh, 2002).

In essence, the shredding of social fabrics meant that people had to find new ways of establishing their personal security and sense of belonging. The state could not be trusted; it had disappeared as a means of dispensing bread and work, and had, depending on the area, become a predator (Pugh, 2002). Strangers could not easily be trusted; at best you could hope that they were simply looking out for themselves and at worst they could be out to actively harm you. Members of other ethnic groups could not easily be trusted either; ethnic cleansing and civil war had made certain of that (Bieber, 2006). In a society torn to shreds, where everyone was looking out for themselves, a necessary mental disposition was that only a few people could be trusted with any kind of certainty. In broken human societies in general, and in Bosnia in particular, those few were often members of one's family and one's (close) friends (Fukuyama, 2011; UNDP, 2009).

Most areas of Bosnia had gone from integrated ethnic melting-pots to ethnically segregated communities, with high degrees of decentralization (in favour of local ethnic strongmen and to the detriment of the central government) (Bieber, 2006; Gavric et al., 2013). By 1996, the economy of the country lay in ruins, with GDP per capita levels down to 20% of that in 1990 (Pugh, 2002). Over two million Bosnians had become displaced from their places of birth, either by choice (for example, fearing violence to come) or force (for example, ethnic cleansing) (Bieber, 2006). The economic exchange within the country, once integrated, had been torn to pieces, and large corporations which before the war had provided the mainstay of local economies in terms of employment had more often than not been plundered and shuttered during the war, and would remain starved of liquidity and capital in the years after.

### *Reconstituted Bosnia*

The Dayton Agreement struck in 1995 managed to end the armed conflict which had devastated the country, and ushered in an era of uneasy peace. In terms of putting a stop to the fighting and bloodshed it was largely successful. No more large-scale fighting took place on Bosnian territory, nor has it in the years since (Gavric et al., 2013). It achieved this, however, at a significant cost to the viability of the country itself, which became evident in the years to come.

On a lower level, Bosnia was split between two entities (later to become three with the creation of the semi-entity Brčko District). One of them, Republika Srpska (henceforth the Republic), was itself a territory which had emerged as the direct result of large-scale ethnic cleansing of its non-Serb population (International Crisis Group, 2014; McMahon, 2004; Pugh, 2002). Indeed, the inter-entity borders between the Republic and the Federation of Bosnia-Herzegovina (henceforth the Federation) had little semblance to any historical entity, nor did it, except incidentally, follow any natural boundaries. It was in essence the armistice line at the time of the Dayton Peace Agreement, aside for some relatively minor swaps of territory between the two. The Federation itself was the amalgamation of two sets of territory: firstly, the rump of the country which the (Bosniak) Sarajevo government had successfully held against the Republican- and Herceg-Bosnian armies and, secondly, territories held by the (Croat) secessionist pseudo-state Herzeg-Bosna. Part of the compromise which allowed the unification of Bosniak and Croat lands was that the Federation was split into ten semi-autonomous cantons, each with significant powers of self-government. The simple reason for this constitutional setup was to assuage Croat fears of

being politically marginalized by the far more numerous Bosniaks. The canton-system, by its very design, stopped such marginalization from being possible.

The reconstructed Bosnia of 1996 was thus in many ways a creature of political compromise and expediency, and in many cases the result of negotiations and agreements far from Bosnian soil and with significant non-Bosnian input. It fixed in place a byzantine state structure which more often than not worked to the detriment of national reconciliation, and which entrenched rapacious, local power elites who could control the nooks and crannies of their local state machinery (Pugh, 2002). The federal government, such as it was, had further ethnic divisions explicitly built into it by, for example, ethnic quotas for the House of Peoples, the Council of Ministers as well as the Presidency (Gavric et al., 2013), and was by its very design a weakened central government with fairly limited influence over its constituent parts. The structure of the state(s) reassured each ethnic group that none of the other groups, separately or together, could marginalize them politically and run rough-shed over their interests and collective will. The downside of that very structure was that government also became paralyzed – unable to act in even the most mundane of matters without consensus between the representatives of the three constituent peoples, which was often impossible to attain (Gavric et al., 2013). It would thus come as no surprise that a government purposefully made complicated, toothless and controllable by powerful interests was to become distrusted by the general public; for its inability to deliver social goods and its partial control by various patrons who could use it to dispense favours to supporters and key interest groups, and hinder the activities of those out of favour.

#### *Social and economic disruption in the post-war era*

Much of what the Bosnian population had come to rely on for their livelihoods before the war melted away during and after the war. Indeed, unemployment affected around half of the population as late as 2001, at the same time as wages had collapsed. The social protections which had existed before the war had melted away under the weight of revenue shortfalls, dysfunctional bureaucracies and rampant inflation in both entities of Bosnia. Even as late as 2000, years after the fighting had ended, and at a time when the international presence had been diminished in size, as many as 46% and 75% of the Federation and the Republic respectively were living in poverty (Pugh, 2002). The economic security, such as it was, enjoyed by the Bosnian population before the war had failed to return, and it looked, at the time, increasingly unlikely to do so (Pugh, 2002). Tying in with Zak and Knack's model, it was as if the Bosnian population had sundered. The distance between people, like the broker

and client, had increased, and especially so between those belonging to different ethnic groups. Trust, such as it had been, had all but evaporated.

### ***2003–2016***

For all its current political, social and economic malaise, Bosnia has progressed much from the nadir reached in the early 2000s. Steady growth over the period has more than doubled per capita GDP (PPP) in the country, alleviating some of the abject poverty that prevailed for many years after the war. Nevertheless, several significant structural problems remain. Many of these were problems that became obvious early on in the post-war period, and which seem not to be going away. As things stand, these structural issues are major hindrances to successful economic development, development of a functional political system and growth of social trust.

### ***The ghost of Dayton***

As mentioned earlier, the primary purpose of the Dayton Agreement was recognizing facts on the ground, as they stood in late 1995, and overcoming them to bring about a cessation of hostilities on the ground, which had shed between a hundred and two hundred thousand lives since 1991. It was successful at bringing this about, but at a very high price. It locked in place one of the most complicated state structures in the world, which diminished state power at all levels (except, perhaps, in the Republic, which remained a unitary entity). This fact was recognized very early on in the post-war era, but it has remained a major obstacle to successful economic development even today (International Crisis Group, 2014). The consequence of this intricate system was the development of an incredibly complex system of regulations, in which any kind of commercial engagement became near impossible for rule-abiding citizens. As a result, rule-abidance becomes a weakness that could ill be afforded (International Crisis Group, 2014). Indeed, the paradox of these overly complex, complicated and contradictory governmental systems is that they become, especially with time, entirely arbitrary. In a jungle of regulatory rules, regulations, and overlapping jurisdictions with uncertain powers, acting according to the rules becomes impossible. Knowing the right people and circumventing arbitrary regulations becomes the only way for one to do business, and that very fact yields enormous dividends for entrenched political elites (Bieber, 2006; International Crisis Group, 2014; Pugh, 2002).

The political dysfunction that was spawned at Dayton has thus persisted to the present day. Part of the reason for the dysfunction is the different objectives of the three constituent

peoples, where Serbs and Croats tend to favour autonomy and separation, whilst Bosniaks favour centralization and integration. However, a large factor is that the current system serve the interests of the political elites very well (International Crisis Group, 2014). They are placed in a position where they can use their local state machineries to their advantages, whether to sluice resources to favoured companies or to provide employment and sinecures to supporters, and so on. For those wishing to secure a decent life, connections thus become the primary currency. It is how you find a job, how you start a company, how you gain access to financing, how you avoid predatory state functionaries who could and would fine you exorbitant fines for minor breaches of (insurmountable) regulations, if the powers that be would deem it appropriate (International Crisis Group, 2014).

### *Segregated at birth*

One of the most significant institutional segregating policies that was put into place after the war had ended was perhaps the segregated school system, where students of different ethnicities attend different schools or at least attend different classes. One example that characterizes this educational segregation is what is commonly referred to as ‘two schools under one roof’ established in 2003 as an alternative to the traditional segregated schools. Under this system, Croat and Bosniak students attend the same schools but in different classes and with different curricula. Schools in the Federation are usually attended by one ethnic group in the morning and the other group in the afternoon, effectively separating and segregating Croats and Bosniaks. In addition to physical separation, some subjects are taught differently depending on the ethnic group of the pupils, these are called the ‘national group of subjects’ and include subjects such as history, geography and religion. The history taught is altered depending on ethnic affiliation of the students and acts as a means segregation of the minds of young Bosnians (Clark, 2010).

‘Two schools under one roof’ is just one example of the segregation in the educational system that is widespread in Bosnia. Almost all young people of the post-war generation have gone through the segregated school system, educated not primarily as Bosnians but as Bosniaks, Croats and Serbs with different perspectives on their common context.

### *Disenfranchisement and disempowerment*

The events and developments of the past twenty years is, arguably, what has produced the low levels of social trust in Bosnia. Characteristics of Bosnian institutions often coincide with factors that Rothstein and Stolle (2007) claim negatively affect generalized trust levels. If

never high to begin with, the destruction and degeneration of political and social functions in the period has not done much to improve matters. If you would choose one word to describe Bosnian mentality in the modern day, it would be fatalism. Under the weight of civil war, political dysfunction, poverty and patronage systems, the average Bosnian is a cynic with regards to public affairs. Political parties are almost universally despised by all three constituent peoples of Bosnia (and also by those who figure under the title of ‘Others’), with only 17% of Bosnians willing to join a political part (International Crisis Group, 2014). The disillusionment with the prevailing state of affairs is an explanatory factor behind the high level of civil passivity amongst the Bosnian citizenry.

## **Previous empirical findings**

### ***Social trust***

Empirical research about particularized trust tends to focus on the study of trust within a defined group as well as trust between individuals belonging to different groups. In line with Zak and Knack (2001), trust tends to be higher with increasing social proximity; that is to say, people tend to trust the ones closest to them the most. Religion, ethnicity, wealth and geographical proximity are some of the variables that have been used in previous studies to determine how in-group trust differs from trust between people belonging to different groups (Alesina & La Ferrara, 2002; Bahry et al., 2005; Brañas-Garza et al., 2009; Johansson & Stenman, 2009; Lei & Vesely, 2010; Leigh, 2006). Ethnicity and religion are broadly defined groups that could suggest a common set of values, historical interpretations or similar shared understandings, which influence how social interactions over time may play out. This does not necessarily mean that all in-group members know each other, which would be unlikely in large population groups. Empirical studies, however, show that in-group trust is usually greater than trust between groups, even for more broadly defined groups. This is in line with theory (Zak & Knack, 2001) and previous research on the subject (Bahry et al., 2005). Indeed, Bahry et al. (2005) looked at how ethnicity affects generalized trust in two minority regions in Russia, their research supports previous findings that ethnicity acts as a barrier for trust. However, they also found that high in-group trust within ethnicities does not necessarily diminish generalized trust. Bahry et al. (2005) furthermore concluded that generalized trust and trust in other ethnic groups are not necessarily interchangeable, but rather that generalized trust can be equally applicable to members of one’s religious or ethnic group (for example) – not just those of other groups.

## ***Bosnia-Herzegovina***

Bosnia has been the subject of significant amounts of analysis and academic writings in the past two decades. Many different aspects of social interactions and trust have been researched, and they have pointed at different issues behind trust. Often authors have primarily utilized ethnicity as a group variable.

One way in which this has been done is by Håkansson and Sjöholm (2007), who looked at how ethnic diversity affects trust in Bosnia by using survey questions. They found that generalized trust is low in the country and that ethnic heterogeneity negatively correlates with trust. Looking separately at different geographical areas, they found that generalized trust is lower in ethnically heterogeneous areas. O'Loughlin's (2010) research built upon such findings by investigating the extent and possibilities of inter-ethnic friendships in post-war Bosnia. As discussed earlier, the war tore the social fabric of the country apart, and was key to breaking down the ethnic inter-mingling that prevailed before the war. What he finds is that the gulf between the groups still exists to a significant extent into the present day, which might have major implications for the reconciliation of the country (and the social trust associated with it).

Ethnic segregation and its implications for trust have also been researched. One way this has been done is by looking at educational facilities. Alexander and Christa (2011) investigate the effect that the segregated schooling system has had on inter-ethnic trust. They look at social trust in the city of Mostar with primarily Bosniak and Croat inhabitants. Since the war, there have been both ethnically segregated and integrated schools in the city. The authors find that cooperation in public goods games between Croats and Bosniaks in Mostar seem to work better in schools with integrated classes. They show that institutions of integration can have a positive effect for achieving cooperation between ethnic groups, and the absence thereof can have the opposite effect. A conclusion that can be drawn from the paper by Alexander and Christia is that the institutions put in place to appease the ethnic groups in the conflict has also cemented the social and political importance of said groups in Bosnian society, something echoed by McMahon (2004).

Efendić et al. (2014) investigated the ethnic tensions in Bosnia and how they relate to economic performance. By conducting surveys and qualitative interviews, they found that the best predictors for ethnic tolerance are education, employment status and age. All these factors are positively correlated with ethnic tolerance. The authors conclude that people's tolerance and opinions towards other ethnic groups are based on personal experiences. They

also find, somewhat surprisingly, that young people tend to be less tolerant towards other ethnicities than older people. Possible explanations for this are that low employment status coincides with young age. The authors also highlight the effects of an ethnically segregated system that was implemented after the war where many institutions, including education, are ethnically divided. Older generations on the other hand have experience from the more ethnically tolerant and integrated Yugoslavia.

## Hypotheses

In order to continue the analysis of Bosnia we must first establish that generalized trust in Bosnia is lower than in more ethnically homogenous comparable countries. The thesis seeks to put this statement based on results from previous studies (Delhey & Newton, 2005; Lewis & Weigert, 1985; Williams, 1995; Zak & Knack, 2001) to the test. Bosnia differs from other countries in the sense that it is highly ethnically segregated with parallel school system and two entirely different entities for Serbs, and Bosniaks and Croats. As theorized by Zak and Knack (2001) and shown empirically by Alexander and Christa (2011) and Håkansson and Sjöholm (2007) people in segregated systems tend to show lower trust towards each other. The first hypothesis aims to find out if the segregation affects particularized trust levels within and between ethnic groups in Bosnia as a whole, not looking specifically for the extent respondents have been exposed to segregation. Finally, the second hypothesis looks at if younger generations grown up entirely after the war have been affected by the segregation so that they trust people of other ethnic groups less than their older compatriots. The post-war generation is interesting due to two unique characteristics. In their entire lives they have only experienced the ethnically segregated system and thus have no experience of the integrated system before the war. They also have no first-hand experience of the war and the grave ethnic struggles, implying that they would be more prone to reconcile with their traditional enemies.

In order to investigate these issues further we need to verify the following assumption:

*Generalized social trust in Bosnia is lower than in comparable countries with lower levels of ethnic heterogeneity.*

Given this assumption, we can test the following hypotheses:

*H1: Social trust is lower between Bosnians of different ethnicities than between Bosnians of the same ethnicity.*

*H2: For those raised after the war, the disparity in social trust and altruism between one's own and other ethnic groups will be higher than for those raised before the war*

## **Method**

A common measure for generalized trust is the question asked in the World Values Survey, 'Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?' The question is often used in research, both in independent surveys and taken directly from the World Values Survey, as a standard measurement for general trust levels. Delhey et al. (2011) questions the validity of this question for measuring generalized trust, the authors suggest that an experimental assessment might give a better picture of actual trust levels. They emphasize that the term 'most people' might mean different things to the respondents depending on his or her context. For example, 'most people' might be interpreted more broadly for someone living in an urban environment than for someone living in a closed rural community. In the context of Bosnia, ethnicity could inadvertently be incorporated in the phrase 'most people' for the respondent, e.g. a Bosniak thinking that the term 'most people' would include Serbs. In addition to the question being open for interpretation, it has been found that it is a more effective predictor of trustworthy behaviour rather than trusting behaviour (Glaeser et al., 2000). To measure trust more effectively, experiments mimicking reality are common. This is usually done by creating game scenarios with real stakes. Measuring trust in an experimental setting can act as a complement to standardized measurements of trust levels. Survey data has the advantage of being comparable to other surveys and relying on a large, representative sample, while experimental data gives a truer estimate of actual trust levels but often using a smaller and possibly less representative sample.

The hypotheses will be tested both on a survey data set and on an experimental data set. Using both survey data and experimental data gives a greater understanding of trust in Bosnia and helps us answer the hypotheses more thoroughly. Survey data offers a larger and more representative sample of the Bosnian population and is also more comparable across countries. Furthermore, trustworthiness tends to be fairly well reflected in survey data, specifically the World Values Survey, it might even be somewhat hard to separate from trust (Glaeser et al., 2000). Trustworthiness, as opposed to trust, is how much a person **deserves to be** trusted. That is, a trustworthy person delivers on the implicit obligations that a trusting person grants him.

Experimental data on the other hand better reflects the actual levels of trust **and** trustworthiness in a clear and separated manner (Glaeser et al., 2000). By using experimental data we can also control the participants' information sets. In the survey, participants were asked explicitly about their trust in people of the same and other ethnicities consecutively, creating a risk both of anchoring and priming. This potential bias is eliminated in the experiment since participants are not primed about the purpose of the experiment and the same individuals are not matched with both people of the same and a different ethnicity. In the experiment we also observe trustworthiness directly in the second stage of the game.

A game that is often used for measuring trust is the prisoner's dilemma (PD). In the PD game, each of the two players decides whether to cooperate or defect. If both cooperate, they get a payoff of 2 each. If both defect, they only get a payoff of 1 each. However, if one person cooperates and the other defects, the person cooperating gets a payoff of zero while the person defecting gets a payoff of 3. The maximal social payoff is achieved when both players cooperate, but, it is always an optimal strategy (pay-off wise) to defect for each player. Thus, trust in the other person to cooperate is required in order to for a player to choose cooperation and achieve maximum social payoff.

The investment game is similar to the prisoner's dilemma in that it requires trust in another player for maximum social payoff. A difference from the prisoner's dilemma is that the investment game is sequential. The second player can observe to which extent the first player put trust in the second player and respond based on this knowledge. The information provided to participants can be seen in the Appendix. The investment game is conducted as follows:

#### *Stage 1*

Player 1 (the sender) is endowed a specific amount as a show-up fee. The sender then has the option of sending all, some or none of the initial endowment to Player 2 (the recipient).

#### *Stage 2*

Player 2 receives the money sent by Player 1. Once the money reaches Player 2 the amount is doubled. Player 2 then decides whether to send all, some or none of the money from Player 1 back to Player 1.

#### *Stage 3*

Player 1 receives the money that Player 2 sent back.

Both players have complete information sets about all aspects of the game and each other's previous actions, i.e. Player 1 knows that the amount will be doubled once it reaches Player 2 and that Player 2 has the option of sending money back to Player 1. Player 2 also knows that the money is doubled once sent to Player 2. Player 2 also knows the initial endowment and how much Player 1 sent to Player 2. Player 2 and Player 1 remain anonymous to each other. This game is more precise than the PD game in that it allows for one player to signal trust in the other and also the extent of this trust. The investment game also allows for the player to show to which extent he trusts the other player by specifying the amount he is willing to send.

However, the investment game does not only account for trust. Sending money to another player could also imply a sort of altruism where the sender does not necessarily expect to get money sent back to him. To account for the share of altruism that manifests through the investment game we also use a dictator game. The dictator game is equivalent to the investment game in stage one but the recipient does not have the option of sending back any money to the original sender. Therefore, the dictator does not rely on any assumption of trust towards the recipient. If the sender does not trust the recipient to send back any money at all, he should send the same amount in the dictator game as in the trust game. The share of money sent that is associated with trust should be the difference between the amount sent in the investment game and the dictator game.

Thus, trust expressed by each individual is approximated as follows

$$Trust_i = Money\ sent\ in\ Investor\ Game_i - Money\ sent\ in\ Dictator\ Game_i$$

Where

$$Trust_i \geq 0$$

for each individual sender  $i$ .

### ***Analytical approach***

To acquire a robust measurement of trust levels within and between ethnic groups in Bosnia, we use both survey questions and games with real stakes. We begin by analysing a broader data set gathered by the UNDP finalized in 2008 on issues relating to trust and ethnicity. We then take a closer look at the topic by conducting an experiment based on the investment and dictator games for students in Bosnia. Thus we look both at the traditional estimation method of trust levels via survey questions and at trust levels in practice by conducting an

experiment with real stakes. To be able to evaluate the post-war generation we need to collect new updated data for the post-war generation which was not captured by the UNDP survey.

### ***Survey data***

The UNDP data consists of a sample representative of the whole Bosnian population, i.e. it is not limited to certain cities or age groups. The data set was gathered in 2007–2008 which indicates that even the youngest participants (16 years old) might still have some first-hand experience of the war, possibly affecting their responses. The survey used to collect the data was conducted through individual interviews with the respondents and consists of roughly 350 data points as a results of the interview. The purpose of the survey was to collect data on social capital in Bosnia. We use a subset of the questions asked in the survey for our analysis. The data we use is related to trust and ethnicity. To measure generalized trust the survey asks the question formulated by the World Values Survey: ‘Would you say that most people can be trusted or that you cannot be too careful in dealing with people?’ To measure particularized trust, we utilize a question where the respondent is given a choice between the alternatives ‘Trust all’, ‘Trust most’, ‘Trust some’ and ‘Trust none’ for different selected groups. We look at how the respondent answers concerning the group ‘own ethnicity’ and ‘other ethnicities’ to estimate the different levels of trust in those groups.

To compare the UNDP data to data from other countries, we look at how inhabitants in Croatia, Slovenia, Serbia and Bulgaria answered the generalized trust question. These countries are similar to Bosnia in most aspects, but have a more homogenous ethnic composition. Several Western Balkan countries are not included as comparable countries for different reasons. Montenegro is assumed to be similar to Serbia and therefore does not add any relevant insight. Macedonia has a similar ethnic heterogeneity as Bosnia with a large Albanian minority. Albania is difficult to use for comparison because of its very different and unique history compared to the ex-Yugoslav countries. Kosovo has had a significant ethnic conflict in recent times which makes it difficult to decipher any comparative data. We also look at previous surveys measuring generalized trust to be able to evaluate the trajectory of Bosnian generalized trust levels over time.

The survey data gives a comparable and representative overview of Bosnian trust levels, but there are also some issues. As previously mentioned, the WVS question regarding ‘most people’ might be interpreted differently in different contexts (Delhey et al., 2011). This poses a problem when trying to estimate generalized trust levels in Bosnia, since the question might be interpreted differently by different people. One way to overcome this is through collecting

experimental data as opposed to survey data. An experimental experiment will reduce the risk of biased answers due to the nature of the questioning and also be better designed to account for true trust, something that survey questions are not necessarily a perfect measurement for (Glaeser et al., 2000). Furthermore, in order to fully account for the effect of segregated institutions instigated during and after the war as well as ensuring that we are able to look at a true post-war generation, updated (experimental) data is necessary.

### ***Experimental data***

For our experimental research we use a population of students from the University of Sarajevo in the Federation of Bosnia and Herzegovina and students from the University of Banja Luka in the Republika Srpska. We use students from universities in the two main entities of Bosnia as a proxy for ethnic identity. According to the UN data (2009), the correlation between the ethnic identity and the entity of residence is about 85%. What that means more concretely is that Bosnian Serbs overwhelmingly tend to live in the Republika Srpska and Bosniaks and Bosnian Croats overwhelmingly tend to live in the Federation of Bosnia-Herzegovina. Furthermore, that fact is common knowledge in Bosnia, and our assumption is that if a student is informed that their partner in the experiment resides and studies in the Republic (in this case Banja Luka, the capital of the Republika Srpska and an overwhelmingly Serb-populated city) or the Federation (in this case Sarajevo, the capital of the Federation and an overwhelmingly Bosniak-populated city with a noticeable Bosnian Croat minority) s/he will instinctively draw a conclusion about ethnic identity. Since ethnic identity is a widely discussed and controversial subject in Bosnia, we chose not to ask our participants about their ethnic origin, nor try to explicitly inform students of the ethnic origin of their partner in the experiment. In addition, another reason not to make ethnic origin explicit was to avoid making participants aware of what specific aspect we were investigating in the experiment. Our belief is that if participants were fully aware that we were looking at the ethnic dimension, they might have behaved differently than they otherwise would have.

The sample will consist of young individuals raised primarily or completely in the post-war era. The sample was selected from the population of students in Banja Luka and Sarajevo. Some issues with a biased sample could exist since people self-opt into participation in the experiment, which was an unavoidable issue for recruiting participants. However, we deem that such bias would not be very great, as we believe a prime motivator for participation would be potential financial gain rather than any other (bias-causing) motivation.

### *Students as a sample for the experimental study*

Previous studies have centred on individuals who themselves have memories and experiences from the war (Håkansson & Sjöholm, 2007; Whitt & Wilson, 2007). Most other studies were conducted during a time when there was no adult population grown up entirely in the post-war era. Restricting the sample to young people offers a new insight into how only inheriting an indirect animosity towards other ethnic groups affects trust levels. Although the post-war Bosnians may well have good or bad experiences from members of different ethnicities, they have not directly experienced the underlying conditions behind today's ethnic segregation to the same extent as their elders. It also gives us a glimpse into the future, assuming that today's young Bosnians' trust levels will correlate with their future trust levels.

There are both issues and up-sides with exclusively using students in the sample. Firstly, they form a distinct part of the Bosnian population. Only one in four young Bosnians attend universities; doing so requires residing in an urban environment, some kind of academic prowess, and arguably some financial reserves with which to fund a higher education. Secondly, student life provides a different kind of socialization for students than might have otherwise taken place in absence of such higher education. No matter what reasons may lie behind the potential divergences between young students and other young people, the fact remains that such differences may exist.

### *Stages of the experiment*

The experiment consisted of three stages. First, students were asked to fill in an online form if they were interested in participating. Students who filled in the sign-up form were then randomly divided into different groups based on the university they attend and whether they were chosen to play with a person in the same university or the other university. Students from the four groups were paired with each other so that four equally sized groups of participant pairs existed. Each two students then belonged to one of the following groups: sender in Sarajevo and recipient in Sarajevo, sender Sarajevo and recipient in Banja Luka, sender in Banja Luka and recipient in Banja Luka, sender in Banja Luka and recipient in Sarajevo.

In the second stage, the randomly selected senders received an online form with instructions about the game and information that they were granted the right to collect a show-up fee of 10 KM (5 Euro) at a later point in time (See Appendix for further details of information provided to participants). They were informed that they could choose to send up to half of

the endowed show-up fee in an investment game where the money would double when it reached the recipient and, furthermore, that the recipient had the option of sending none, some or all of the money back. They were also informed that they could choose to send none, some or all of the other half of the show-up fee in a dictator game where the money also doubled when it reached the recipient, but with the added twist that the recipient would not have the option of sending any of the money back. They were also informed that the recipient would not see how much money the sender had sent in the dictator game and therefore it could not affect their decision in the second stage of the investment game. The sender then decided what amount he or she would like to send in the different games.

The sender was not supplied with any information about the recipient except whether he or she studied at the University of Banja Luka or the University of Sarajevo.

In the third stage the recipient received an online form containing information about what amount their assigned sender had sent, and that the amount had been doubled and that the recipient had the option of sending none, some or all of the money back. The recipient was asked to type how much he or she would like to send back to the original sender and, thus, implicitly how much he or she would like to keep. The recipient also received information that he or she could collect the remains from the investment game in addition to any amount that he or she might have received in the dictator game at a later point in time.

Similar to the sender, the recipient was not supplied with any information about the sender except whether he or she studied at the University of Banja Luka or the University of Sarajevo.

## **Results**

### ***Survey data results***

The survey data used is taken from the source material of *The Ties that Bind: Social Capital in Bosnia-Herzegovina* (UNDP, 2009). The survey asks the respondents to specify both their general trust in people and their trust in people from the same ethnicity and from different ethnicities.

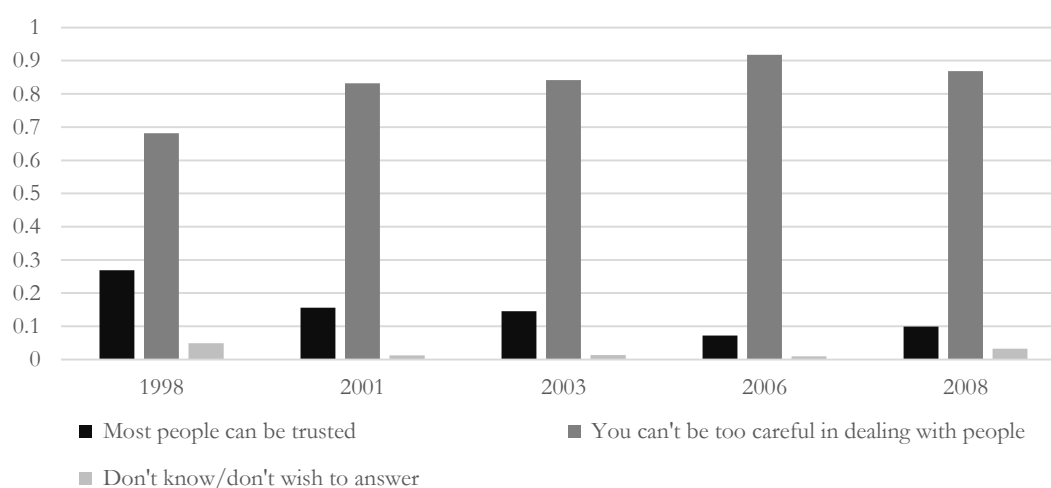
Several secondary sources, including the UNDP report, find that Bosnia has a low level of generalized social trust (Efendić et al., 2014; UNDP, 2009). In addition, trust is often highly particularized in favour of family and close friends rather than to society as a whole (UNDP, 2009). Indeed, the UNDP survey data shows that there are clear radii of trust in Bosnia,

which is in line with Fukuyama's theories (2001). That circle moves from 'core' to 'periphery'; from family, to close friends, to neighbours, to those of one's own ethnic group, and then lastly to those of other ethnicities. Each step towards the periphery is met with a sharp drop in trust. At the outer rings we find that 21.3% say that they would trust most or all members of their own ethnic group. That drops to a miniscule 11% for *other* ethnic groups (UNDP, 2009).

Examining the estimates of generalized trust in comparable countries, we find that Bosnia **does** place lower on the social trust ladder. For example, when asked whether or not most people could be trusted or distrusted, only 9.9% of Bosnians stated that they felt that most people could be trusted. Conversely, as many as 86.9% thought that you 'couldn't be too careful' when dealing with other people. We can compare this with Serbia and Slovenia, where 13.6% and 17.5% of the population, respectively felt they could trust most people, and where 75.4% and 78.9% respectively felt they could not. Looking at 2003 data from Croatia, trust levels are somewhat higher with 24% reporting that most people can be trusted and 76% said that you cannot be too careful in dealing with people (Štulhofer, 2004). What we see is that none of these three countries have particularly high levels of generalized social trust overall. In Sweden, a notable example of a high trust society, 65.2% of respondents answer that most people can be trusted, and that a mere 30.7% answer the opposite. We could also include a country like Bulgaria as a comparable country (with its similar level of economic development, shared Balkan history, etc.), where levels of generalized trust and distrust were 19.6% and 68.7% respectively (UNDP, 2009). Croatia, Serbia, Slovenia and Bulgaria are similar to Bosnia in most aspects excluding ethnic composition where Bosnia is more heterogeneous with no majority ethnicity. While Bosnia consists of almost 50% Bosniaks, 35% Serbs and 15% Croats; Croatia, Serbia, Bulgaria and Slovenia each have clear ethnic majorities of about 80 – 90% Croats, Serbs, Bulgarians or Slovenes respectively.

It also does not seem as if social trust has improved in the intervening years since the war. Rather, the level of social trust has actually gotten worse. Surveys from 1998, 2001, 2003, 2006 and 2008 (UNDP, 2009) show a steady deterioration in trust that only stabilizes in the last two surveys. This deterioration in trust levels is shown in Graph 1.

### Generalized trust levels over time



Graph 1. Generalized trust levels measured by the standard question proposed by the World Values Survey. Sources: World Values Survey, Balkan Analysis Group, UNDP/ORI, UNDP.

The UNDP data also contains information about individuals' trust in their own and other ethnicities within Bosnia. This kind of particularized trust is measured differently than generalized trust. Respondents are asked to answer whether they trust all, most, some or none of people of the same ethnicity and other ethnicities. A summary of particularized trust with respect to ethnicity is shown in Tables 1 and 2.

### Trust in the same ethnicity for different ethnic groups

| Trust in same ethnicity | Bosniaks | Serbs | Croats | Total |
|-------------------------|----------|-------|--------|-------|
| Trust all               | 20       | 12    | 9      | 41    |
| Trust most              | 124      | 83    | 66     | 273   |
| Trust some              | 436      | 338   | 165    | 939   |
| Trust none              | 18       | 14    | 59     | 91    |
| Total                   | 598      | 447   | 299    | 1,344 |

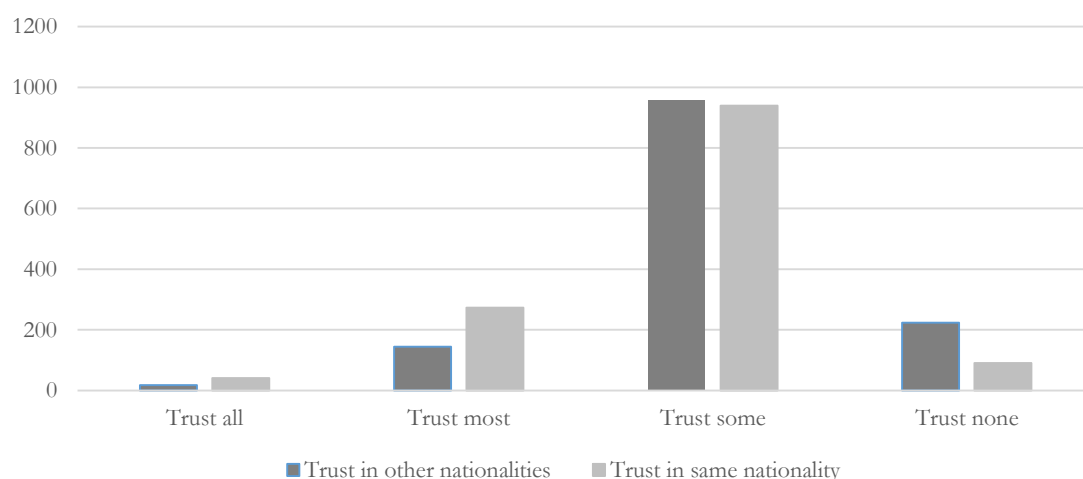
Table 1. Trust in people from the same nationality organized separately for the main ethnic/national groups. Note: Respondents neglecting to answer to question or choosing the option 'I don't know' are excluded from the table. Source: UNDP.

### Trust in the other ethnicities for different ethnic groups

| <i>Trust in other ethnicities</i> | <i>Bosniaks</i> | <i>Serbs</i> | <i>Croats</i> | <i>Total</i> |
|-----------------------------------|-----------------|--------------|---------------|--------------|
| <i>Trust all</i>                  | 9               | 5            | 4             | 18           |
| <i>Trust most</i>                 | 69              | 46           | 30            | 145          |
| <i>Trust some</i>                 | 454             | 337          | 166           | 957          |
| <i>Trust none</i>                 | 66              | 59           | 99            | 224          |
| <i>Total</i>                      | <i>598</i>      | <i>447</i>   | <i>299</i>    | <i>1,344</i> |

Table 2. Trust in people from the other nationalities organized separately for the main ethnic/national groups. Note: Respondents neglecting to answer to question or choosing the option 'I don't know' are excluded from the table. Source: UNDP.

### Difference trust in same and other nationalities

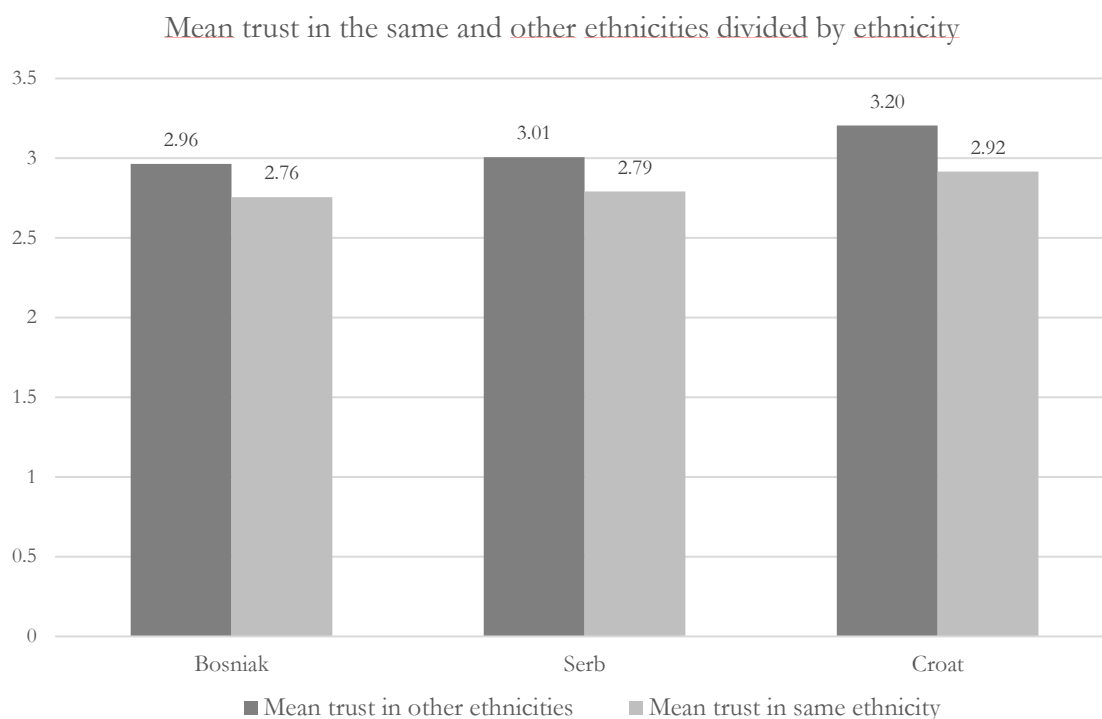


Graph 2. Shows the number of respondents selecting each alternative of trust for same and different nationalities. Source: UNDP.

As seen in Tables 1 and 2 and in Graph 2, the 'trust some' option remains largely unchanged when comparing answers for the same nationality and different nationalities. This option is also the most commonly picked by respondents and it is quite possible that this is the preferred answer of people unengaged in the question or with no specific preferences regarding trust. The option for 'Trust all' remains rare although it doubles when the question refers to people of the same nationality. The difference in average trust instead springs from options 2 and 4, 'Trust most' and 'Trust none' where respondents are much less likely to 'Trust most' people of a different nationality and much more likely (by a factor of roughly 2.5) to 'Trust none' of the people from a different nationality than those of the same.

Coding answers so that ‘Trust all’ = 1, ‘Trust most’ = 2, ‘Trust some’ = 3 and ‘Trust none’ = 4; allows us to analyse average and median trust and whether there is a statistically significant difference between trust in the same nationality and trust in other nationalities. Median trust is 3 or ‘Trust some’ for both groups whereas average trust is 3.03 (or roughly around ‘Trust some’ but slightly more towards ‘Trust none’) and 2.80 (or roughly around ‘Trust some’ but slightly more towards ‘Trust most’) for other ethnicities and the same ethnicity respectively. That is, average trust seems to be higher for the same nationality than for others. The difference between the two groups is statistically significant with a reported t-value of -15.81.

Looking at the three ethnic groups separately, as shown in Graph 3, the difference persists to approximately the same degree for all three groups. The difference is statistically significant also for the separated groups with t-values of -9.79 for Bosniaks, -9.01 for Serbs and -8.62 for Croats.



*Graph 3. Shows the mean levels of trust of people with the same ethnicity and other ethnicities, separately for each ethnic group. Respondents are given three alternatives: Trust all (1), Trust most (2), Trust some (3) and Trust none (4). Source: UNDP.*

The survey data seems to support the first hypothesis that particularized social trust is lower between Bosnians of different ethnicities than between Bosnians of the same ethnicity. In addition, the UNDP report shows us that generalized trust in Bosnia is remarkably low

compared to other comparable countries, with a mere 9.9% answering that they feel they can trust most people.

Since the majority of the UNDP data was collected in 2008 and mainly includes adult respondents (the youngest respondent being 16 years old), it is not possible to analyse only the post-war generation. Instead, we have opted to analyse the respondents who have undergone their education in the segregated post-Yugoslav system. All respondents who were six years old at the start of the war are assumed to have undergone a segregated education. This leaves a sample of 88 respondents out of a total of 1344 respondents. Out of those 88, approximately 27% answered that they would trust most or all people of their own ethnicity and about 11% said they would trust most or all people of other ethnicities. For the residual sample of older generations, the numbers are 23% and 12% respectively.

The statistics seem to point to an increasing in spread between trust in one's own ethnicity and other ethnicities for generations which have undergone their entire education within the segregated system. However, the sample size of younger generations is too small to be able to conclude that there is in fact a difference in trust levels between younger and older generations.

### ***Experimental results***

We divided the participants into two groups: A and B. The people in group A were to be the senders, and the people in group B the recipients. In total, 101 people were selected to be part of group A, and out of those, 67 participated in the game, which gave the experiment a reply rate of about 67%. Of these, 35 senders were located in Banja Luka and 32 senders were located in Sarajevo. Out of the 35 senders in Banja Luka, 15 had recipients in Banja Luka and 20 had recipients in Sarajevo. Out of the 32 senders in Sarajevo, 12 had recipients in Sarajevo and 20 had recipients in Banja Luka.

67 people were chosen to be part of group B. Out of these, 4 did not need to reply, as their senders had kept all the money for themselves. As for the rest, 54 out of 63 remaining recipients participated in the experiment, giving us a response rate of 85.7%. An English translation of the experiment form itself can be found in the Appendix.

All 168 members of groups A and B had initially expressed their interest in participating by filling out a sign-up form, and there was no discernible reason why anyone would be more or less likely to follow through on said sign-up. We estimate that the loss of participants can largely be explained by prospective participants' failure to check their e-mail before the

survey deadline. We base this judgement on our contact with various people who have experience in dealing with Bosnian students and who have experienced similar problems. This loss of participants should not bias the results if we assume that failure to check one's e-mail is not correlated with levels of trust, altruism or other similar relevant variables.

There are different ways in which we might try to analyse the experimental data in order to extract trust levels. We choose to interpret the data by trying to sort out 'trust' from the two parallel games. We can do this by defining the variable *trust\_s* as the amount sent in the investment game minus the amount sent in the dictator game. By looking at the variable *trust\_s* we can try to isolate the expression of trust in the game situation (Berg et al., 1995) and control for fixed effects.

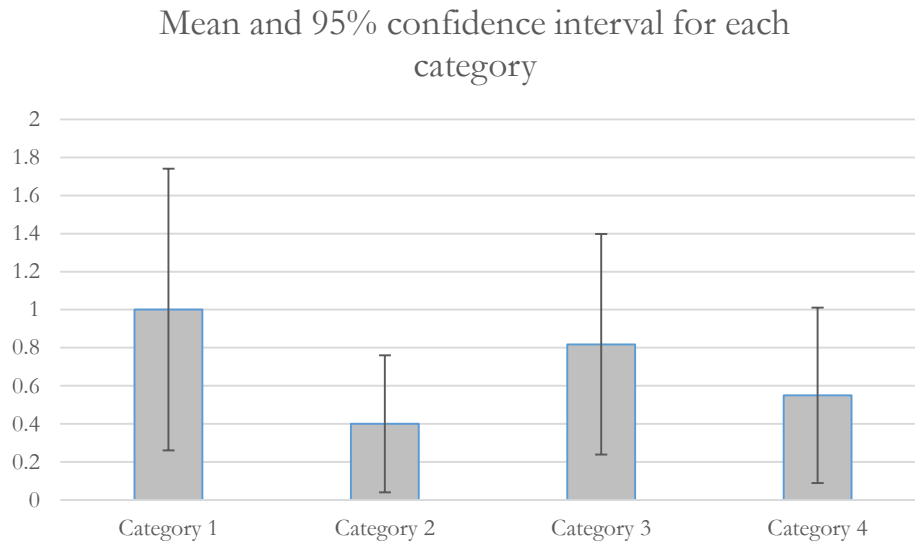
Only one respondent showed 'negative' trust, i.e. gave more in the dictator game than in the investment game. Our model does not allow negative levels of trust and therefore that observation was dropped from the analysis. A summary of the decisions made by the senders divided by categories of different combinations of sender and recipient can be seen in Table 3.

Trust measures for different categories of respondents

| Statistics for categories of respondents | Mean      | Standard deviation | min | max |
|------------------------------------------|-----------|--------------------|-----|-----|
| Summary for respondents in category 1    |           |                    |     |     |
| trust_s                                  | 1         | 1.46385            | 0   | 5   |
| N                                        | 15        |                    |     |     |
| Summary for respondents in category 2    |           |                    |     |     |
| trust_s                                  | 0.4       | 0.8207827          | 0   | 3   |
| N                                        | 20        |                    |     |     |
| Summary for respondents in category 3    |           |                    |     |     |
| trust_s                                  | 0.6666667 | 1.073087           | -1  | 3   |
| N                                        | 12        |                    |     |     |
| Summary for respondents in category 4    |           |                    |     |     |
| trust_s                                  | 0.55      | 1.050063           | 0   | 3   |
| N                                        | 20        |                    |     |     |

Table 3. Summary statistics for groups of respondents. Category 1: sender from Banja Luka, recipients from Banja Luka. Category 2: sender from Banja Luka, recipient from Sarajevo. Category 3: sender from Sarajevo, recipient from Sarajevo. Category 4: sender from Sarajevo, recipient from Banja Luka.

As shown in Graph 4 below, levels of trust are significantly above zero for all categories. The mean estimates also indicate that levels of trust are higher within universities than between, more so for Banja Luka than Sarajevo.



Graph 4. Shows the mean values expressing trust (or difference in money sent in the investment and dictator games) for category 1, 2, 3 and 4 and the 95% confidence interval for each category. Category 1: sender from Banja Luka, recipients from Banja Luka. Category 2: sender from Banja Luka, recipient from Sarajevo. Category 3: Sender from Sarajevo, recipient from Sarajevo. Category 4: sender from Sarajevo, recipient from Banja Luka.

To estimate whether there is a statistically significant difference in trust levels between senders with recipients in the same university and senders with recipients in the other university, we conduct a t-test. Although the estimates indicate that trust is higher within universities than between them, the difference is not statistically significant. Estimates for the t-test are shown in Tables 4 and 5.

***Estimate and t-test of difference in trust levels between and within universities (Sarajevo)***

|                     |              |
|---------------------|--------------|
| <i>Trust_s</i>      | 0.268 (0.70) |
| <i>Observations</i> | 31           |

Table 4. Chow-test and estimate for the difference in trust between and within universities (Sarajevo). *t* statistics in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

***Estimate and t-test of difference in trust levels between and within universities (Banja Luka)***

|                     |              |
|---------------------|--------------|
| <i>Trust_s</i>      | 0.600 (1.54) |
| <i>Observations</i> | 35           |

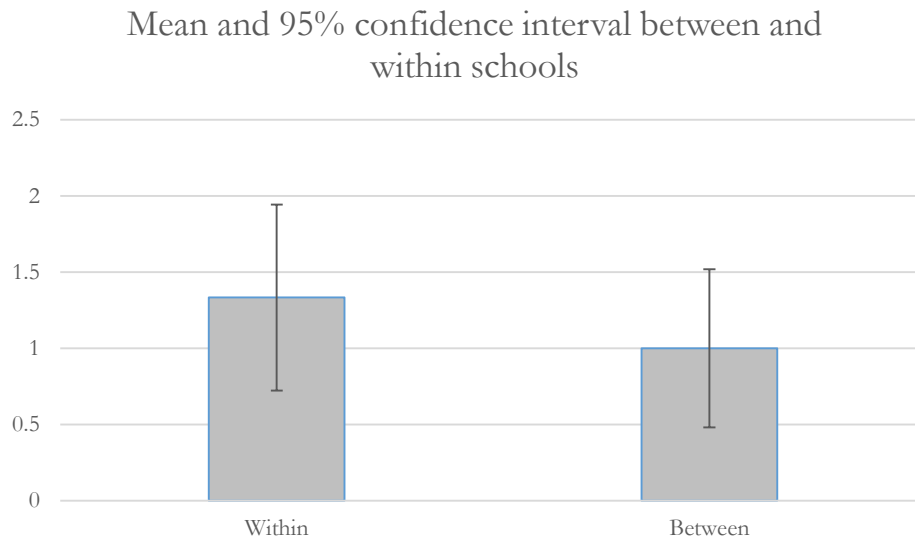
Table 5. Chow-test and estimate for the difference in trust between and within universities (Banja Luka). *t* statistics in parentheses \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

To find out whether the two schools have different characteristics, we run a Chow-test. The Chow-test cannot reject the null hypothesis that the two universities have the same characteristics, although there is risk of a type two error. Since we cannot reject the null that the samples have the same characteristics we also look at the pooled difference in trust between and within universities, regardless of the sender's university. In the pooled t-test, shown in Table 6, the t-value is higher but still too low to reject the null of no difference in trust between and within universities. However, the estimate points to a difference in trust although it is not statistically significant. The pooled estimates are shown in Graph 5.

***Estimate and t-test of difference in trust levels between and within universities (Pooled universities)***

|                     |              |
|---------------------|--------------|
| <i>Trust_s</i>      | 0.448 (1.66) |
| <i>Observations</i> | 66           |

Table 6. T-test and estimate for the difference in trust between and within universities (Pooled). *t* statistics in parentheses \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



Graph 5. Shows the mean values expressing trust (or difference in money sent in the investment and dictator games) between and within schools and the 95% confidence interval.

Looking at the summary statistics of money sent in the investment and the dictator game shown in Table 7, the most common combination is to send 5 in both the investment and dictator games. This corresponds to the surprisingly high fairness preferences in Bosnia found by Whitt & Wilson (2007). However, we find evidence not only of fairness preferences but a significant altruism expressed by giving away more than half of the endowed amount. The explanation for this apparent high level altruism cannot be trivially deduced from the data but has to be analysed more thoroughly.

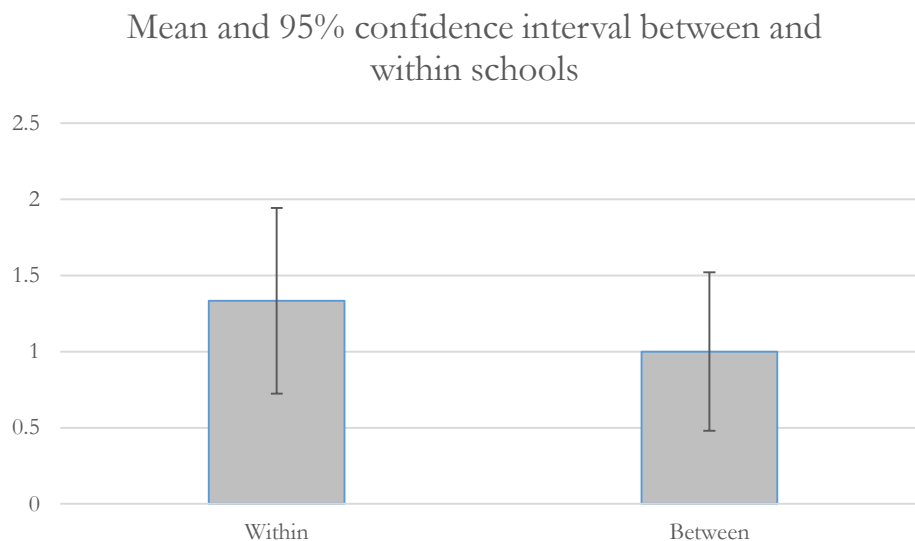
Summary of amounts sent in the two games

|                                       |              | <i>Amount sent in dictator game</i> |   |    |    |   |    | <i>Total</i> |
|---------------------------------------|--------------|-------------------------------------|---|----|----|---|----|--------------|
|                                       |              | 0                                   | 1 | 2  | 3  | 4 | 5  |              |
| <i>Amount sent in investment game</i> | 0            | 4                                   | 0 | 0  | 0  | 0 | 0  | 4            |
|                                       | 1            | 0                                   | 2 | 0  | 0  | 0 | 0  | 2            |
|                                       | 2            | 0                                   | 2 | 3  | 0  | 0 | 0  | 5            |
|                                       | 3            | 3                                   | 1 | 4  | 3  | 0 | 0  | 11           |
|                                       | 4            | 0                                   | 0 | 2  | 4  | 2 | 0  | 8            |
|                                       | 5            | 1                                   | 0 | 2  | 3  | 1 | 29 | 36           |
|                                       | <i>Total</i> | 8                                   | 5 | 11 | 10 | 3 | 29 | 66           |

Table 7. Summary table of amount sent by senders in dictator and investment games.

Indeed, the number of senders sending 5 in both the dictator and the investment games is as high as 29 senders out of 67. This presents a problem since, according to our model for calculating trust levels, respondents who always send the maximum amount in both games are treated as having no trust in the respondent. This is not necessarily the case in reality. For example, if the respondent is indiscriminately maximizing the social payoff they have an incentive to send the maximum amount (since it is doubled) regardless of their trust in the recipient. It might also indicate a very high willingness to cooperate, which implies a high level of trust.

In order to avoid this issue we made a separate analysis where senders who sent 5 in both games were dropped from the sample. Analysing the results without including the senders giving 5 in both games points us in the same direction but with lower significance, as shown in Graph 6.



*Graph 6. Shows the mean values expressing trust (or difference in money sent in the investment and dictator games) between and within schools and the 95% confidence interval. Sample excluding senders sending 5 in both games.*

Finally, when we look at the amount returned from the recipient to the initial sender in the investment game we see that the recipients were relatively generous when sending back money. The average recipient received slightly below 8 KM after the amount sent had been doubled. The average amount sent back to the initial sender was slightly below 5 KM, which

is *more* than half of the average amount received, resulting in a net gain for the average sender. This is indicative of relatively high levels of trustworthiness.

#### Summary of recipients' received and re-sent amounts

|                                       |              | <i>Amount received in investment game</i> |          |          |          |          |           | <i>Total</i> |
|---------------------------------------|--------------|-------------------------------------------|----------|----------|----------|----------|-----------|--------------|
|                                       |              | <b>0</b>                                  | <b>2</b> | <b>4</b> | <b>6</b> | <b>8</b> | <b>10</b> |              |
| <i>Amount sent in investment game</i> | <b>0</b>     | 4                                         | 0        | 0        | 0        | 0        | 1         | <b>5</b>     |
|                                       | <b>1</b>     | 0                                         | 0        | 0        | 0        | 0        | 0         | <b>0</b>     |
|                                       | <b>2</b>     | 0                                         | 2        | 3        | 0        | 0        | 1         | <b>6</b>     |
|                                       | <b>3</b>     | 0                                         | 0        | 0        | 3        | 0        | 0         | <b>3</b>     |
|                                       | <b>4</b>     | 0                                         | 0        | 2        | 3        | 4        | 1         | <b>10</b>    |
|                                       | <b>5</b>     | 0                                         | 0        | 0        | 1        | 0        | 17        | <b>18</b>    |
|                                       | <b>6</b>     | 0                                         | 0        | 0        | 1        | 1        | 4         | <b>6</b>     |
|                                       | <b>7</b>     | 0                                         | 0        | 0        | 0        | 1        | 0         | <b>1</b>     |
|                                       | <b>8</b>     | 0                                         | 0        | 0        | 0        | 1        | 1         | <b>2</b>     |
|                                       | <b>9</b>     | 0                                         | 0        | 0        | 0        | 0        | 2         | <b>2</b>     |
|                                       | <b>10</b>    | 0                                         | 0        | 0        | 0        | 0        | 4         | <b>4</b>     |
|                                       | <b>Total</b> | <b>4</b>                                  | <b>2</b> | <b>5</b> | <b>8</b> | <b>7</b> | <b>31</b> | <b>57</b>    |

Table 4. Summary table on amount received and sent by recipients in investment games.

#### *Issues with experimental data collection*

One of the main issues with our collection of experimental data was related to the number of participants we were able to amass for the experiment. Doing our thesis work in a foreign country made it a challenge to find the sample necessary to scale the experiment to the size we desired. This in turn made it more difficult to minimize the probability of type two errors, which is an unfortunate limitation of our study and which we have to be wary of. However, we believe that our collected sample is sufficient to conduct a worthwhile analysis of the results.

#### **Analysis and discussion**

##### *Analysis of survey data results*

A question which is posed in the introduction is: ‘do I trust a person I am not greatly familiar with to treat me fairly? Do I trust him to uphold our agreements, deliver his end of whatever

bargain we have struck, or at the very least trust him not to purposefully act to harm me and mine?’ The Bosnian UNDP survey data would definitively answer this with a clear ‘No, I do not.’

As we found earlier, Croatia, Serbia, Bulgaria and Slovenia have noticeably higher levels of trust, and, perhaps more importantly, lower levels of **distrust** than Bosnia. In addition, according to Rothstein and Stolle (2007) institutions like those in Bosnia might well have a negative effect on generalized trust in themselves. A complex and corrupt system with self-serving officials catering only to themselves or their affiliated ethnic cohort is by no means a sound basis for building a high-trust society. This would also affect the comparison with similar countries like Croatia, Serbia, Slovenia and Bulgaria which have much less complex institutions than Bosnia. The underlying reason for this setup, however, can be traced back to the ethnic heterogeneity which characterises Bosnia as a country.

Institutional explanations for low levels of generalized trust might also shed some light on the centrifugal tendencies we find in Bosnia in the form of a deteriorating trust levels over time. As the institutions put in place by the Dayton agreement become more entrenched, and reforms to restructure them are stalled, the more corrupt and dysfunctional they become. This then extends to affect trust in those institutions as well as the generalized trust within the country in a downwards, centrifugal spiral. The forces of centrifugality thus spur the separation of Bosnia, its population and its institutions.

We have also found evidence in the survey data for significant differences in trust between the ethnic groups. Indeed, amongst respondents 21.3% reply that they would trust most or all members of their own ethnic group. However, that drops to a lowly 11% for **other** ethnic groups (UNDP, 2009). Even if trust in one’s own ethnic group is not high to begin with, the drop in trust by more than 10 percentage points is sizeable.

Lastly, levels of trust are **lower** amongst young people than in the older cohorts (who, after all, lived through the war as adults) (Efendić et al., 2014). That fact in itself might bode ill for the future viability and development of Bosnia as a country. UNDP survey data does not show the same support for lower trust levels among young people but does show indications of a larger difference between trust in the same and other ethnicities for young people compared to their older compatriots. Indeed, the decline in social trust has been mirrored by a troubled economic development in the years since the war, with growing levels of inequality, un- and underemployment, and economic fragmentation of its economic space (especially across entities and cantons). A low level of trust furthermore implies that

successful political mobilization of the population to change the status quo becomes more unlikely. Caesar's adage of 'Divide and conquer' has seemingly been amply applied in Bosnia by its political elites, who monopolize its political powers and, by extension, its economic destiny.

### ***Analysis of experimental results***

There are, however, indications of the opposite case as well. This thesis added to the existing body of knowledge by conducting an experiment involving Bosnian students. The results of this experiment can serve to nuance the overwhelmingly negative image of social trust in Bosnia.

Our experiment is constructed around observing levels of trust, cooperation and altruism in the student population, and does this with dictator and investment games. What we find is that there is a large portion of senders who display an exceedingly high level of altruism and, arguably, trust towards their recipients. Indeed, out of 67 participating senders, 29 sent the maximum possible amount in *both* investment and dictator games. That is a hefty 43.2% of the sample. According to our model for measuring trust, that would imply that no trust exists between sender and recipient, as we modelled trust as the difference between amounts sent in the investment- and dictator games. Individuals who send the maximum amount in both games thus display 'zero' trust in their counterpart. Such an interpretation might be somewhat lacking though. It would be fairly unlikely that individuals would show significant levels of altruism without any corresponding trust; in the end, it might say more about limitations of the method than any underlying levels of trust in the student population.

Even amongst senders who do not send the maximum possible, altruistic levels are still fairly high. Only 24 senders send less than 3 in the dictator game, and only 8 send nothing at all. What is even more interesting is the behaviour we see from the recipients of the game. Since this is a one-shot game, they have no real incentive to ever actually send any money back to the senders. However, that is not at all what we see. In fact, all but one recipient *sent money back* to his or her sender. Even more intriguing, with the exception of two senders, those who send back money almost always send back *at least* half of it. In several cases the portion sent back is even bigger, including 9 recipients who sent all their investing gains back. This behaviour seems unrelated to what amount was sent to them in the first place. Even if the sender only sends, say, 2 KM over to the recipient (which is doubled to 4 KM on arrival), the recipient will usually send at least 2 KM back. In total there are three exceptions to this behaviour is, of course, the one *Homo Economicus* recipient who chose to keep all his or her

gains for him or herself and two other who received 10KM but failed to send at least 5KM back.

Looking at the first hypothesis, the experimental results align with the results from the survey data in that both show coefficients indicating that trust is lower for other ethnicities than for one's own. However, the null hypothesis of no difference between ethnicities cannot be rejected for the experimental data. It is not unlikely that this is due to the small sample size and the failure to reject the null might in fact be a type two error. Therefore, similar studies should be conducted with an adjusted sample size to find if experimental data fully supports survey data.

The experimental data contains a sample of students collected in 2016, most of whom can be assumed to have been born in the 1990s and have no personal experience of the war. They have also grown up entirely in the segregated school system. According to Alexander and Christia (2011), growing up in the segregated school would negatively impact one's trust in other ethnicities. From our experimental data it is difficult to see whether people belonging to this post-war generation are more or less trusting towards other ethnicities compared to their own. However, it is clear that levels of trustworthiness are higher than what the survey data indicates (where answers about trust levels can be interpreted as also containing information about trustworthiness). Although we do not know levels of altruism specifically for older generations it should be noted that those levels are remarkably high in the experimental data for the post-war generation.

Summarising the results, we find that survey data shows some support for the assumption of low levels of generalized trust within Bosnia in relation to comparable countries with less ethnic heterogeneity. However, it is not apparent that this can be directly explained by the country's ethnic composition. Instead, secondary effects of ethnicity specific institutions and their effect on the institutional climate within Bosnia could carry some explanatory power, also for generalized trust levels. Experimental data, although not directly comparable, shows a somewhat different story. Approximately 62 % of the respondents that did not choose to send the maximum amount in both games express some level of trust in the recipient. This stands in stark contrast to the response to the WVS survey question where 86.9% agree that you cannot be too careful in dealing with people. It is also apparently higher than particularized trust levels for all groups except family and close friends. The experimental data includes only the post-war generations whereas the survey data includes older generations. A brief look at the results would perhaps suggest that trust has increased in

younger generations disputing Efendić et al.'s (2014) conclusion about trust being lower for younger generations. The experimental data is also more likely to show an indication of particularized trust rather than generalized trust since participants know that the recipient is a student in a Bosnian university, whether in Banja Luka or Sarajevo.

Looking at the first hypothesis, survey data rejects the null hypothesis of no difference in trust levels between one's own ethnicity and other ethnicities. There is a significantly larger level of trust in people from one's own ethnicity than people from other ethnicities. The experimental data lends some weak support for this rejection by finding coefficients indicating the same relationship between trust in the same and other ethnicities, but the null cannot be rejected through the experimental data alone, possibly as a result of type two error due to a small sample size.

Finally, when examining the second hypothesis we see some interesting results. Although the survey data does not catch the post-war generation perfectly, we see some indications that people who have largely grown up in the segregated system express a wider gap in trust between one's own and other ethnicities. However, the sample of people belonging to this category is too low to draw any strong conclusions from the survey data. The experimental data only includes participants who belong to the post-war generation and gives us additional information for answering the second hypothesis. What we see is the same tendencies as in the survey data, namely that trust is lower in people from other ethnicities than in one's own. However, the difference is not significant and we do not find support for the hypothesis that trust differences should be higher for younger generations. In addition, the altruism levels we observe, both in the dictator game and in the second stage of the investment game (where recipients send money back to the initial sender) are remarkably high. This contradicts what is predicted in the second hypothesis and indicates that perhaps time can play an important role for reconciliation even in an increasingly segregated system.

### ***Theoretical reflections***

The three main theoretical frameworks we use are those relating to *Homo Economicus*, the model developed by Zak and Knack (2001), as well as the theory based on centrifugal and reconciliatory forces adapted from Meier (2008) and Kreisberg (2007). *Homo Economicus* theory postulates that people's behaviour can be modelled by assuming that they act according to a certain rational behavioural pattern and set of initial premises. Zak and Knack's theory, on the other hand, contains a framework for the determinants of trust between individuals, which they argue is heavily influenced by their social, economic and

genetic proximity. Lastly, the centrifugality and reconciliation theory emphasises the endogenous trajectories of social division or unity (and therefore social trust) in a society. This, it argues, can provide a theoretical explanation for the pathway of generalized social trust levels in Bosnia.

What we find fairly quickly is that the classical *Homo Economicus* conceptualization of man is largely unable to explain the observed behaviour in our sample, which is what we might have expected. Indeed, only a few respondents decided to keep all of their sign-up fee for themselves (which *Homo Economicus* theories would predict that everyone would do). Furthermore, second-stage respondents – the recipients – show a similarly low level of *Homo Economicus* behaviour. We find that there is only a single recipient who sent nothing back, and only three (including the recipient who sent nothing back) who sent less than half.

However, that low level of ‘selfish’ participants is somewhat in line with the findings of the Japanese study by Yamagishi et al. (2014), where around 7% of participants had characteristics similar to *Homo Economicus*, although there are not nearly as many quasi-*Homo Economicus* in our study as there are in the Japanese study. In addition, in the Bosnian student sample the proportion of *Homo Economicus* participants is lower than it seems to be in the Japanese sample.

The existence of at least a few *Homo Economicus* might partially validate the theory in the sense that a small minority of people conform to such behaviour, but that the rest do not. However, in reality these individuals might play a large role in society, and thus influence national development, as they exhibit certain behavioural traits which could enable ruthless career climbing and running roughshod over other people.

Overall, the theoretical model by Zak and Knack (2001) proves to be much better suited to provide explanations for the observed outcomes. Findings in the UNDP report (2009), amongst others, go hand in hand with the findings from their model. In the model, the ability of people to trust each other is heavily influenced by their social and genetic proximity. That is largely mirrored in Bosnia, where the same factor – proximity between people (social and genetic) – plays a deciding role for how much trust is established between two individuals. Where that distance is large, such as between peoples of different ethnicities in different parts of the country, trust will be low, often by a large margin. Where the distance is small, such as in families, trust will be much higher.

Furthermore, the centrifugality and reconciliation theory can give us a particular insight into the progression of generalized social trust in Bosnia since the war. What we have found in the UNDP data is that it has steadily been decreasing in the last twenty years. Tying this to the ethnic heterogeneity and segregation, we find that centrifugal forces have played a significant role in (negative) development of Bosnian generalized social trust. Seemingly, forces of centrifugality have pushed the population further towards atomisation and division – in essence, pushing them further and further away on the Zak and Knack (2001) composite index scale.

Evaluating our experimental findings in the light of these two theories can help draw useful conclusions about the potential bridging of differences between people in the student body portion of the population. In Zak and Knack (2001) each individual was assigned a certain ‘position’ on a composite index of social and genetic factors, and the same would apply to students.

One might have predicted an outcome in trust and altruism similar to what was found in the population as a whole in surveys since the war. That, however, was not what we found. Instead, there is a significant level of altruism and, arguably, unconditional cooperative behaviour for a near-majority of senders – with high levels of altruistic behaviour and willingness to cooperate in the rest of the sample as well. That might imply that students perceive themselves as, in general, closer to each other on the composite index spectrum than participants in earlier surveys – which would influence their actions in regards to each other. It would also imply that the forces of reconciliation also come into play in the ethnically heterogeneous, segregated Bosnian society. Reconciliatory behaviour, such as altruism and unconditional cooperation, in the experiment imply that the downwards spiral of generalized trust could be stopped if such behaviour is nurtured and rewarded over time.

Unsurprisingly, the results tell us that ethnic heterogeneity in combination with widespread segregation seem to have a negative impact on generalized trust as well as increase the gap in particularized trust within and between ethnicities. Centrifugal and segregating forces seem to erode a society’s trust over time, and is worsened if institutional effectiveness is also low. However, according to our study, the social memory of a society can be relatively short. The first post-conflict generation have increased levels of altruism and signs of increasing levels of inter-ethnic trust. This suggests that reconciliatory forces are strong and act in opposition to segregation and centrifugal forces. Nonetheless, segregation serves as a means of cementing group division and centrifugality within the society.

## Conclusion

Our analysis has found dual conclusions on the subject of social trust in Bosnia. On the one hand, analysis of available UNDP survey data supports the assumption that Bosnia has lower generalized trust levels than comparable countries with less ethnic heterogeneity. In the former Yugoslav republics of Slovenia, Croatia and Serbia, generalized trust levels are higher than in Bosnia as are they in, for example, Bulgaria. The five countries have a similar history as either parts of former Yugoslavia or with a similar Balkan- and communist history. Three of the other four countries have been engaged in wars similar to, albeit not as severe as, the war in Bosnia since the dissolution of Yugoslavia. The third, Bulgaria, has experienced several traumatizing wars and upheavals in the last century (like the other four). Despite that, trust levels are on a higher level in those countries than they are in Bosnia.

Furthermore, the UNDP survey data supports the hypothesis that trust between individuals of different ethnic groups are lower than trust between individuals of the same ethnic group. We find a statistically significant difference in trust for people of the same ethnicity and of other ethnicities in Bosnia where trust is higher for people of the same ethnicity than for people of different ethnicities. This difference holds true for all three main ethnic groups.

The UNDP survey data does not provide a sufficient basis for rejection or support of the hypothesis that the post-war generation show a larger disparity between trust and altruism in the same and other ethnicities since it does not include data from post-war generations. What the data does imply is that young generations grown up in the segregated school system have larger or similar differences in trust between their own and other ethnicities as their older compatriots.

On the other hand, results from our own experimental data tells a somewhat different story. We observe significant levels of altruism and unconditional cooperation, as well as significant levels of trust. Arguably, this would imply that generalized trust need not necessarily be lower, in practice, in the Bosnian population, or at the very least in the young post-war segment of the population.

In our sample we do not find support for the difference in trust between and within ethnic groups in an experimental setting and thereby no support for an increased disparity in trust within and between ethnicities for the younger post-war generation. Although the estimates point in the same direction as the survey data, results are not statistically significant. Indeed, part of our empirical conclusions on trust stems from the fact that people have tended to be *more* altruistic across entity lines (from Banja Luka to Sarajevo or the other way around) than

within (from Banja Luka to Banja Luka and Sarajevo to Sarajevo). Since we calculate trust according to the previously established way of taking amounts sent in the investment game minus what the same sender sent in the dictator game, we might interpret higher altruistic levels as lower levels of trust, rather than, for example, mere an expression of unconditional cooperation and a desire to achieve better social outcomes.

The observed altruism stands in stark contrast to the second hypothesis where increased centrifugality through segregation was believed to increase divisions in the population, and thereby decrease trust and altruism levels between ethnicities. From the data it seems as if time heals some wounds. We argue that it is possible that the post-war generations have been able to reconcile with their respective adversaries to larger extent than their older compatriots.

What this shows us is that a country's ability to overcome even a gruesome ethnic civil war can be remarkable. Defying a lifetime of segregation, our research indicates that young Bosnians seem to be more forgiving towards other ethnicities than older generations grown up in the integrated Yugoslavia. There are, of course, still issues. Progress in Bosnia is hindered by poor institutions and a stalled governmental system. Generalized trust levels are low and particularized trust is skewed towards one's own ethnicity. But the overall signs are, in contrast to what previous studies have found (Efendić et al.'s, 2014), promising. Increased cross-ethnic altruism is an encouraging sign of more to follow in the form of improved cross-ethnic cooperation and trust.

The wider conclusion this thesis would draw for countries with a high degree of ethnic heterogeneity *and* segregation is that those two phenomena combined contribute to lower levels of trust – but that ethnic heterogeneity might be bridgeable if other social factors contribute towards a social homogenization as a counterweight. We can relate this to both the model by Zak and Knack (2001) and the theory adapted from Meier (2008) and Kreisberg (2007). A bridging of an ethnic division by social means is akin to pushing together individuals on Zak and Knack's composite index, whilst those social means used to overcome division are examples of the forces of reconciliation pushing towards unity in the population.

On a final note, it seems that when the basis for division and segregation (such as atrocities committed during wars, and the political aftermath thereof) start to become increasingly distant history rather than recent past, social animosity can start to decline. As such, various

kinds of ethnic heterogeneities do not necessarily doom a country to perpetually low levels of social trust.

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## Appendix

We used three different surveys for collecting answers from the participants in the experiment. The appendix contains the English translation of the surveys that were distributed in Bosnian. The Bosnian version of the surveys are not included in the appendix but are available on request. Surveys were modified slightly to fit respondents from different universities with different counterparts and to tailor specific surveys for specific amounts sent.

### *Sign-up form*

Sign up

Please fill in this form if you are interested in participating in the experiment. Participants of the experiments will be randomly divided into two groups, A and B. Group A will receive a show up fee of 10 BAM that can be collected at a later point in time. Group B will also have an opportunity to earn money from the experiment, also to be picked up at a later point in time. More instructions will follow if you are interested in participating. The experiment will take about 20 minutes and can be done from your own computer at any time during the day of the experiment.

\*Required

Name \*

Your answer

E-mail address \*

Your answer

What university do you attend?

University of Banja Luka

University of Sarajevo

I do not attend university

Other

I would like to participate in the experiment \*

Yes

No

## ***Survey – sender***

### Experiment

In this experiment you will be paired with a different person from the University of X. You will not be told who this person is either during or after the experiment. You have randomly been selected to be the sender in this experiment, and are thereby granted the right to a (combined) show-up fee of 10 KM.

\*Required

### Experiment 1

The sender (you) will receive 5 KM as a show-up fee for participating in this experiment. You now have an opportunity to send some, all or none of the show-up fee to the recipient at the University of X. Each KM sent to the person in X will be doubled. For example, if you send 2 KM, the other person in X will receive 4 KM. If you send 5 KM, the person in X will receive 10 KM. The recipient in X will then decide how much money to send back to you and how much money to keep.

The remainder of these instructions will explain exactly how the experiment is run. This experiment is structured so that only the experimenters will know the personal decision of the participants. Since your decision is private we ask you not to tell anyone your decision either during or after the experiment.

The experiment is conducted as follows: By selecting one of the options in this survey, you choose the amount to send on to recipient in X. The recipient will be informed of your decision, but the two of you will remain completely anonymous to each other. The recipient then chooses whether to send back any amount to you. You will be informed about the amount the recipient sent back when collecting your earnings.

You collect your earnings by showing up at XX on the XX with sufficient proof of your identity in the form of a photo ID or similar. Regardless of whether you choose to send some of your show-up fee to the other person in X or not, you collect your earnings at the same point in time.

Select the amount you would like to send to the other person in X (Experiment 1): \*

## Experiment 2

In the second experiment, you also receive 5 KM as a show-up fee for participating in the experiment. You now have an opportunity to send some, all or none of the show-up fee to the recipient at the University of X. Each KM sent to the person in X will be doubled. For example, if the sender sends 2 KM the other person in X will receive 4 KM. If the sender sends 5 KM the person in X will receive 10 KM. The recipient will NOT be able to send back any money to you.

The second experiment is conducted as follows: By selecting one of the options in this survey you choose the amount that to send to recipient in X. The recipient will be informed of the your decision to send on a certain amount, but only after the experiment is finished. The recipient then keeps the amount sent from you. As in Experiment 1, the two of you will remain completely anonymous from each other.

You collect your earnings by showing up at XX on the XX with sufficient proof of your identity in the form of a photo ID or similar. Regardless of whether you choose to send some of your show-up fee to the other person in X or not, you collect your earnings at the same point in time.

Select the amount you would like to send on to the other person in X (Experiment 2): \*

## ***Survey – recipient***

### Experiment

In this experiment you will be paired with a different person from the University of X. You will not be told who this person is either during or after the experiment. You have randomly been selected to be the recipient in this experiment.

\*Required

### Experiment 1

The sender will receive 5 KM as a show up fee for participating in this experiment. He or she now has an opportunity to send some, all or none of the show-up fee to the recipient (you). Each KM sent to you will be doubled. For example, if the sender sends 2 KM, you

will receive 4 KM. If the sender sends 5 KM, you will receive 10 KM. You will then decide how much money to send back to the sender and how much money to keep.

The remainder of these instructions will explain exactly how the experiment is run. This experiment is structured so that only the experimenters will know the personal decision of the participants. Since your decision is private we ask you not to tell anyone your decision either during or after the experiment.

The experiment is conducted as follows: By selecting one of the options available to him or her, the sender chooses the amount to send on to you. You will be informed of the sender's decision, but the two of you will remain completely anonymous from each other. You then choose whether to send back any amount to the sender. The sender will be informed about the amount you sent back when he or she is collecting his or her earnings.

You collect your earnings by showing up at XX on the XX with sufficient proof of your identity in the form of a photo ID or similar.

A sender in X sent you XX KM. This amount is now doubled to 2XX KM. You cannot send back more than 2XX KM. Select the amount you would like to send back to the other person in X (the rest of the money will be yours to keep): \*

## Experiment 2

The sender also decides whether to send some amount (between 0 and 10 KM) to you that you do not have the option of sending back. The sum sent in this experiment will be revealed when you collect your earnings from Experiment 1, and will be collected at the same time.