Economic Inequality among Entrepreneurs *

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Abstract

Purpose: Drawing from social psychology and economics, I propose several mechanisms that may affect ownership stakes among entrepreneurs, including norms of distributive justice, negotiation constraints, and network constraints. The processes are explored empirically for a representative data set of entrepreneurial teams.

Methodology/approach: Between 1998 and 2000, entrepreneurial teams were sampled from the U.S. population for the Panel Study of Entrepreneurial Dynamics. I analyze the distribution of ownership stakes at both the individual and group levels.

Findings: The results suggest that principles of macrojustice, affecting the distribution of resources in teams as a whole, deviate considerably from principles of microjustice, affecting the resources received by individual entrepreneurs. While aggregate inequality increases in teams that have a diverse set of members, the effect is not reducible to discrimination on the basis of individual status characteristics. Instead, the relational demography of teams – characterized in terms of the degree of closeness in network ties and homogeneity in demographic attributes -- serves as a uniquely social predictor of between-group variation in economic inequality.

Originality/value of the paper: Empirical research on inequality has paid little attention to the process of group exchange in organizational startups, where entrepreneurs pool resources and skills in return for uncertain or indirect payoffs. This paper offers both theoretical frameworks and empirical analyses to shed light on economic inequality among entrepreneurs.

Key Words: Entrepreneurs, Inequality, Business Startups, Justice [Research Paper].
Introduction

Although entrepreneurship is commonly viewed as a path to upward mobility in capitalist societies, remarkably little scholarship has addressed inequality among entrepreneurs themselves. Perhaps because the initiation of new business ventures is perceived as a risky, even foolish, endeavor (cf. Xu and Ruef, 2004; Aldrich and Fiol, 1994), entrepreneurs are seen as entitled to receive whatever profits – or incur whatever losses – such ventures may generate. Governments, unions, and academics monitor inequality and human resource practices in larger, established enterprises (e.g. Kalleberg et al., 1996; Tomaskovic-Devey et al., 2006; Kalev et al., 2006), but collect little systematic data on ownerships shares or incomes in business startups. As a result, most of what we know concerning the link between entrepreneurship and inequality is at an aggregate level, relating inequality (or norms of egalitarianism) in nation states to their rates of entrepreneurial activity (Lippmann et al., 2005; Siegel et al., 2007). The mechanisms that generate inequality between entrepreneurs remain largely uncharted.

This empirical gap is surprising when one considers the earliest sociological treatment of entrepreneurship, Max Weber’s (2003 [1889]) J.D. dissertation on the History of Commercial Partnerships. Weber’s primary thrust in this work was a comparative analysis of commercial law, with an emphasis on its influence in the creation of partnerships among medieval entrepreneurs (see Ruef and Lounsbury, 2007 for a discussion). In surveying the differences between various forms of partnerships, Weber also speculated about the effects that these organizational forms might hold for inequality among participating entrepreneurs. For instance, whereas the limited partnership “derived from an association of people who were economically and, as one could say, socially unequal”, the institution of joint liability “developed out of associations among … people who had an equal right to dispose of property” (Weber, 2003: 146-147). Weber thus raised the possibility that different institutional contexts had distinct implications for stratification among groups of entrepreneurs.
Drawing on contemporary social science research, this chapter seeks to develop two basic insights from Weber’s path-breaking work. First, entrepreneurial partnerships or teams are natural sites for understanding inequality among entrepreneurs. Whereas analyses emphasizing differences in economic outcomes between entrepreneurial ventures must account for variance in organizational structure, industry, regional infrastructure, and even dumb luck (Aldrich and Kenworthy, 1999), analyses emphasizing economic inequality within entrepreneurial ventures inherently control for these features of organizational performance. Second, the mechanisms governing the distribution of entrepreneurial rewards must be understood in a social context of identities, norms, relationships, and legal frameworks. At the individual level, the distinctive status characteristics of entrepreneurs and the norms of justice they adopt will affect their degree of egalitarianism in distributing rewards. At the societal level, pro-social behavior in partnerships may also be sensitive to broader differences in political integration and the rule of law (Henrich et al., 2004).

To develop this argument, I begin by reviewing some of the relevant literature in sociology and economics regarding the distribution of goods within dyads and small groups. For social psychologists, this issue has historically been posed as a problem of distributive justice (Homans, 1961; Jasso, 1980; Hegtvedt, 2005). A number of efforts have sought to understand the norms guiding the distribution of goods within formal organizations (Randall and Mueller, 1995; Roberson and Colquitt, 2005), but this framework has yet to be applied to entrepreneurial groups. Among economists and economic anthropologists, recent experimental work has emphasized the allocation of rewards within a game-theoretic approach (e.g. Camerer, 2003; Henrich et al., 2004). Findings from two experimental games – the ultimatum game (UG) and public goods game (PGG) – are of special interest, since they offer rough approximations of the exchange processes leading to the distribution of ownership stakes within entrepreneurial partnerships. These results are complemented by social exchange experiments (Molm et al., 1999), which offer insights into the effect of entrepreneurial networks on the differential allocation of rewards.
Following these general frameworks for understanding inequality within groups, I turn to the empirical evidence concerning economic inequality among teams of entrepreneurs. At a micro level, this entails the identification of mechanisms that assign rewards or shares to individual entrepreneurs; at an aggregate level, this entails consideration of the mechanisms that specify the overall shape of the reward distribution within entrepreneurial ventures (i.e. whether profits generally tend to be distributed on an egalitarian basis). While the purpose of this section is not to offer a definitive empirical test of the mechanisms that may generate entrepreneurial inequality, I review some preliminary evidence, based on an analysis of a nationally representative sample of business founding teams in the United States (see also Ruef in press). My discussion suggests that the drivers of entrepreneurial ownership shares at the individual level – especially, norms of equity – are largely separated from comparable mechanisms at the group level. Similar differences are evident in comparing group level inequality within an advanced industrial society (in this case, the United States) with the inequality observed in entrepreneurial exchange in a variety of pre-capitalist societies. The analysis of inequality among entrepreneurs thus requires careful attention to the links and disconnects between individual, organizational, and societal levels.

A more general implication for the sociology of work follows from this insight. Consistent with the ‘new structuralism’ that emerged three decades ago (e.g. Baron and Bielby, 1980; Kalleberg and Berg, 1987), the rewards given to entrepreneurial efforts appear to be structured at multiple levels by the attributes of individual entrepreneurs, the dynamics of startup teams, the attributes of the startup business, and relevant institutional pressures at the level of the nation-state. What has been missing from the sociology of work, however, is an appreciation as to how mechanisms at these levels operate when structures of positional inequality – i.e. “the ‘empty places’ in the economy and the relations among them” (Baron and Bielby, 1980: 737) – first appear in new organizations. Business startups offer the researcher a valuable opportunity to witness the origins of such structured inequality.
Mechanisms of Inequality

Two generic mechanisms may lead to variation in the ownership stakes received by participants in entrepreneurial business partnerships. On the one hand, a mechanism of *distributive justice* entails a set of moral principles whereby differences in participant characteristics are translated into differences in ownership or income. While these principles may be contested between participants, they are offered with the conviction that they are fair and serve to maximize the welfare of the group as a whole (Hegtvedt, 2005). By contrast, a mechanism of *self-interest* seeks to maximize the welfare of an individual participant, possibly to the detriment of the rest of the group. Within an entrepreneurial team, the ability of any participant to seek self-interested advantage is likely to depend on their access to scarce resources or opportunities for brokerage (Emerson, 1962; Burt, 1992; Aldrich and Ruef, 2006: Chapter 4).

Since the distinction between these generic mechanisms hinges on the intentions of entrepreneurs themselves – and those intentions are unobservable to researchers – it primarily serves to classify the relevant research literature, rather than yield operational implications for empirical study. Social psychologists have traditionally begun with an emphasis on mechanisms of distributive justice, while economists tend to assume that actors are self-interested. Nevertheless, the results of behavioral experiments in these disparate domains reveal considerable similarity in outcomes, as reviewed below.

Justice Norms and Inequality

Following Ekeh’s (1974) influential account, we can treat the process of ownership allocation in entrepreneurial teams as establishing norms for subsequent *group-generalized* exchange. Over the history of the organization, “individuals involved in this type of social exchange successively give to the group as a unit and then gain back as part of the group
Thus, founders expect to contribute time, skills, and ideas to the organization (which are unspecified \textit{ex ante}), and expect to receive income, status, and other socially-desired goods in return (which are also sometimes left unspecified). Given the ample threat for subsequent shirking and collective dilemmas, the norms that allow for the emergence of such group exchange systems are of considerable practical and research interest.

Because the future benefits of group exchange in new ventures are typically not predictable (Alvarez and Barney, 2005), empirical interest centers on the allocation norms that entrepreneurial teams use to distribute inducements among their members. Based on the literature on distributive justice (see Eckhoff, 1974; Cook and Hegtvedt, 1983; Hegtvedt, 2005), I identify four generic norms of distributive justice that may apply in such contexts (see Table 1). These include norms of objective equality, subjective equality, equity, and rank order equality.

\begin{itemize}
    \item \textit{Objective Equality}. The simplest principle of distributive justice is that of objective equality: all group members receive equal benefits, independently of their capabilities, contributions, needs, social status, or position within the group. As an allocation norm, objective equality has been observed widely in experimental studies, with one classic study reporting incidence rates as high as 82\% in laboratory groups (Kahn, Nelson and Gaeddert, 1980). Representative sampling of entrepreneurial groups suggests similarly high rates of equality. Among U.S. business startups with multiple founders, for instance, an estimated 70\% had equal ownership allocations in 1998-2000. Typical reasons proposed for
\end{itemize}

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1 To be more precise, Ekeh distinguishes between individual-focused generalized exchange, group-focused generalized exchange, and what Sahlins (1963) termed “pooling”. The first involves transfers from groups to members, the second involves transfers from members to groups, and the third involves some combination of the other two. The latter category of “pooling” most adequately describes the balance of contributions and inducements in entrepreneurial groups.

2 The norms correspond to those identified by Eckhoff (1974) and Cook and Hegtvedt (1983). I do not consider a fifth norm of distributive justice from this literature – referred to as “equality of opportunity” – due to its conceptual complexity and variation in its institutional antecedents (ibid: 221).
allocation on the basis of objective equality include decision-making simplicity, reduction of conflict between group members, and compliance with norms that encourage trust within a group (Eckhoff, 1974: 214-215). Insofar as group emergence is contingent on interpersonal trust and decision-making efficacy, this leads to the assertion that the majority of entrepreneurial teams in capitalist societies will have reward distributions that are allocated equally to all members (Assumption 1).

An empirical issue that arises in probing the assumption is that observations of equal reward distributions in entrepreneurial partnerships need not reflect a norm of objective equality. Partnerships that allocate benefits based on the level of contribution from each member (norm of equity) will likewise evidence equal reward distributions when there is limited intra-group variation in economic and human capital. Similarly, an allocation norm that emphasizes ascriptive status variation (e.g. older team members should receive greater rewards than younger members) would also lead to observed distributive equality when there is a strong propensity toward group homogeneity along the same ascriptive dimension. The norm of objective equality thus serves primarily as a null hypothesis against which other norms of distributive justice may be tested, once the resource configuration and demographic composition (e.g. gender, ethnicity, age, etc.) within entrepreneurial groups is taken into account.

**Subjective Equality.** In many instances of group exchange, the allocation of benefits proceeds on the basis of members’ needs, desires, or what those members are thought to deserve. The resulting distribution is not necessarily objectively equal, although recipients feel that it is fair from a subjective perspective, at least when the norm is effective (Eckhoff, 1974: 36). For example, in an age-typed entrepreneurial team, co-founders may incentivize an older team member with stock options that are held as part of a retirement portfolio, while a younger team member receives income for her contributions. In this scenario, the resources invested in each entrepreneur may be unequal by an objective standard, but the desired outcome is that all co-founders achieve an equivalent level of material satisfaction.
Invocation of the norm of subjective equality requires considerable empathy among group members and intersubjective understanding of the distinctive identities that are involved. As a result, direct assessment of the norm is difficult. Entrepreneurs may believe that they are satisfying the needs of their business partners, even though this results from cognitive misattribution. Conversely, entrepreneurs may feel that they are not receiving what they desire from a venture, even though the rewards allocated to them satiate unrecognized or unconscious needs. For these reasons, examinations of subjective equality are more easily conducted on the basis of indirect indicators, such as the distribution of demographic attributes in an entrepreneurial team, rather than underlying psychological states and desires.

The norm of subjective equality will most likely contribute to objectively equivalent rewards when group members are highly homogeneous with respect to ascribed characteristics, such as gender, ethnicity, age, or national origin. Entrepreneurs assume that others with similar social characteristics also share their cognitive orientations, desires, and needs (McPherson, Smith-Lovin and Cook, 2001). When entrepreneurial teams are heterogeneous, members may have greater difficulty in achieving empathy with others and, rightly or wrongly, assume that the subjective needs of others are different from their own (see Table 1, Hypothesis 1).

It is noteworthy that the norm of subjective equality only yields implications for the distribution of benefits in a team as a whole, not the distribution of benefits to any particular individual within a team. Consider the three hypothetical business teams in Figure 1. Team A is a heterogeneous dyad (involving members from two different social identities, denoted by a black and white circle), Team B is a homogeneous dyad, and Team C is a heterogeneous triad. Under the norm of subjective equality, the reward distribution in Team B is identical to that obtained under a norm of objective equality. By contrast, we expect to observe deviations from equal reward distributions in both teams that have a heterogeneous composition (A and C), given the same norm of allocation. These
deviations reflect the difficulty that business team members have in understanding what members from different social identities need or deserve.³

[ Insert Figure 1 About Here ]

In conjunction with sociological findings on homophily, the norm of subjective equality readily explains the widespread use of equal reward allocations, as illustrated by Team B. Estimates for U.S. entrepreneurs, in particular, suggest that single-gender groups occur at a rate that is four to five times higher than that expected under a model of random mixing, while the incidence rate for ethnically-homogeneous groups is even greater (Ruef, Aldrich and Carter, 2003). If group formation generally occurs under a strong norm of homophily (Assumption 2) and reward allocation proceeds according to a criterion of subjective similarity, then the norm is likely to lead to equal ownership stakes in most entrepreneurial partnerships.

**Equity.** The norm of equity specifies that entrepreneurs receive rewards according to their capabilities and contributions to a venture. Early exchange theoretic formulations, such as that of Homans (1961), relied overwhelmingly on equity as a central pillar of distributive justice, summarized in the ratio formula that the “net rewards, or profits, of each man [sic] be proportional to his investments” (ibid: 75). Subsequent research has found that equity calculations tend to assume a linear, rather than ratio, form (Harris, 1983) and that the predominance of equity norms is influenced by cultural and compositional factors (Kahn, Nelson and Gaeddert, 1980; Chen, 1995). Baseline specification of the equity norm proceeds by splitting the “investments” referred to by Homans into two components: financial and human capital. Insofar as new entrepreneurial groups suffer from liquidity constraints and rely on the skills and credentials of their members (see Kim, Aldrich and

³ At the individual level, however, there is no consistent expectation as to what identity will garner greater or lesser rewards. Thus, team member A1 receives a disproportionately large stake as her condition for organizational participation, while member C1 – who assumes an equivalent social identity – receives a disproportionately small stake in her venture.
Keister, 2006 for a discussion and critique), the norm of equity proposes that equality is related directly to homogeneity in resource contributions and task-relevant human capital. In the analyses below, I explore this proposition in terms of the financial investments that entrepreneurs make in their startup firm (Hypothesis 2) and the amount of industry experience they have in the same domain as the startup (Hypothesis 3).

Rank Order Equality. While the norm of equity in group exchange seeks to reward entrepreneurs for their capabilities and investment in supporting group functions, rank order equality rewards entrepreneurs on the basis of ranked positional or status characteristics that are not necessarily related to performance. Thus, some entrepreneurial teams may allocate more benefits to older members than younger members, or more rewards to men than to women. Physical location or temporal precedence may also be a consideration by this criterion of justice, as in “first come, first serve” norms that allocate benefits exclusively based on arrival time (Eckhoff, 1974).

Estimating the prevalence of rank order equality is difficult, not only because it requires that individual variation in achieved characteristics be controlled for, but also because its aggregate implications are often identical to those of subjective equality. Drawing on the distributive justice literature, it is useful in this respect to distinguish between macrojustice outcomes, which affect the functional form of exchange in groups as a whole, and microjustice outcomes, which relate rewards to characteristics among individual members (Jasso, 1983). As principles of macrojustice, both subjective equality and rank order equality hold that homogeneous groups (e.g. Team B in Figure 1) should exhibit higher levels of equality than groups with a diverse membership (Teams A and C). In the case of subjective equality, this results from a cognitive bias, as entrepreneurs assume that alters with similar identities also have similar needs; in the case of rank order

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4 Although some scholars may view such rankings as simple discrimination, these status assignments also reflect the problems inherent in identifying salient contributions and capabilities within entrepreneurial ventures. Lacking more direct measures of entrepreneurial “quality”, business partners may rely on positional or status characteristics as performance predictors, leading to statistical discrimination.
equality, the explanatory mechanism is discrimination, as high-status entrepreneurs only support an equal reward structure for other high-status entrepreneurs.

Simultaneously, this distinction yields separate principles of microjustice. Under a norm of subjective equality, entrepreneurs having different status characteristics do not consistently receive greater or lesser benefits – there is simply more difficulty (i.e. needs attribution error) in reaching parity in mixed-status partnerships. Under a norm of rank order equality, on the other hand, status and rewards are clearly correlated at the individual level (Hypothesis 4). This is illustrated graphically in Figure 1 as a reward premium received by team members occupying ‘white’ circles in heterogenous groups (A2, C2, and C3). For business founders in the United States, discriminatory biases appear to favor white males in this respect. Given the risk-seeking behavior often attributed to the entrepreneurial mindset (Xu and Ruef, 2004), younger entrepreneurs may also enjoy some status benefits. Naturally, the status hierarchy may differ considerably in other cultures.

Summary. Although the norms of objective equality, subjective equality, equity, and rank order equality offer distinctive principles for structuring rewards within social groups, they need not be mutually-exclusive. Because entrepreneurs in startup teams may hold different justice norms simultaneously, the distribution of ownership stakes is likely to reflect a combination of these principles. Moreover, the salience of justice norms may vary depending on the attributes that are involved. For instance, a group may rank the contributions of young entrepreneurs over those of older participants, yet be indifferent to the distinction between men and women in the founding team. The multivariate analyses below probe the relative salience of such norms empirically.
Self-Interest and Inequality

To many economists, the emphasis on justice norms in social psychology is likely to paint an unfamiliar portrait of negotiation over entrepreneurial ownership shares. From a rational choice perspective, a more appropriate model is that of an entrepreneur who tries to maximize their own returns, while forming contracts with other entrepreneurs and outside investors (Aghion and Bolton, 1992). These contracts are necessarily incomplete in entrepreneurial ventures, since capital contributions and resumes may be verified, but the effort put forth by entrepreneurs is often not observable or contractible (Bernheim and Whinston, 1998). Under these circumstances, self-interest may be an important mechanism generating inequality among entrepreneurs, depending on the resources they hold, the network positions they occupy, and strategies for opportunism that they pursue.

Two experimental paradigms have been widely deployed to consider the extent to which exchange behaviors match the idealized, self-interested model of *homo economicus*. In the game theoretic paradigm, subjects are asked to engage in bargaining games with paired players under constraints that affect the conduct of the negotiations and payoffs received (Camerer, 2003). In the exchange theoretic paradigm, subjects are asked to engage in bargaining games with paired players under network constraints that affect who they can exchange with (see Macy and Flache, 1995 for a comparison). Although both forms of experiments are greatly simplified compared to real-world bargaining among entrepreneurs, they offer insights into the processes that may generate inequality between entrepreneurs. More importantly, they establish a theoretical baseline for the pattern of inequality that would result under an assumption of economic rationality and, thus, allow us to probe deviations from a model of self-interested action.

Negotiation Constraints. One way to conceptualize ownership allocation within entrepreneurial ventures is to imagine a ‘lead entrepreneur’ who has come up with the preliminary idea for a startup and who then invites a partner to join him or her. If the startup requires little or no investment, offers a relatively stable return, and requires the
participation of both entrepreneurs to succeed, then the viability of this venture is largely contingent on only two factors: (a) the ownership share that the lead entrepreneur offers to the prospective partner; and (b) whether the prospective partner accepts this share and participates in the venture. This scenario is approximated by the well-known ultimatum game (UG), in which subjects (one lead and one follower) are instructed to split a divisible ‘pie’ (usually consisting of a cash payoff). Under conditions of self-interest and anonymity, the lead entrepreneur in this scenario should offer the smallest possible (nonzero) share to their partner.

Alternatively, one can imagine a scenario where there is no lead entrepreneur and participants in an entrepreneurial venture simply pool resources in the hope of collective gain. In this case, each entrepreneur decides how much of their personal funds to devote to the venture and how much to keep, with the payoff from the venture being contingent on the aggregate amount of group funding. This scenario is approximated by another game, the public goods game (PGG), in which subjects receive a monetary endowment and then split it between personal funds and a group fund. At the end of the game, the group fund is augmented by a certain percentage (e.g. 50%) and then the proceeds from the group fund are split among subjects as well. Under conditions of self-interest and anonymity, entrepreneurs in this scenario should contribute as little as possible to the group fund.

According to the predictions of game theory, inequality among entrepreneurs will thus result largely as a function of precedence in initiating entrepreneurial activity (‘lead entrepreneur’ versus follower) and willingness to engage in free-riding behavior. Experimental results, however, have suggested overwhelming divergence from the model of self-interest when considering typical student subject pools. In the UG, modal offers for subject dyads are typically an equitable 50% and mean offers vary between 40% and 45% (Henrich et al., 2004). For dyads playing the PGG, mean contributions in one-shot games vary between 40% and 60% of each subject’s allocation, with a large amount of variance (Sally, 1995). Like the experiments that have been conducted from a social justice perspective, these results imply that equality will be the norm, rather than the exception, among small entrepreneurial teams.
In contrast to two norms reviewed in the literature on social justice – those of subjective and rank order equality – game theory suggests that sociodemographic characteristics will not have much impact on the distribution of shares in entrepreneurial teams. This contention has largely been supported in empirical experiments conducted within this paradigm, with little systematic variation observed in negotiation behavior based on the gender, age, or wealth of adult subjects (Camerer, 2003). The lack of explanatory power for individual-level variables extends to game-theoretic experiments conducted in non-Western societies, where market integration and individual autonomy tend to be lower than the levels observed in ‘modern’ capitalist society (Henrich et al., 2004). However, a shortcoming in generalizing from these experiments to exchange processes in real entrepreneurial groups is that the experimental protocols generally impose a condition of anonymity, where each subject is only aware of their own ascriptive characteristics and lacks any prior relationship to other subjects. The latter constraint, in particular, is the object of manipulation in network analyses of self-interested exchange.

Network Constraints. Sociological experiments involving self-interested exchange (e.g. Cook et al., 1983; Molm et al., 1999) emphasize that the network structure among group members is a principal determinant of interpersonal power and, as a consequence, exchange outcomes. Extending this logic to entrepreneurial teams, one can argue likewise that the importance of self-interest will vary systematically based on both the content and arrangement of pre-existing network constraints. Previous studies of business founding teams have identified a substantial influence of strong network ties – e.g. those involving kinship or marital relationships – on group composition (Ruef, Aldrich and Carter, 2003). In light of the reciprocity and pressures for conflict reduction associated with such relationships, negotiation on the basis of pure self-interest is likely to decrease and principles of allocation will tend toward objective equality. When teams are developed on the basis of weak ties, as among social or business acquaintances, emotional investment and trust tends to decrease, while the diversity of information flows increases (Granovetter, 1973; Ruef, 2002). In weak tie contexts, entrepreneurs become oriented toward self-
interested exchange. Self-interest is even more likely when groups bring together complete strangers, who have no prior investment in interpersonal relationships and limited knowledge about their respective intentions or capabilities (*Hypothesis 5*).

Recent experimental results suggest a mechanism that may produce such variation in exchange patterns conditional on tie strength. Molm et al. (1999) distinguish between subjects who engage in *negotiated* exchange, which entails explicit bargaining over contributions and reward allocation, and *reciprocal* exchange, which entails separate contributions in the absence of bargaining. In non-experimental situations, negotiated exchange is the norm between individuals with weak or no social ties (e.g. strangers in an entrepreneurial group), while reciprocal exchange is the norm between individuals with strong ties (e.g. kin running a family business). Laboratory experiments find that reciprocal exchange produces more equality and less use of interpersonal power, on average, than negotiated exchange. Interestingly, the experimental conditions of reciprocal exchange are very similar to those of games, such as the UG and PGG, which also yield a pronounced pattern of egalitarianism in their experimental results (but not their game theoretic predictions).

Beyond the content of interpersonal exchange, behavioral experiments suggest that the structure of an entrepreneurial network is likely to have an impact on inequality, especially as it generates resource dependencies and opportunities for brokerage among group members. In a business founding team consisting of three members, a classic opportunity for brokerage arises when one member brings together two business acquaintances who have had no prior contact with one another (Burt, 1992; see Figure 1, Group C). When allocations of ownership are discussed, the first member (C2) may be able to leverage her crucial position as the team’s lynchpin and receive a disproportionate ownership stake. Classic exchange experiments (e.g. Cook et al., 1983) generally support the contention that equality in group exchange declines when some members occupy more powerful (brokerage) positions than others.\(^5\)

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\(^5\) Formally, this chapter operationalizes brokerage within an entrepreneurial team as a situation where: (a) there are at least three team members; and (b) the strength of the network ties of one member of a triad (C2) to two other members (C1 and C3) is stronger than the network ties between those other two members.
More recent experiments qualify this generalization, by calling attention to the form of exchange – reciprocal versus negotiated – being practiced by individuals in powerful positions. When interpersonal power is defined as a function of an individual’s access to a number of dependent individuals, the self-interested use of power appears to be greatest in negotiated exchange and substantially weaker in reciprocal exchange (Molm et al., 1999). Considering the network composition of entrepreneurial groups, then, this leads us to expect a rank ordering of egalitarianism, with the highest level being found in teams with kinship or spousal ties and no opportunities for brokerage and the lowest level being found in teams consisting of strangers, with some entrepreneurs occupying ‘middle man’ positions.

**The Empirical Distribution of Inequality**

A number of recent surveys allow investigators to move beyond theorized mechanisms to consider the empirical contours of inequality among entrepreneurs. In this section, I use data from the first wave of the Panel Study of Entrepreneurial Dynamics (PSED) to describe the nature and possible causes of inequality within U.S. business founding teams, addressing both micro level inequality (among individual entrepreneurs) and macro level inequality (among ventures). Parallel data exist for other advanced capitalist countries, such as Sweden, but have primarily been deployed to estimate entrepreneurial prevalence and success (e.g. Davidsson and Henrekson, 2002; Eckhardt, Shane and Delmar, 2006), rather than inequality. Consequently, for purposes of international comparison, I draw on exchange experiments in a variety of societies, which

Network ties are classified into three conventional categories: (a) strong ties (spouses, cohabiting partners, kin); (b) weaker ties (colleagues, coworkers, friends); and (c) no ties (strangers).

6 The PSED is a nationally representative sample of startups in the United States. For entrepreneurial efforts involving multimember teams, interviewers elicited information on the ownership stakes, demographic characteristics, human capital, and financial contributions of each team member, as well as the interpersonal relationships between all members prior to the initiation of startup activity. Reynolds (2000) provides a detailed description of the survey’s methodology.
offer a specific focus on the level of equality or inequality in allocation outcomes (Henrich et al., 2004).

**Individual Ownership Shares**

Table 2 cross-tabulates the mean ownership share (beyond the largest stake held by a ‘lead’ entrepreneur) with the number of co-founders in U.S. startups. The sample in the left column is limited to those startups that do not offer any private (non-equity) payments to entrepreneurs, including reimbursement at market rates, at discounted rates, or through barter exchange. Exchange in this group of startups most closely resembles the scenario presented experimentally by the ultimatum game, which precludes any reward allocation aside from shares of a collective ‘pie’. The sample in the right column includes startups that reward their founders with non-equity payments for labor and resource contributions, as well as ownership shares. Exchange processes in these startups present dilemmas similar to those found in experimental public goods games, since any revenues diverted to private payments reduce the collective funds available to a business venture.

[ Insert Table 2 About Here ]

Several descriptive statistics are worth noting in the table. First, the ownership shares are relatively close to the standard of objective equality (50%, 33%, 25% etc., depending on team size). In conventional models of self-interested behavior, lead entrepreneurs who come up with the idea for a business startup reserve large ownership shares for themselves and offer only scraps to other co-owners or institutional investors. This premise is echoed by the expected outcome for ultimatum games, where a rational ‘proposer’ offers a low stake to a ‘responder’ and the responder accepts that stake, in lieu

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7 At an aggregate level, about a third of U.S. business startups rely on at least one mechanism of non-equity compensation, in addition to group allocation of ownership stakes. At an individual level, approximately one-fifth of all entrepreneurs receive some compensation for their startup contributions in addition to an ownership stake.
of receiving nothing at all (Camerer, 2003). By contrast, the mean (second-best) share observed in entrepreneurial dyads without private payments is over 45%, suggesting a far more egalitarian model than that theorized for *homo economicus*. This share also approximates the stakes received by student responders in UG experiments, which are typically above 40%. Among college students at UCLA, for instance, Henrich (2000) found that the mean stake size offered to responders was a rather equitable 48%. Like these experimental studies, the data on business partnerships suggest that norms of fairness are typically a pre-condition to cooperation among entrepreneurs and, in contrast to game theoretic predictions, there is limited reliance on pure principles of self-interest.

Second, there is no systematic variation in the equality of ownership shares by entrepreneurial team size. Considered as a ratio of objectively equal shares, the ownership allocation of (non-lead) entrepreneurs neither declines nor increases monotonically as co-founders are added to the business venture. Thus, there is little evidence that ownership shares are adjusted *ex ante* to account for the possibility of more free-riding in larger entrepreneurial groups. Third, a comparison of ownership shares between the two types of startups reveals that entrepreneurial ventures which rely on non-equity payments to co-founders consistently have lower levels of equality. This seems counter-intuitive from a perspective of rational reward allocation, since the ostensible motivation for non-equity payments is often to compensate entrepreneurs for special contributions to a venture (e.g. a parcel of land or a patent on an invention), while maintaining objectively equal shares otherwise. The descriptive statistics in the table suggest, on the other hand, that a resort to non-equity reimbursement may be indicative of a broader departure from egalitarianism within an entrepreneurial group.

To probe the determinants of entrepreneurial inequality further, Table 3 considers the effect of demographics, networks, and contributions (money and expertise) on individual ownership shares. Deviations from equality are assessed using Jasso’s (1980) justice formula, with ‘just shares’ being computed on the basis of objective equality. Given *n* members in an entrepreneurial team and an ownership share of *x*, the outcome variable for each entrepreneur *i* is calculated as:
$E_i = \ln \left( \frac{x_i}{1/n} \right)$  \hspace{1cm} (1)

where $E_i = 0$ indicates an equal ownership share, $E_i < 0$ indicates a share that is lower than expected on the basis of objective equality, and $E_i > 0$ indicates a share that is greater than expected under this standard.\textsuperscript{8}

Demographic characteristics explain virtually none of the variance in ownership stakes among entrepreneurs in the United States. There is some evidence that older entrepreneurs receive disproportionately smaller shares of ownership, but no biases are observed on the basis of gender or ethnicity. This result parallels findings for experimental exchange games, such as the UG, which have not found any systematic correlations for a variety of sociodemographic measures (Henrich et al., 2004). Contrary to the hypothesis of rank order equality, demographic variation within groups appears to play a limited role in entrepreneurial stratification. What might account for this non-finding? One possibility is that selection into entrepreneurial groups winnows much of the variance in sociodemographic characteristics, leading to groups that are generally homogenous and equitable (Ruef et al., 2003). In this respect, discrimination (statistical and otherwise) may not occur at the stage of ownership stake allocation, but in deciding who should be part of a business venture in the first place.

Network characteristics exercise a more pronounced impact on the distribution of ownership shares. Entrepreneurs who are connected to spouses, partners, or kin within a startup team enjoy significantly larger ownership shares than entrepreneurs lacking such ties. Entrepreneurs in brokerage positions also enjoy advantages, receiving shares that are

\textsuperscript{8} Since all observations of ownership shares are clustered within teams, each $E_i$ depends on $E_j$, where $i$ and $j$ are entrepreneurs involved in the same business startup. To provide accurate estimates of allocation outcomes, I employ generalized estimating equations (GEE) (Harden and Hilbe, 2003) rather than OLS in the following analysis.
roughly 27% greater than those held by comparable entrepreneurs without brokerage opportunities (see Actor 2 in Figure 2). Following the experimental results of Molm and her colleagues (1999), however, benefits do not appear to accrue to entrepreneurs in brokerage positions when they also have spousal or kinship ties within the startup. The use of network brokerage to achieve larger ownership stakes may be deemed inappropriate in family businesses, which depend heavily on reciprocal rather than negotiated exchange. Indeed, the estimates suggest that such brokers may discount their ownership stakes in order to avoid the appearance of impropriety or conflicts of interest with respect to family members.9

Unsurprisingly, the functional contributions of entrepreneurs also predict their ownership shares. Following a norm of equity, individual stakes increase significantly with human capital (duration of industry tenure) and financial contributions (in $US) to the venture. Non-equity compensation (i.e. private payment) does not appear to affect shares at the individual level once other variables are controlled for. Comparing this result with the difference noted in Table 2 -- between startups with and those without private payments -- raises an important theoretical point: does the presence of certain payment mechanisms (e.g. non-equity compensation) directly affect the shares of individual entrepreneurs? Or does it affect the aggregate level of inequality observed in entrepreneurial teams on the whole? More generally, to what extent can entrepreneurial inequality be reduced to an individual phenomenon? I address this question next by examining aggregate variation in inequality among business ventures.

*Aggregate Inequality between Business Ventures*

9 In the example shown in the lower right-hand cell of Figure 2, for instance, an entrepreneurial venture may begin with a wife and husband team (actors 2 and 3, respectively) who then pull in a former work acquaintance of the wife as well (actor 1). Since the work acquaintance will also expect some ownership share for his participation in the business, the wife is more likely to discount her share in order to maintain marital harmony than expect to profit from her position as a network broker.
Aggregate influences on ownership stakes in U.S. startups are summarized in Table 4. Rather than predicting the amount of individual shares, the regression model in this case predicts the level of inequality in shares for each business venture as a whole. Aggregate inequality is computed via a standard Theil (1967) index:

\[ T = \sum_{i=1}^{n} \frac{x_i \ln x_i}{\ln n} \]  

(2)

where \( x_i \) again is the proportion of ownership held by entrepreneur \( i \) and \( n \) is the number of entrepreneurs in the team. By reversing the index as \(-1 \times T\), we obtain a measure that varies continuously from 0 (perfect inequality) to 1 (perfect equality).

The legal form of a business startup has a significant effect on the distribution of ownership stakes. A number of firms in the PSED sample are legally established, even at a nascent stage, as partnerships, subchapter-S corporations, C-corporations, or some other organizational form. Legal recognition of a startup’s ownership structure increases the transparency of stratification among co-founders and, in turn, improves objective equality. This finding underscores Weber’s early call to attend to the legal context of ownership allocation in business partnerships.

The regression estimates also highlight the importance of several group-level variables that failed to predict variance in ownership shares at an individual level. Diversity in demographic characteristics tends to decrease equality among entrepreneurs, most significantly so for mixed-gender and mixed-ethnicity teams. Because this effect cannot be reduced to discrimination against entrepreneurs with specific gender or ethnic characteristics (cf. Table 3), the effect suggests a general lack of trust or empathy in entrepreneurial teams with members from diverse backgrounds, leading to greater errors.
in the attribution of competencies or needs. To some extent, statistical evidence of such ‘errors’ can be seen by plotting the residuals from individual-level predictions of ownership shares against the demographic composition of the teams (see Figure 3). Predictions of ownership shares are most accurate (and residuals are the smallest) in all-female teams of entrepreneurs and slightly less so in all-male teams. Mixed gender teams display the least accurate predictions (and greatest dispersion in residuals) based on individual level characteristics. This supports the existence of a norm of subjective equality, in which the homogeneity of an entrepreneurial group is a pre-condition to the predictable and equitable allocation of rewards.

[ Insert Figure 3 About Here ]

Two other characteristics of entrepreneurial teams appear to affect aggregate inequality. Private payments (e.g. barter, direct reimbursement) decrease equality, though, again, this cannot be traced to an individual-level mechanism. Instead, it appears that the existence of non-equity compensation in startups is correlated more generally with a culture of inequality, constituted by the group’s belief in separating collective and individual rewards. The presence of kinship or spousal networks, on the other hand, promotes egalitarianism in the allocation of ownership shares. Neither financial nor human capital contributions explain much of the variance in inequality between business ventures.

Entreprenuerial Inequality and Societal Development

How should these patterns of inequality be viewed more generally in cross-societal perspective? Are they idiosyncratic features of business formation in the United States or do they reflect global patterns affecting entrepreneurial partnerships? At present, we lack systematic empirical data to answer these questions definitively. Cross-national datasets on entrepreneurial activity, such as the Global Entrepreneurship Monitor (GEM) (Sternberg and Wennekers, 2005), primarily assess rates of new venture creation rather
than the allocation of ownership shares and other compensation among business partners. In lieu of survey data, economic experiments provide the primary source of cross-societal data on inequality in exchange. To situate the outcomes identified in U.S. startups in a global context, I draw on exchange experiments that have been conducted in a variety of pre-capitalist societies (see Henrich et al., 2004), calling particular attention to the level of socio-political level of development in each.

[ Insert Figure 4 About Here ]

In many respects, the level of egalitarianism observed among both entrepreneurs and experimental subjects in the United States is unusually high. In dyadic exchange, ‘lead’ entrepreneurs or ‘proposers’ offer shares averaging as much as 46-48% to their partners. When business startups are not yet legally established, these second-best shares are slightly smaller, averaging 42% of a venture’s ownership allocation. From a Weberian perspective, this difference raises the possibility that the rule of law in a group affects inequality more generally. In fact, when we array a variety of pre-capitalist societies on a scale of socio-political development – ranging from simple family-level societies to relatively complex chiefdoms – we see that inequality in exchange has a strong positive correlation with the development of a legal framework and decision-making apparatus above the level of the household (see Figure 4).¹⁰

Family-level and extended-family societies, like the Machiguenga people of the Peruvian rainforest or Mapuche farmers of the Chilean plains, lack governing institutions beyond the level of kinship networks. In the absence of property law or contracts, the allocation of stakes in these societies is among the most unequal observed in the world. Societies that exist at the scope of bands, clans, and villages develop weak structures of governance, such as group consensus, lineal authority, or decision-making by a group of elders. Structures of stratification become subject to external scrutiny and inequality, while

¹⁰ The rank ordering of socio-political complexity shown here is adopted from Johnson and Earle (2001) and Henrich et al. (2004).
highly variable, tends to average in the middling range in experimental exchange games. For societies composed of multiple linked clans (multi-clan groups) or ranked clans and villages (chiefdoms), systems of governance and business law are more developed still. High-status elders govern through formal councils, payments of taxes or tribute stimulate the need for written accounting, and long-distance trade leads to the elaboration of economic contracts. In some of these societies, such as the East African Orma, inheritance norms move from primogeniture to equal inheritance (Ensminger, 2004: 361), promoting new standards of fairness. Allocation of stakes in chiefdoms and multi-clan groups appears to be relatively equitable, at least when compared to societies with more limited socio-political complexity.

Although the parallels between cross-societal exchange experiments and actual entrepreneurial outcomes are largely speculative, this pattern raises an intriguing possibility for future scholarship. The degree of legal transparency and oversight in entrepreneurial exchange may be an important institutional pre-condition to economic equality, both within and across societies. To explore this hypothesis further, students of entrepreneurship will need to collect data on ownership stakes and compensation in a variety of societies, both capitalist and pre-capitalist. They must also attend to the legal institutions that support and constrain entrepreneurial reward within any given business venture, perhaps extending existing international studies that trace the impact of legal and political turmoil on the viability of entrepreneurial ventures (e.g. Hiatt and Sine, 2008). At present, the anthropological evidence on exchange is ambiguous as to the root cause of egalitarian norms, since a number of indices of development – e.g. socio-political complexity, settlement scale, anonymity, and market integration – are highly intercorrelated across societies (Henrich et al., 2004).

**Discussion**

Entrepreneurial partnerships provide a unique laboratory for the analysis of norms governing group exchange. Business founders who are lucky or capable enough to enjoy
the fruits of their labor can find themselves on a path to upward social mobility and wealth accumulation (Quadrini, 1999). Yet the norms governing the distribution of tangible rewards among co-founders are relatively tacit and open to conflicting interpretations. For social scientists, eliciting these norms yields theoretical benefits for the study of economic inequality, both in clarifying possible paradoxes between macro- and micro-level outcomes, as well as in broadening conceptions of social exchange.

Norms of Macro- and Microjustice

Comparing the aggregate and individual-level results leads to an unexpected conclusion regarding norms of distributive justice. From an individual perspective, the allocation of ownership stakes is driven by a process that might be described as “rational choice under constraint”, entailing a commitment to equity norms subject to the impact of network dependence. Based on this perspective, entrepreneurs employ within-group comparisons, expecting to receive a stake in collective rewards that is proportional to their capabilities and financial contributions relative to other members, while leveraging brokerage opportunities when they are able to do so. Empirical results for ownership shares among U.S. entrepreneurs reproduce much of the received wisdom on dyadic exchange (e.g. Homans, 1961; Burt, 1992) in this regard.

At the group level, the allocation of ownership stakes is driven most noticeably by homophily, entailing a commitment to subjective equality, with equity and network dependence constituting ancillary norms. Based on this perspective, team members are influenced by between-group variation in demographic composition, although they may not be explicitly aware of its impact on allocation norms. The between-group variation is not reducible to individual differences in attributes such as gender, ethnicity, or age but, instead, reflects a tendency for social groups to employ a ‘like-deserves-like’ rule in the allocation of collective rewards.

An additional wrinkle is introduced as we move from analyzing inequality between business partnerships within a society to analyzing inequality between partnerships across
societies. The same network conditions – particularly kinship ties -- that appear to promote equality in advanced industrial countries prove to be inimical to equality when they are the only source of stable governance in a society. This paradox may be resolved when we consider the difference between family businesses that are developed in institutional contexts with well-established laws governing inheritance, marital rights, divorce, and joint filing of taxes (such as the United States) and kin-based partnerships developed in institutional contexts where there is little reliance on legal frameworks beyond the informal norms established within the family (such as the Mapuche farmers in Chile).

The potential inconsistency between aggregate and individual-level outcomes has long been recognized in the literature on distributive justice (Jasso, 1983), but has not been drawn out empirically among formal organizations. Why are norms of justice different across levels of analysis? While any response to this question is necessarily speculative at this stage, my analysis of business partnerships suggests several possible reasons. First, individuals self-select into groups, a process that itself may generate economic inequality. Such self-selection is often invisible to analyses that focus resolutely on individuals who are already group members, but becomes more apparent when we consider how the compositional attributes of entrepreneurial groups affect the nature of their exchange processes. Second, much of the meaningful variation in relational and institutional context occurs between, rather than within, collectivities. As a result, research designs can profit from the tremendous diversity among naturally occurring work groups, such as entrepreneurial teams, as well as the variance in institutional structures between societies.

**Broadening Conceptions of Social Exchange**

In this chapter, I have also attempted to reconnect social exchange theory with distributive justice perspectives. The intellectual connection arises from the uncertainty of contributions and payoffs in entrepreneurial efforts. While entrepreneurs may have some *a priori* knowledge of their mutual capabilities and material contributions, many of the more intangible contributions (e.g. ideas, social capital, idiosyncratic skills, time) only
become revealed after members have committed themselves to joint projects. Moreover, the payoffs from these projects (both material and non-material) continue to be elusive for some time after sunk costs have been invested. As a result, entrepreneurial exchange transpires on the basis of strong norms of trust and objective equality. My discussion has emphasized principles of justice under which deviations from objective equality may be expected. This should not detract from the fact that much of the unexplained variance in aggregate and individual equality may result because groups adjust member stakes on the basis of less tangible motivations, many pertaining to the development of group solidarity and a collective sense of fairness. As Durkheim (1933: 379) put it, “all external inequality compromises organic solidarity”. Whether this commitment to solidarity persists over the lifetime of entrepreneurial groups should be explored in future research that tracks the parallel evolution of group composition, turnover, and exchange outcomes. Such research would not only address the norms of distributive justice that allow business partnerships to arise initially, but also the shirking and demographic instability that may threaten their persistence.
REFERENCES


Figure 1. Group Composition and the Allocation of Rewards Under Different Norms

<table>
<thead>
<tr>
<th>Norm</th>
<th>Hypothetical Reward Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A1</td>
</tr>
<tr>
<td>Objective Equality</td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>Subjective Equality</td>
<td>$\frac{3}{4}$</td>
</tr>
<tr>
<td>Rank Order Equality</td>
<td>$\frac{1}{4}$</td>
</tr>
<tr>
<td>Self-Interest (with Brokerage)</td>
<td>$\frac{1}{2}$</td>
</tr>
</tbody>
</table>

Group Composition
Figure 2. The Effect of Network Ties and Brokerage on Ownership Shares in U.S. Startups

<table>
<thead>
<tr>
<th>Brokerage Position</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actor 2 receives equal share (=1.00)</td>
<td>Actor 2’s share (\approx 1.11)</td>
</tr>
<tr>
<td>No</td>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>Yes</td>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Actor 2’s share (\approx 1.27)</td>
<td>Actor 2’s share (\approx 0.96)</td>
</tr>
<tr>
<td></td>
<td><img src="image5" alt="Diagram" /></td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
</tbody>
</table>
Figure 3. Boxplot of Residuals in Individual-Level Prediction of Ownership Shares by Team Composition

- **All Female**
  - + 1 outlier > 2.0

- **All Male**
  - + 7 outliers > 2.0

- **Mixed Gender**
  - + 7 outliers > 2.0
Figure 4. Comparison of (Second-Best) Ownership Shares in U.S. Startups with Variation in Shares Offered in Cross-Societal Ultimatum Game Experiments

Source: Based on data presented in Henrich et al. (2004) and author’s calculations.
Table 1. Five Norms of Distributive Justice in Groups

<table>
<thead>
<tr>
<th>Norm</th>
<th>General Principles</th>
<th>Empirical Hypotheses (H) and Assumptions (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective Equality</strong></td>
<td>All group members should receive equal rewards, independently of contributions or attributes.</td>
<td>A1: The majority of small groups have formal reward distributions that are allocated equally to all members.</td>
</tr>
<tr>
<td><strong>Subjective Equality</strong></td>
<td>Group members should receive equal rewards if their identity matches that of other members.</td>
<td>A2: The majority of small groups are constituted by individuals with similar ascriptive characteristics. H1: Equality in group exchange is related directly to homogeneity in members' ascriptive characteristics.</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>Group members should receive rewards based on the resources and human capital they contribute to the group.</td>
<td>H2: Equality in group exchange is related directly to homogeneity in resources among members. H3: Equality in group exchange is related directly to homogeneity in human capital among members.</td>
</tr>
<tr>
<td><strong>Rank Order Equality</strong></td>
<td>Group members should receive rewards commensurate with their status in society.</td>
<td>H4: High status members will receive more rewards from group exchange. †</td>
</tr>
<tr>
<td><strong>Self-Interest</strong></td>
<td>Group members should seek to maximize their rewards, subject only to the constraints imposed by negotiation norms and networks.</td>
<td>A3: Lead members in groups will receive most of the rewards from group exchange. H5: Equality in group exchange is related directly to the strength of network ties among group members. H6: Equality in group exchange is related inversely to opportunities for brokerage among members.</td>
</tr>
</tbody>
</table>

† Hypothesis applies exclusively at the level of individual members, rather than the group as a whole.
Table 2. Average Ownership Share among Entrepreneurs involved in U.S. Startups (1998), Excluding Lead Entrepreneur

<table>
<thead>
<tr>
<th>Team Size</th>
<th>Startups without Non-Equity Payments</th>
<th>Startups with Non-Equity Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Share (Std. Dev.)</td>
<td>Equal Share Ratio</td>
</tr>
<tr>
<td>2</td>
<td>45.4 (10.8)</td>
<td>0.91</td>
</tr>
<tr>
<td>3</td>
<td>28.9 (6.6)</td>
<td>0.87</td>
</tr>
<tr>
<td>4</td>
<td>22.8 (3.4)</td>
<td>0.91</td>
</tr>
<tr>
<td>5+</td>
<td>16.6 (5.2)</td>
<td>---</td>
</tr>
</tbody>
</table>

Observations N=280 N=127

Total N = 407 Business Startups (Source: PSED I, Wave A)
Table 3. Linear Regression of Individual Ownership Shares as a Function of Demographics, Networks, and Contributions (U.S. Startups, 1998-2000)

<table>
<thead>
<tr>
<th>Variable</th>
<th>GEE Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.074</td>
<td>0.059</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (1=female)</td>
<td>0.042</td>
<td>0.032</td>
</tr>
<tr>
<td>Ethnicity (1=white)</td>
<td>0.002</td>
<td>0.028</td>
</tr>
<tr>
<td>Age (years)</td>
<td>-0.003 *</td>
<td>0.001</td>
</tr>
<tr>
<td><strong>Networks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broker</td>
<td>0.240 **</td>
<td>0.090</td>
</tr>
<tr>
<td>Spousal / Kinship Ties</td>
<td>0.103 **</td>
<td>0.038</td>
</tr>
<tr>
<td>Friends / Acquaintanceship Ties</td>
<td>0.050</td>
<td>0.035</td>
</tr>
<tr>
<td>Broker × Spousal / Kinship Ties</td>
<td>-0.389 *</td>
<td>0.236</td>
</tr>
<tr>
<td><strong>Balance of Contributions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Capital †</td>
<td>0.056 **</td>
<td>0.024</td>
</tr>
<tr>
<td>Financial Contribution †</td>
<td>0.206 ***</td>
<td>0.026</td>
</tr>
<tr>
<td>Non-Equity Compensation</td>
<td>-0.039</td>
<td>0.032</td>
</tr>
<tr>
<td><strong>Model Fit (χ²)</strong></td>
<td>95.84 ***</td>
<td></td>
</tr>
<tr>
<td><strong>Within-Team Correlation (α)</strong></td>
<td>-0.175</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Entrepreneurs</strong></td>
<td>877</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05; ** p < 0.01; *** p < 0.001 (one-tailed tests)

Source: PSED I, Wave A

† Z-score based on team mean and dispersion.
Table 4. Linear Regression of Equality in Ownership Allocation as a Function of Team Diversity, Networks, and Balance of Contributions (U.S. Startups, 1998-2000)

<table>
<thead>
<tr>
<th>Variable</th>
<th>OLS Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.903</td>
<td>0.046</td>
</tr>
<tr>
<td>Team Size</td>
<td>0.005</td>
<td>0.010</td>
</tr>
<tr>
<td>Institutional Actors (% of Team)</td>
<td>-0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>Legal Form (1 if determined)</td>
<td>0.068 *</td>
<td>0.033</td>
</tr>
<tr>
<td>Non-Equity Compensation (1 if used)</td>
<td>-0.033 *</td>
<td>0.015</td>
</tr>
<tr>
<td>Amount of Seed Funding (ln $)</td>
<td>-0.002</td>
<td>0.002</td>
</tr>
<tr>
<td><strong>Team Diversity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender Diversity</td>
<td>-0.069 ***</td>
<td>0.021</td>
</tr>
<tr>
<td>Ethnic Diversity</td>
<td>-0.041 *</td>
<td>0.020</td>
</tr>
<tr>
<td>Age Diversity (STD)</td>
<td>-0.002</td>
<td>0.002</td>
</tr>
<tr>
<td><strong>Networks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brokerage</td>
<td>-0.020</td>
<td>0.038</td>
</tr>
<tr>
<td>Spousal / Kinship Ties in Team</td>
<td>0.068 **</td>
<td>0.027</td>
</tr>
<tr>
<td>Friends / Acquaintances in Team</td>
<td>0.013</td>
<td>0.027</td>
</tr>
<tr>
<td><strong>Balance of Contributions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Capital (STD)</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Financial Contribution ($10000, STD)</td>
<td>-0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Explained Variance (R²)</td>
<td>8.3%</td>
<td></td>
</tr>
<tr>
<td>Number of Teams</td>
<td>362</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05; ** p < 0.01; *** p < 0.001 (one-tailed tests)

Source: PSED I, Wave A