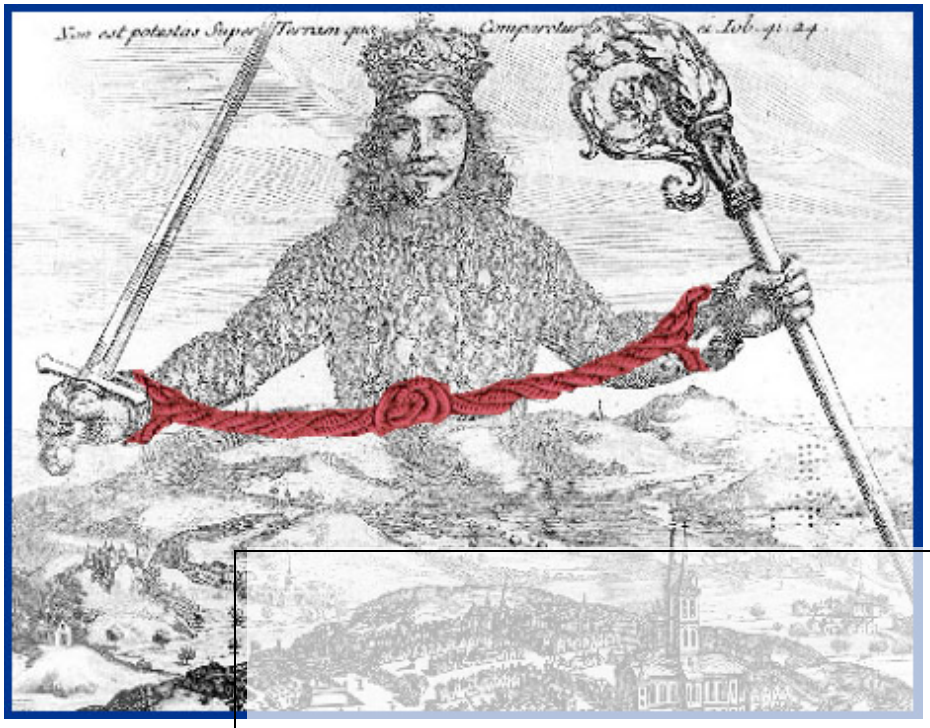

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Choosing Inequality
An Experimental Analysis of the Impact of Social Immobility on the Democratic Election of Distributive Rules

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Choosing Inequality

An Experimental Analysis of the Impact of Social Immobility on the Democratic Election of Distributive Rules

By Stephan Wolf and Alexander Lenger

Abstract

Mainstream economists usually identify a fundamental conflict between efficiency and justice in resource allocation: markets are generally considered an efficient allocation tool, but create unequal results. Corresponding governmental redistribution shall equalize some of these market results, but leads to inefficiency due to disincentives both for net payers and net receivers. Consequently, this paper analyses the impact of social inequality on distributive choices in an experimental democracy. In our experiment, we find that stark inequality is generally accepted provided a strong egalitarian income floor is ensured. Even though our samples showed a very strong egalitarian inclination, complete egalitarianism was not a stable outcome. Some degree of differentiation always emerged on an initial egalitarian base.

1 Introduction

Traditionally, economists are largely concerned with efficiency and, as a consequence, with the working properties of the inherently efficient allocations mechanism called “market”. Correspondingly, a tradeoff between efficiency and equality is identified (Okun 1975). Claiming the status of a positive science, little room is given to the analysis of justice principles, especially when it comes to investigating the distributive dimension of market allocation. The latter is usually not part of a purely economic analysis since economists frequently reject any mingling with normative aspects. However, we argue that this neglect is inadequate for two reasons: First, *justice issues matter* because it affects the well-being of individuals. From a normative point of view, efficiency arguments hence may be considered of secondary importance only, if one follows e.g. the Rawlsian tradition (Rawls 1971). Second, even if one is primarily concerned with efficiency as such or argues that efficient market results *are just per se* (cf. Nozick 1974, Hayek 1960, 1973-9, Worland 1986), it is important to take into consideration what those individuals participating in market exchange perceive as just or unjust since the stability of the market system will be under pressure. Too much perceived injustice may trigger reservations against market based allocation systems and correspondingly call for political redistribution (Homann/Pies 1996, Buchanan 1975). Ultimately, missing approval will result in an abolishment of the ruling government. So from a mere economic conflict perspective, justice matters at least for the stability of market democracies and should hence be integrated into economic analyses even if the primary topic is “simply” efficiency, not “arbitrary” normative ideals of distributive justice.

Of course, besides the efficiency oriented economic mainstream, there are some economic scholars or non-economists working with economic tools (e.g. Roemer 1986, Sen 1990, 2010, Stiglitz 2012) who actually deal with matters of distributive justice. But even in this research area, the relationship between *perceived* justice in markets and the stability of the market system hardly finds attention. Therefore, this paper fills an interesting gap in the research field located between "justice" and "efficiency". The main issue we investigate is how far de facto existing income immobility in market societies affects the acceptance of market determined individual incomes. Our overall hypothesis is, drawing from Dworkin (1981a, b): in case incomes are partially determined by factors beyond the control of the individual, then the argument that markets create just outcomes with respect to production effort loses its attractiveness and hence the merit based *justice* argument pro markets no longer can be upheld—which in the end challenges support for the market as an *efficiency* guaranteeing allocation tool.

The actual distortion we focus on is income immobility. Given that incomes (above, at, and below average) tend to reproduce largely independent from individual work effort, people may—and do—doubt that incomes generated in a "free market" are either just or efficient. They are not fair since the fundamental principle of proportional equality (Buchanan/Mathieu 1986) is not met, i.e. industrious ones might not get the high pay they deserve while unproductive individuals may simply live from what they inherited without contributing to the production of the wealth they partially consume. It is also inefficient since the core condition of (neoclassical) efficient markets is not met: marginal product and marginal income are not equalized, distorting allocative efficiency (cf. Worland 1986). Since there are several possible ways how to deal with the presented mismatch between effort and pay (from opportunity equalizing measures like a 100% inheritance tax to believing in evolutionary solutions endogenous to the market), we followed the tradition of Frohlich and Oppenheimer (1990, 1992) and set up an economic experiment to find out what people would choose under income immobility in a simplified laboratory environment where individual income is only partially determined by work effort and largely by "inherited income". Overall, participants were strongly concerned about guaranteeing a decent income for every-one (coming close to Rawls's 1971 difference principle), but still did not opt for pure egalitarianism for both efficiency and justice reasons. While too high income differentials were rejected by most participants per se and especially given income inequality, pure equalization did not find support either since some positive relationship between effort and income should prevail in order to keep economic incentives alive and to reward the more successful ones for their higher effort.

The remainder of this paper is organized as follows. In section 2, we demonstrate that income immobility is an important aspect in market societies and that it deserves more attention in academia even if one is only concerned about efficiency matters. In section 3, we briefly describe the famous Frohlich and Oppenheimer (1990, 1992) experiment based on which we developed our own experimental design described in section 4 in detail. Thereafter, we present several hypotheses we tested with our experimental setup and the experimental findings are presented in section 5. The final section concludes, drawing especially from mixed methods research, i.e. combining both quantitative and qualitative data which as such is new in experimental economics.

2 Allocative Efficiency, Distributive Justice, and Social Immobility

2.1 Need and Desert, Effort and Luck: On the Justification of Unequal Market Outcomes

The most general issue in the context of distributive justice is: equality or inequality? Are people to be seen as equals, throughout all dimensions of human being, or are we basically all different, deserving idiosyncratic treatment and individualized shares? Aristotelian equity theory bridges between equality and equity, transferring the question to a higher level of overarching equality: equals should be treated equally, unequal ones unequally (Buchanan/Mathieu 1986). Accordingly, the question at hand is not whether people are to be treated equally, but in what contexts and according to which criteria inequality is justified. While some highlight the aspect that all people deserve the same because our *needs* are similar or even identical (hence we are all equals), others stress the fact that people deserve differently since we all exert different *effort* in production (our entitlements are unequal).

Markets are *the* place where unequal talents and different effort inputs meet, with the potential to promote decentrally organized acts of mutual improvement. The market, however, is not the place to expect great equalization, but rather to see the talented and industrious prosper, while the less talented and effortless will suffer. Even though individuals enter markets with different endowments: the market as such is neutral, even brutally unbiased. Consequently, market-coordination produces incomes from very high to very low levels. A couple of related discussion could be started at this point, for example how far the natural distribution of talents calls for political measures to equalize opportunities (Dworkin 1981a, b), or if this violates natural ownership in one's own talents (Nozick 1974). Related to this is the question if capital ownership, especially if inherited, is a legitimate source of income at all (cf. Hayek 1960, Rothbard 1962, Friedman/Friedman 1979, Haslett 1986, Beckert 2004). Both issues play a role in explaining the persistence and reproduction of inequality in market democracies where people have the same political rights but are confronted with significant unequal outcomes in the market (Okun 1975).

First, unequal market incomes can be perfectly compatible with proportional justice. As such, people tend to approve unequal outcomes if differences can be attributed to *personal factors* providing a legitimate base for discrimination. High effort leading to high incomes e.g. is a generally accepted inequality; pure luck driven inequalities on the other hand are not widely acknowledged.[1] Second, being born into a high-status family and therefore having access to certain educational resources and other opportunities not open to everyone, creates a real challenge to free markets. If not everyone enters the competitive field with similar starting conditions, individuals with otherwise similar talents, e.g. equally intelligent or industrious, may realize different incomes (see Davis/Moore 1945), which then may reinforce and even widen the initial unequal starting conditions. Inequalities being attributable to such *social factors* usually are not considered just and therefore are not accepted. Market based income determination then loses its approval by those negatively affected from inequality reproduction. Third, inequality can be ascribed to *natural factors* given by birth like e.g. talents and IQ. Like social factors these type of inequality is not widely accepted.

From these inequalities, either the claim for adjusting starting conditions *ex-ante* arises (e.g. Sen 1999, 2010), and if this is not possible, the only solutions seems blunt and direct *ex-post* income equaliza-

[1] Lottery games might be an exception, but even there, people invest some money, and technically, everyone has the chance to participate or not. But this case, however, is of little importance for the overall argumentation.

tion, at least to the extent to level out undeserved differences (e.g. Rawls 1971). In the following subsection, we demonstrate that *persistent* income inequality can be a challenge for market societies both from efficiency and justice perspective, and why both issues are strongly related.

2.2 Income Immobility as a Challenge to Both Justice and Efficiency

Economists tend to embrace markets for their inherent efficiency, leading to greatest overall benefit from scarce resources. Real world deviations from ideal market situations shall be—according to the neoclassical logic of second best (Clark 1940)—be healed by respective efficiency enhancing governmental activity. Neoliberals doubt the success of such measures since on the one hand, such interventions require an enormous amount of usually dispersed information, such that governments most likely disimprove things; and public interventionism might be simply steered by private interests and rent-seeking activities (Buchanan/Tullock 1962). In any case, the common understanding is that markets are by and large the best tool for efficient resource allocation. Especially the neoliberal school—above all its Anglo-Saxon version—additionally argues that markets are also an excellent tool to create *just* outcomes via the ex-ante undetermined competitive game. Markets create incentives for entrepreneurial, welfare enhancing activity as well as for hard work. Under the right (standard) conditions[2], the allocative results from markets are not only efficient, but even fair: high incomes go to productive firms and workers, low incomes to the less industrious ones.[3] Even neoclassical economists who do not directly highlight "justice in market allocation" secretly adhere to this ideal: the mathematical equalization of the marginal product from capital or from labor to the marginal utility of consumers and the marginal profit of firms is nothing but the necessary condition for welfare maximization (Worland 1986), the neoclassical normative ideal. Macro-level justice "welfare maximization" implies micro-level justice in the form of the marginal optimization conditions which comes close to the implicitly normative ideal of distributive justice as expressed by neoliberals.

Accordingly, both neoclassicals and neoliberals must be concerned about real world obstacles to a smooth working of markets. On the one hand, efficiency is endangered; on the other hand market-based justice is violated. One such "friction" in the smooth working of markets is income immobility, which we take as the most important factor causing social immobility, since income directly is an indicator for social status, and allows for the acquisition of goods and participation in activities which as well determine one's status in society.

As a matter of fact, in real-world societies in which real markets are the place of resource allocation—with labor being a resource and individual wage income being the monetary compensation for it—, incomes are never as flexible as actually necessary for the above described mechanism to work. So neither can one expect allocation being efficient nor just if both high and low incomes tend to reproduce themselves, and thereby exclude potential individuals from job positions, as found by a vast number of sociological studies (Boudon 1974, Shavit/Blossfeld 1993, Johnson 1996, Neckerman 2004, Marger 2005, Butler/Watt 2007). Persistent inequality first of all becomes a matter of observation, explained by various sociological theories. Very often, such studies develop some hidden criti-

[2] Ideal neoclassical markets need sufficient information (usually full information on both production and consumption side is assumed), and market power as well as externalities must be absent. Neoliberals would highlight, following Hayek (1945), that full information is actually not necessary since markets are the best place to make rational decisions even without total knowledge about all instances, and that market power might simply be the result of efficient resource allocation in markets where large enterprises are simply superior to small scale business. The problem of externalities unfortunately receives little attention in neoliberalism.

[3] The problems of not realizing enough to manage bare survival can be solved by carefully used welfare measures. These should—optimally—enable the beneficiaries to earn their own living in the end. Permanent alimentations should be the exception for those generally unable to make a living, like children in need and the disabled.

cism concerning the “unfairness” of income inequality. Reproduction of inequality, especially of low incomes, is considered the result of forces beyond individual control which call for political action, breaking vicious cycles in which large parts of the population are left behind against their will. In democratic societies where everyone should be able to participate in society at least to some extent, this is a crucial problem.

Economists, on the other hand, focus their attention on the efficiency losses from such “unexploited” potentials. People who have no actual change entering the labor market cost society enormous sums both because of direct support and due to the forgone production potential. Education and other measures lifting unemployed or low skill workers to higher production levels—or first of all to an integration into the labor market—hence are simply necessary to increase economic efficiency.

At this point, integrating these two perspectives becomes crucially. Empirical data give clear evidence that there exists a general dissatisfaction with “the system”, i.e. with market based income determination, in cases where people have the impression that hard work does not pay. The perspective of being part of “the working poor” (Shipler 2005) or of being permanently excluded from the labor market deters incentives to try hard and perform well. If the widespread feeling is that hard labor—including individual investment in education—does not pay off at the market, then support for the market economy is going to drop. This is even reinforced if at the same time, high level income groups seem to be able to maintain their living standard and social status without productive efforts, since they have the necessary political and economic measures at disposal (lobbying, tax evasion). An amalgamation of such factors represents a true threat for market economies and the political system standing behind it, as the current revolts in Greece and other South-European countries show. If the believe in markets giving to the industrious and punishing the lazy erodes, the very fundamentals of widespread support for markets is at stake. If people lose trust in the fairness of the market game, economist must worry about much more than case-wise inefficiency, but about the stability and support of market economies as such”. The “tolerance premium”—buying the support from systematic market losers by welfare measures (Buchanan 1975, Wyss 2011)—might simply rise to unsustainable levels. The necessary redistribution might achieve such high levels of taxation and direct payments that there is not much space left for actual market activity. So even if one is only interested in efficiency and utility maximization, one must hence not neglect how far people perceive existing income immobility being high enough to undermine the working of the market, delegitimizing market allocation as such.

Surprisingly little attention has been drawn by economists to existing income immobility. The topic, being subsumed within distributive justice and equality claims, has largely been left to sociologist and philosophers. Those, on the other hand, systematically neglect the economic importance of the issue and competition, focusing largely on the self-reflective dynamics of inequality reproduction. Correspondingly, the question how far income inequality undermines the legitimacy of market systems remains widely ignored. What we are hence interested is: in case people are clearly confronted with the fact that individual incomes are not entirely coupled to individual performance, how far does this fact affect their support of market allocation? Would people largely tend to organize income distribution by political measures instead of relying on markets, given that both high and low (as well as medium level) incomes reproduce mostly independent from one’s own effort?

3 Difference Principle, Utilitarianism, and the Frohlich-Oppenheimer Experiments

3.1 Rawls's Justification of the Difference Principle and Its Perception in Economic Theory

The revival of political philosophy by John Rawls's "A Theory of Justice" (1971) affected and inspired experimental economics in the late 1980s. Rawls, as it is widely perceived, revived and revitalized the philosophical reflection on political issues after a break of about one and a half centuries, resorting to an even older philosophical paradigm: contractarianism. Despite—or maybe because of—the praise he received, Rawls has been being criticized harshly for many of his positions. Rawls started his contractarian enterprise in order to present a well-funded alternative, even solid rejection, of utilitarianism. Based on a long-standing tradition—especially following Kant—he argued that from the perspective of a universalized perspective, no rational individual could ever consent to utilitarian thinking. Utilitarianism inherently puts at stake the rights and well-being of any individual for the sake of some higher goal, which is overall utility respectively welfare (being the sum total of individual utility levels). No-one, Rawls argues, could rationally accept a normative theory which in the end justifies the sacrifice of one's own liberty and rights for the sake of others, even if this means the total overriding of basic rights of someone disadvantaged to make others better off: the trade-off nature built into utilitarianism in the end justifies misery for some as long as it is overcompensated by pleasure for others. The well-being of the individual hence is permanently at risk, being "swallowed up" by a utility maximizing society. In the words of Rawls (1971: 27): "Utilitarianism does not take seriously the distinction between persons."

The most important tool for Rawls to reject utilitarianism is his "veil of ignorance" (Rawls 1971), behind which everyone is deprived of idiosyncratic information. Thereby, Rawls offers a formal way to generate a situation of impartiality. Impartiality[4] enables everyone to decide on rules for society which can claim *general* validity, hence which are not distorted by individual and hence arbitrary influences. This way, as Rawls (ibid.) perceives it, everyone is formally enabled to derive conclusions in line with Kant's *Categorical Imperative*. So, if one does not know about one's own position, one naturally must take into consideration the position of everyone in society, which in the end means: one necessarily does not only care about the benefits from a certain act for person *A* (who one happens to be in the unveiled situation), but also about the misery of person *B* going along with it. Rawls concludes that in such an "Original Position" (OP), meaning a decision environment with a perfectly thick veil, the overriding of individual rights can never be rational for the respective decision maker, since he or she finally risks harming herself: if one cannot exclude being a slave in a slaveholder society, one cannot rationally agree to slavery behind the veil.

Rawls finally derives three[5] principles of justice based on what a rational decision maker would choose behind the veil, namely (1) *maximum equal* liberty for everyone, (2b) "fair equality of opportunity" concerning the access to public positions and offices, and his famous (2a) *Difference Principle*

[4] One may object that in the end Rawls does not present create impartial individuals (introduced by Adam Smith 1759/2011), who have no stakes in the decision, but "veiled stakeholders", who are finally affected by the decision. A perfectly thick veil should make this distinction unnecessary anyways, but for the remainder of this paper, we do not rely on this distinction in too much detail, even though it might reoccur in the discussion of the experiment by Frohlich and Oppenheimer (1990).

[5] In his own text and the reception of Rawls (1971), one usually counts two principles, of which the second one is divided into two sub-principles. In our text, we follow Rawls enumeration of principles 1, 2a and 2b (and introduce 2b before 2a).

(DP), in economics often represented by the formal decision making rule called *maximin.*[6] The DP means that all *primary goods*—all goods of which one wants more, not less—must be distributed to the advantage of the worst off (group). This in the end is a logical conclusion from Rawls's rejection of overriding individual (political) rights in the first place. The problem with loosing such rights is that a person no longer is able to realize her own life, lacking the formal instruments necessary in a modern society. By the same token, Rawls derives why not only formal, but material rights—not only negative, but positive rights (cf. Berlin 1958)—are needed and hence must be of highest importance for the veiled individual. Formal rights are most important, as stated in the first Rawlsian principle, but enjoying them requires also some material means. Rawls rejects the classic liberal notion that formal, negative rights are sufficient for an individual to achieve it life goals, but calls for a materialization of such rights by the indispensable economic[7] means, making Rawls a *social* liberal.

For the remainder of the paper, we will concentrate on the interpretation of Rawls's theory which reduces it to a discussion of the maximin-rule, being well aware of the stark under-complexity of this perception. For economic theory, Rawlsianism hence can be reduced to the problem: given a certain set of alternative of resource allocation schemes within a society, people should choose the one arrangement which maximizes the primary goods endowment of the worst off individual. Primary goods are, representing another reduction of Rawls's theory, to money, and being part of a science based on methodological individualism, economists concentrate on the worst off *individual*, not *group*. Even though from a philosopher's view, such a severe reduction may deprive the Rawlsian enterprise of its very essentials, we think it is not illegitimate to translate it into the necessarily reduced economic remainder, a point we will dwell on more deeply when describing the Frohlich-Oppenheimer Experiments. Before getting there, it is necessary to present the main arguments of those defending utilitarianism against the Rawlsian attack. The most famous counterattack comes from economist and philosopher John Harsanyi.

3.2 Harsanyi's Utilitarian Counterattack on Rawls

The rigorousness of the difference principle, however, has been heavily criticized. Especially John Harsanyi rejected the conclusion that individuals supposed to make decisions in a veiled situation should resort to a maximin solution (Harsanyi 1975). Harsanyi actually was the first one to introduce the formalized perspective of veiled decision making in a hypothetical original position (Harsanyi 1953, 1955). According to him, the factual maximin outcomes suggested by Rawls's DP amount to decision making behind the veil by an infinitely *risk averse individual* (Harsanyi 1975). Such behavior, he argues, can hardly be called "rational" because maximin would imply the following: assume two options *A* and *B*. *A* stands for a nearly sure gain, but coming with a very small risk of losing a significant amount (or even one's life). *B* is a sure event realizing a very small gain, but hence not coming at the risk of any loss. According to Harsanyi (ibid.), the Rawlsian solution means to let forgo the nearly sure enormous gain (Harsanyi uses the example of an excellent paying job) because of *irrationally* fearing the tiniest possible loss (in this case, the unlikely event of dying in a plane crash on the way to the new job). Following such a strategy, people were doomed to never even cross a street

[6] Of course, from a philosophical viewpoint, one must carefully distinguish between the complex derivation of the DP and the mathematical decision rule named *Maximin*. The latter is a formalization of the first. In the economic discussion, usually the elaborated justification of the *DP* is skipped and the principle is reduced to the formal application of Maximin, since in the end, the *outcome* is the same, which in economistic consequential contexts is all what matters. We will also follow this economic convention, but want to make clear that this is a simplification.

[7] Rawls speaks of primary goods, a category compatible with economic theory—especially the neoclassical one. "Rights" are harder to incorporate, despite the crucial role of property rights in the real economic sphere, a point which is basic for *(New) Institutional Economics* and *Constitutional Economics*, in which the Rawlsian enterprise is widely accepted.

(ibid.)—a kind of behavior of course neither observed in reality not accepted as rational by anyone. A maximin-decider hence must occur to the reader as a neurotic fellow, not what one would consider mentally sane and rational in any sense. Even if, as Harsanyi continues, there are no clear probabilities given to the decider about how likely gains and—even existential—losses are, people would in any case estimate such probabilities, using their best (but of course limited) knowledge.[8] Hence, the Rawlsian argument that a rational individual always must take the worst case especially into consideration and give it overarching attention if it concerns basic life issues does not seem convincing. Harsanyi concludes that, facing several options with different outcomes, a first good guess is to assume equal probability for each event to occur. So as long as there is no sufficient reason to argue otherwise, the rational decision maker behind the veil, not knowing how likely the best off, the worst off and all other positions in between are, would act most rational just to put equal weight on each alternative. In mathematical terms, this amounts to draw attention only to the *average* outcome (in utility units, or in monetary terms). Since rational people want to maximize their outcomes, the rational decision rule behind the veil therefore must be *maximizing average utility*[9] (or maximizing average income among several options with high and low income options) in accordance with the von Neumann-Morgenstern axioms of rational decision making (Harsanyi 1955). Deviating from this rule may be explained by risk attitudes other than neutrality (which is the rational default (ibid.)), which usually means some degree of *risk aversion*. In the words of Roemer (1996), the different results from veiled decisions concerning distributional rules—maximin versus maximizing the average—hence can be explained by different degrees of risk aversion.[10] Consequently, rejecting infinite risk aversion implies rejecting the maximin rule as a rational option, and correspondingly Rawls's DP.

3.3 An Empirical Test: Rawls vs. Harsanyi in the Laboratory

3.3.1 The Empirical Challenge to Transcendental Arguments

Can we *a priori* expect one single solution about how resources should be distributed, in case we follow the formalized version of veiled decision making? Does pure reasoning suggest one unique principle? It seems not, otherwise there could not be room for two conflicting answers provided by non-empirical argumentation alone.[11] If so, then the only solution to the problem can be an empirical investigation of the matter. If one directly follows Roemer's argument and ignores the potential *a priori/a posteriori* dimension, the whole debate as well calls for an empirical test how large the risk aversion *actually* is in case people are placed in a veiled situation. This is, by and large, the approach followed by Norman Frohlich and Joe Oppenheimer (1992). They basically argue that this unresolved dispute could be partially resolved by approximating a veiled decision making environment, where real people, not idealized deciders in a hypothetical OP, are supposed to decide on distributive principles. The necessary artificiality of the Rawls-Harsanyi OP does not allow looking at some real life situation where people perfectly are aware of their own position and situation. Hence, the best intermediary

[8] This argument is in line with the finding that human behavior is organized by heuristics see Khaneman/Tversky (1979), Kahneman/Slovic/Tversky (1982).

[9] In a given society with a fixed number of individuals, this is equivalent to maximizing the sum of utilities, i.e. welfare. The problem of interpersonal utility comparison which usually arises in this context is actually circumvented by Harsanyi since the comparison between individual options is, behind the veil, transformed into a comparison of options inside the mind of one individual only.

[10] See also Wolf (2010) on the formal representation of the veiled decision as a function of risk aversion, but also on the general debate between Harsanyi and Rawls whether utilitarianism is *the* rational option for distributive decisions or, on the opposite, to be rejected. For a detailed discussion on the Rawls/Harsanyi debate see also Binmore (1994, 1998, 2005).

[11] Which at least seems problematic for Harsanyi's *empirics-based* rejection of the DP.

construction between empirical reality and the philosopher's mind could be a controlled lab, in which the OP is approximated as good as possible.
Such an approach of course must raise criticism by philosophers. The idea of the OP and the veil, as the argument may go, is exactly its non-empirical, i.e. transcendental nature. An empirical approach to the Rawlsian (and therefore also Harsanyian) construction hence necessarily must fail. But: with critical-rationalist counterargument one may point out that a theory which tries to evade falsification and any contact with empirical content is largely useless. Rawls (1971) himself does suggest that his theory must have relevance for "reality", since it must affect the reflective equilibrium of individuals. Hence, seeing it from this perspective, any "real world" test of the Rawlsian theory is justified, and, being non-ideal, must come at some "transfer cost". In other words: the fact that an empirical test like the Frohlich-Oppenheimer experiment does not fully reproduce the transcendental arguments therefore is built into the very enterprise of facing reality. So one might criticize the experimental design, but not the experimental approach as such without being accused of immunizing Rawls against the reality of the outside world.

3.3.2 Even if the Rawlsian Veil Cannot be Replicated, Experiments Create Insights

Given the inherent gap between the Rawlsian OP and any real-world approximation of veiled decision making, we would not claim to have designed an experiment to rigorously test the Rawlsian distributive principle versus the utilitarian norm. What, then, is the purpose of experiments simulating veiled decision making, if one cannot really reproduce a *thick veil*? Less ambitiously, we argue that experiments like our own are—at the best possible rate—an *approximation* of veiled democratic decision making with uncertainty about individual performance. Even though we are not able to reproduce—since this is impossible anyways—a fully blown OP, the experimental situation still is an improvement to simply gathering empirical data from reality. As shown in section 2, the question how social immobility affects the legitimacy of markets has not been asked, at least from the integrative perspective of *both* the economic perspective of efficiency *and* the sociological viewpoint concerning reproduction of inequality. The overall result very well could be that people accept markets *despite* perceived unfairness, since they are still considered as the more efficient allocation mechanism compared to governmental goods provision. As well, people might also embrace opportunity equalizing measures, but not for the reasons suggested by economist who point out efficiency gains, but simply because otherwise the support for markets ceased since basic fairness norms are violates. For sure, one could generate some answers by integrating such aspects, but we are convinced at least additional insights can be gained from a *somewhat* artificial experiment, in which real-world complexity is reduced on purpose to avoid multiple parallel causalities working. The entire experiment hence stands in between the normatively ideal OP—at least if we follow Harsanyi (1955) and Rawls (1971) in their judgment—and the overwhelming complexity of real life. By isolating the most relevant factors under controlled conditions, we hope to come as close as possible to a normatively attractive decision making environment, but always keep in mind the limitations of the undertaking as such. The above presented setup should allow us to test a couple of exact hypotheses one might derive from the general one that social immobility can challenge the legitimacy of markets since it threatens fundamental fairness perceptions. We now turn to the hypotheses we formulated in accordance with the theoretical framework developed in section 2, and what results were produced using both qualitative and quantitative data.

3.3.3 The Frohlich Oppenheimer Experiment with and without Production Effort

In their seminal work "*Choosing Justice. An Experimental Approach to Ethical Theory*", Frohlich and Oppenheimer (1992) describe an experiment they conducted exactly addressing the above presented

question: in a veil-approximating setting, would individuals opt for the Rawlsian maximin solution, or rather decide in accordance with Harsanyi's average maximization?

The design of the experiment was the following: Frohlich and Oppenheimer let groups of five persons unanimously decide on distributional principles. Unanimity is a necessity due to the contractarian core of the Rawlsian enterprise. In the ideal OP, the veil should actually render people identical. Stripped of all idiosyncratic information, including individual preferences, it does not matter who in the end makes the decision—everyone would argue and conclude the same. Equivalently, agreement by one individual implies agreement by everyone: unanimity. Anything but consensus in the lab would then indicate that the decision is not veiled, even though consensus cannot be a guarantee for a working veil, as argued above.[12]

In total, 85 student groups from the U.S. and Poland participated in this test. The participants had to choose from four different income schemes, each containing five income classes ranging from low to high. The hypothetical year income distributions the students were confronted with are presented in table 1:

	Income Distribution			
Income Class	***1***	***2***	***3***	***4***
High	$ 32,000	$ 28,000	$ 31,000	$ 21,000
Medium high	27,000	22,000	24,000	20,000
Medium	24,000	20,000	21,000	19,000
Medium low	13,000	17,000	16,000	16,000
Low	12,000	13,000	14,000	15,000

Table 1: Distributional schemes participants had to choose from, representing "yearly dollar income for a household" (Frohlich/Oppenheimer 1992: 38)

Before face-to-face discussion took place, students were introduced to the main distributional rules as discussed by Rawls (1971). Rawls had presented three alternatives to the DP which he finally all rejected in favor of the latter. Frohlich and Oppenheimer informed all participants about these four possibilities, but also allowed for the development of any other solution by the participants themselves. The four principles were

1. Maximizing average income.
2. Maximizing the average, subject to a minimum income (floor).
3. Maximizing the average, subject to a maximum distance between highest and lowest income (range).
4. The minimax-solution.

In case group discussion and voting would not lead to consensus and people would declare unanimity impossible, a random selection of one principle would take place. In case unanimity was found, each person would be allotted one of the above income groups by chance, and a fraction of the hypothetical

[12] One hence could argue that the actual test was one of a laboratory ethical discourse. Then, the question could be if the laboratory represents an ideal speech situation according to Habermas (1983). This could be another interpretation of experiments conducted similarly to the Frohlich-Oppenheimer design.

yearly pay was received.[13] The veil aspect of the experiment, as Frohlich and Oppenheimer argue, results from the *ex-ante* lack of knowledge in which position one later will end. Hence, individuals are forced to take *all* different positions into consideration when negotiating a solution.[14]

How does Table 1 relate to the above principles? Careful observation shows that, assuming equal probability for ending up in any of the five income classes, that the average income decreases from distribution 1 to 4, as well as the range between high and low income. The respective figures are added in table 2 to the initial one (not presented to the participants). In case a group unanimously favored the DP, the rational decision would be scheme 4. If the favorite principle were maximizing average income, then option 1 is would be selected. In case options 2 or 3 were preferred, a group of course had to specify a certain floor or range, otherwise the decision remains underdetermined. Additionally, individuals were asked privately for their own favorite scheme, again including a statement concerning floor or range if necessary.

	Income Distribution			
Income Class	***1***	***2***	***3***	***4***
High	$ 32,000	$ 28,000	$ 31,000	$ 21,000
Medium High	27,000	22,000	24,000	20,000
Medium	24,000	20,000	21,000	19,000
Medium Low	13,000	17,000	16,000	16,000
Low	12,000	13,000	14,000	15,000
Average	*21,600*	*20,000*	*21,200*	*18,200*
Range	*20,000*	*15,000*	*17,000*	*6,000*

Table 2: Distributional schemes by Frohlich and Oppenheimer (1992: 38), averages and ranges added.

The results from all 85 sessions were clear (Frohlich/Oppenheimer 1992: 60): the maximin solution almost never got chosen; neither did unconditional average maximization do well. The overwhelming majority opted for a maximum average constrained by an income floor. This result was independent from cultural differences, since in the late 1980s when the data was generated, Poland was still under communist rule, and the U.S. represented the forefront of capitalist market economies. Figure 1 summarized the outcomes.

[13] That way, the hypothetical income level was coupled with actual payoffs, creating the usual incentives in economic experiments. Unlike in psychological experiments, people do not get paid a flat fee for participation, but most often can affect the height of individual or group payoffs (sometimes both) by their own behavior.

[14] Again, the negation element may suggest more of a discourse nature of the experiment, rather than a truly veiled decision making situation.

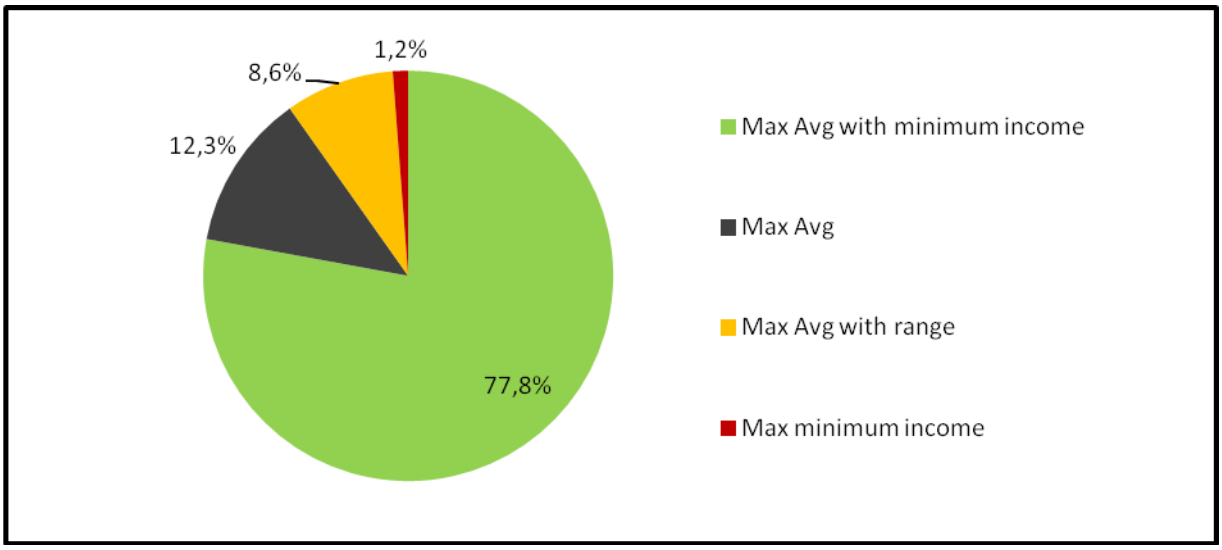

Figure 1: Choices for distributional schemes, percentages from all 85 groups (Frohlich/Oppenheimer 1992: 60)

As long as participants receive income without any effort apart from negotiating, the argument stands that the entire experiment is more a gamble than a decision on how to distribute labor based income. Therefore, Frohlich and Oppenheimer (1990, 1992) augmented the initial design[15] and let students participate in a production game (counting spelling mistakes). The more points achieved in the production phase, the higher the final income. Like in the initial setup, the group had to decide on potential redistribution of earned incomes after production via a tax and a transfer system. Despite the fact that redistribution was no longer affected by fortune, but money had to be earned, students still decided for distributional schemes realizing a minimum income with otherwise unconstrained income maximization (Frohlich/Oppenheimer 1990).

The introduction of production effort into the experiment for sure presents a major move towards realism. Even though experimental economists strongly advise the simplest possible design, a setup subject to the above raised criticism that earned income might be valued different from a lottery gain for sure is better changed towards a more realistic design, even if only to show that the initial, more simplistic version yielded similar results. As presented in section 2, we are interested in the issue of how income immobility affects choice. The general design of the Frohlich-Oppenheimer experiment including production seemed excellent to us. We just needed to tailor certain changes in order to create a setup to be able to reproduce the basic mechanism we want to investigate. The necessary modifications and the reasons are presented in the next section.

4 "Choosing Justice in Experimental Democracies with Production"—and Income Immobility[16]

Our own experimental design first of all combines elements from both versions published by Frohlich and Oppenheimer in 1990 and 1992. Since the design of a tax based redistribution scheme added on top of the income immobility element seemed to complex, we decided to use a similar income matrix

[15] Even though conducted later, the augmented version was published earlier (in 1990) than the book-length version of the initial design (published in 1992).
[16] The quotation marks indicate the title of the1990 paper by Frohlich and Oppenheimer.

as presented in figure 1, but ran a competition for the different positions. So the overall results are not as dynamic and open as in a system in which (1.) some undetermined income production happens which (2.) is changed *ex-post* by taxes and income subsidies in accordance with an *ex-ante* chosen principle. The advantage, however, lies in a clear picture how redistribution affects the income levels of different income classes.

Since in real societies, actual decisions on distributional issues are made by majorities, not by unanimous agreement, we chose to request an absolute majority for one scheme, not consensus. In order to avoid the problem that within too small groups, decision making de facto is not anonymous, we increased the group size to nine individuals. Compared to one specification with 16 participants and one with five, nine proved being a well-working compromise between anonymity and groups being small enough to allow for statistical variation.

Accordingly, we created one income level per participant, and offered again four different distributional schemes. Translating 1990s US-Dollar to 2011 Euro incomes, plus introducing some more spread outs at both ends of each scheme, we constructed the income matrix shown in table 2.

Position	Scheme A	Scheme B	Scheme C	Scheme D
1	300.000	240.000	250.000	120.000
2	240.000	230.000	190.000	120.000
3	190.000	140.000	130.000	120.000
4	140.000	130.000	120.000	120.000
5	120.000	120.000	100.000	120.000
6	60.000	110.000	90.000	120.000
7	50.000	50.000	90.000	120.000
8	30.000	40.000	70.000	120.000
9	10.000	30.000	50.000	120.000

Table 2: Income schemes available to deciding groups (authors' compilation)

Like in the 1990 paper by Frohlich and Oppenheimer, we used a production game to determine income positions within a given scheme. Simulating free choice of occupation, participants either had to answer simple multiplication problems (as many as possible within 90 seconds), or find words in a crossword puzzle (as many as possible within 5 minutes). The more correct calculations respectively words found, the higher one's income class. Each word or solution yielded one point, and we added four points to the crossword results of each student who had opted for the language task. Earlier tests had shown that this way, an average participant would yield close to identical point numbers, a piece of information communicated to the participants beforehand, just like the overall instructions of the experiments which the students received before starting the actual test.

The first round of a session comprised the following steps:

1. Participants were presented the four different distributional schemes as in table 2.
2. The group could discuss the schemes for up to 30 minutes.
3. Once the group as a whole decided to end discussion, a secret vote took place. This either directly determined a scheme, or a run-off between the two most popular alternatives followed.

4. After the distributional scheme had been chosen collectively, individuals chose which production game to play, i.e. between a crossword puzzle or mathematical problems. Puzzles and problems were identical for all players.
5. After the production phase, the points were counted (and normalized between crossword puzzle and problem set) and the corresponding ranking determined. In case of identical point numbers, we tossed a coin.
6. The rank number determined the income position, i.e. the best performing students yielded position 1, the second best one position 2, etc. Together with the initially determined income scheme, the position determined the hypothetical income according to table 2. The information on both rank and hence income was communicated privately to each participant.

The crucial point is to repeat this sequence in a second round, with the following important extension: like presented above the income determined in the second round only counts with 20% weight. The remaining 80% of the income from round two is inherited from the first one. So parts of the income were transferred from round 1 to round 2 "as-if inherited", thereby simulating the existence of income immobility (as observable for Germany and other market societies; cf. Atkinson/Bourguignon 2000).

Apart from their effect on final income, the two rounds also differ with respect to information available for decision making. Before choosing the scheme for the first time, no-one knows how well he or she will perform in the production game. People might speculate on their talents and also try to somewhat steer the outcome by choosing one's preferred occupation, but as such, individuals are ignorant about their future success. This works at least partially like a veil. Whether it works more like a thin veil of uncertainty as formulated by Buchanan (1975) or a very thick Rawlsian veil of ignorance, we are not concerned about as such. The imperfection of the veil remains in any experimental setting, but at least a very fundamental part of idiosyncratic knowledge is not available during decision making. Compared to a pure discourse ethic environment, where people debate while having full knowledge about their capacities and situation, we are far closer to veiled decision making.

In the second round, people already have received information about their overall performance, since they privately know how well they performed in round one. Hence the veil is largely lifted. Still, some uncertainty remains concerning the *future* results in round two, but it seems very unlikely for someone e.g. ranking two out of nine to fall down to position eight or nine.[17]

Despite the lower impact of income from round two, the sequence as such is identical to the first one. Hence, after discussion, the group again votes on the income distribution, agreeing to the same or a different choice, and people again participate in the production game. Like in the collective choice case, everyone is free to keep or change the decision made in the first round.

Finally, the hypothetical incomes from both rounds (Y_1 and Y_2) are added (to Y_{total}) and divided by 10,000 to determine the actual payoff each participant (Y_{real}). Thus the final amount a student takes home from the experiment hence is

$$Y_{real} = \left(1 \cdot Y_1 + 0.8 \cdot Y_1 + 0.2 \cdot Y_2\right) / 10{,}000$$

After conducting the experiment, several participants have been interviewed with semi-structured guidelines in order to reconstruct the individual arguments driving the decisions and to allow for a

[17] We are aware of the fact that at the same time, the income gained in round two counts much less. In order to control for this effect, we will have to run an additional setup with equal weight on both rounds, i.e. with zero income immobility. This and other interesting as well as necessary modifications are discussed in the conclusion section.

mixed-method approach. Such an approach is new in experimental economics, but we are sure it is a fruitful combination. Like in any standard economic experiment, we derived hypotheses from theory which were tested statistically. But on top, we generated qualitative data which helps us interpret and explain the qualitative results. It is important to notice that our aim is not to quantify qualitative results, like creating intensity scales for verbally expressed statements. In contrary, adding qualitative data spans an additional dimension beyond statistical relationships, which sometimes are not too easily interpreted concerning causalities or behavioral motives. Moreover, the quantitative findings provide a reliable base to check if stated motives are in line with actual observed behavior.

Together with interviewing and the initial introduction to the experimental setup, the entire sequence of one experiment session is summarized graphically in the appendix. The exact findings from our semi-structured interviews and statistical hypothesis testing are presented in the following section.

5 Hypotheses and Results

5.1 Hypothesis Generation

According to section 2, unequal incomes generated on markets seem generally acceptable, provided two conditions hold:

1. Differentials must not be too large, such that low income receivers cannot sustain their own existence. In this case, need based arguments usually overrule merit concerns.
2. Differences within incomes (sufficient for survival) must be attributable to different effort levels. Low incomes hence must be explained by deliberately chosen low work input, and high earning result from industriousness.

The question what "sufficient for survival" exactly means is a difficult one yielding no clear answer. In modern societies, discussions on how far an individual income is *deserved* from a merit perspective usually mixed with questions on how much one should earn from a *need* perspective, especially in the case of low incomes. Do house cleaners deserve more because they barely make a living (thinking not only about not starving, but about a *cultural* existential minimum), or is it because their work is not recognized enough, entitling them to a wage higher than the one they receive because of their weak bargaining power?

At this point, the experimental approach is of help. One simply can create setups where the *ceteris paribus* condition is met due to fixing all other factors, and thereby isolates the effect of interest. For example, one may construct one experiment where income varies only because of effort, and a second one where e.g. income immobility as a disturbing factor additionally enters. Even if people care about the problem of generally too low wages, the isolated change of income immobility allows for conclusions how people react to this single factor changing. Up to now, we lack a control setup without income immobility, therefore hypothesis testing calls for special care. Nevertheless we can, based on our theoretical considerations, already suggest certain trends and formulate them as falsifiable predictions.

Most straightforward is our first hypothesis, which we simply derive from the arguments presented in section 2:

Hypothesis 1: People tend to accept inequality as long as, c.p., attributable to work effort. Accordingly, we should expect a tendency towards egalitarian solutions in our setup, since the immobility effect undermines the effort principle.

The next hypothesis covers the thickness of the veil. As argued above, the veil approximation in round 1 creates much less individual knowledge about one's final success than the second round situation. Assuming people being rationally self-interested, but moderately risk averse, we expect more egalitarian choices in round 1, but a bifurcation in round 2: those more successful in round 1 should tend towards higher income dispersion, increasing their expectations, while the less successful ones can be expected to rather opt for equal distributions, raising their expected payoff.

Hypothesis 2: In round 1, individuals and therefore groups decide rather in favor of the egalitarian scheme D than the most unequal scheme A. In round 2, individuals with high performance in production game 1 tend to scheme A; low performers tend to scheme D.

In line with the incentive arguments mentioned above, schemes offering different reward structures should imply dissimilar levels of effort. Egalitarian solutions like scheme *D* in table 1 should—according Okun's (1975) "Leaky Bucket" theorem—foster far less work effort than inegalitarian solutions like scheme *A*: if everyone receives, as in case *D*, the same independent from labor input, endeavor only creates personal cost, but no gain. The chance of ending up in a higher income class creates an incentive for hard work, while the fear of ending up at the lower end additionally boosts endeavor. In our setup, one therefore should expect less effort being exerted once scheme *D* rules compared to others, with *A* supposed to trigger maximum work input. The effect should be observable by more or less points achieved in the production games. We summarize:

Hypothesis 3: Work effort depends on the scheme chosen. Scheme *D* should, c.p., come with relatively few points earned in the production games, while scheme *A* should yield higher results on average.

An implication of the imperfection of the experimental veil is that individual choice might depend on one's own preferences which are not suppressed in the laboratory setup. One plausible expectation is that students differ in their overall attitudes towards egalitarianism with respect to their disciplinary background. The often expressed belief is that ethnology or sociology students have on average a stronger inclination towards egalitarian political ideologies, while law or economics students tend to rather embrace pro-market positions. Reasons might be generally different perspectives shaped by disciplinary focuses (creating some bias). Sociologist might be more committed to critically studying and explaining market imperfections and private power relations, whereas economists largely learn about the efficiency potential of markets. Of course, self-selection into different subjects will have its impact, too. So in the end, different fields most probably attract different types of students who then could be reinforced in their general beliefs. Studies showing behavior difference between students of economics and other subjects support this hypothesis. One factor related to self-selection into disciplines can be "expected income of degree holders". Our last hypothesis therefore is:

Hypothesis 4: The expected income of graduates from different disciplines affects the choice of schemes. Scheme *A* should be chosen more often by students who can expect a higher income given their disciplinary background, while scheme *D* should attract more support from individuals facing lower expectations given usual salaries in their fields.

5.2 Sample and Results from Quantitative Data

In total, 39 students participated in our experiment until now. The first group comprised 16 students. In the second session, there were only five students, and the experiment was only used for didactical reasons in an economics seminar. The results are hence excluded from the statistics since the results

were not produced under controlled laboratory conditions. The last two sessions were conducted with groups of nine students each, which finally proved being an adequate passel size.

The three laboratory groups—containing 34 participants—robustly produced identical decision sequences. In every session, the groups voted for scheme *D* in round 1, and then switched to scheme *A* in the second part. Exact data details are found in the appendix. With respect to hypothesis testing, the following results were found:

Hypothesis 1: Lacking a control experiment without income immobility, it is difficult to statistically test our first hypothesis. Nevertheless, obviously there is a strong tendency towards egalitarianism, considering the high overall impact from round 1 on total payoffs. We want to emphasize at this point that we would rather like to interpret the voting results in round 1 as coupled with collective choice in round 2. Especially the qualitative results suggest that all groups opted for a "package deal". Concern for the worst-off position strongly drove the decision making (see below), but income equalization was constrained by efficiency concerns and resorting to merit arguments. Arguing the other way round, most individuals accepted income differences despite the immobility effect as long as considerable care was taken for everyone, translating into a quite high "minimum income". This point will be taken up again in the discussion.

Intermediate Result 1: Lacking a control setup, the first hypothesis cannot be tested directly. Nevertheless, both the dominance of scheme *D* and the overall line of argument show strong concern for maximizing also the lowest incomes.

Hypothesis 2: Using a Kruskal-Wallis H-Test, we tested for a systematic relationship between the number of points individuals gained in the first game and which scheme they voted for in round 2. The H-value for all 34 measurement points, corrected for ties, was 7.83, which exceeds the critical value with three degrees of freedom. The null-hypothesis claiming no correlation hence can be rejected. Indeed, the individual results in round 1 and the voting decision in round 2 are correlated. Given the robust pattern of all groups switching form scheme *D* to *A*, we used a Whitney-Mann U-Test for a more specific relationship. The hypothesis is that individuals opting for scheme *A* in the second round perform significantly different in the first production game compared to those electing scheme *D*. Even though we find those electing scheme *A* in round 2 being more successful in round 1 compared to participants choosing *D*, the difference is not significant. We are positive this difference could become significant if we generate more data points—as long as the so far robust pattern does not change, which we doubt for reasons presented below.

Intermediate Result 2: The results from testing hypothesis 1 are compatible with the expectation that more productive individuals opt for scheme *A* in round 2, while low performers choose the egalitarian scheme. Lifting the veil creates biases, or arguing the other way around: veiled decision makers are inclined towards egalitarian solutions.

Hypothesis 3: Calculation the average points realized by all participants yields an average outcome of 19.48 points in production game 1 and 20.58 in production game 2. Unfortunately, the change is not significant. The raise could be explained on the one hand by the more competitive situation in round 2 since all groups distributed according to the unequal scheme *A*. On the other hand, the fact that the second production result only counted as one tenth of the total result may have reduced this effect significantly. At least, it shows that the second round was not considered irrelevant, an issue further investigated in the qualitative data section.

Intermediate Result 3: Production effort did not significantly change among scheme *A* and *D*, but since scheme type and round number were always related, the expected effect might have been offset by the immobility factor.

Hypothesis 4: For all disciplinary backgrounds present in the experiment, we determined the expected yearly income for respective graduates. These amounts were tested against the voting decisions. Even though the relationship is not (yet) significant, there is a clear trend in the expected direction. Additional data points should help clarifying this issue.

Intermediate Result 4: Disciplinary backgrounds seem to affect the choice of the income schemes. Although the relationship has not yet proven significant, high income expectations (e.g. for future economics, law, engineering and natural science graduates) shift the choice towards unequal schemes, while lower expectation (e.g. for sociology or ethnology students) create a tendency towards egalitarianism.

5.3 Qualitative Results

5.3.1 A Mixed Methods Approach: Combining Qualitative and Quantitative Data

Above, we derived certain hypotheses based on the theoretical consideration of section 2. A very useful additional to ex-ante hypothesis generation with ex-post statistical tests are qualitative methods like semi-structured interviews which we have conducted after each session. Such a mixed methods approach (Kelle 2007, Tsahakkori/Teddlie 2010, Small 2011) allows reconstructing subjective perceptions from the perspective of the participants.[18] The researcher does not have to anticipate all possible explanatory hypotheses, but may find a variety of subjective reasons presented by the interviewees. Moreover, additional motives and explanations might arise which are not considered before (e.g. that students participate regularly in experiments to finance their studies). Quantitative researchers may—and often do—reject the validity of "only" subjective arguments, since science is supposed to leave the individual base of reason, looking for *objective* grounds. At this point, the qualitative data can be of help. In case hypotheses are derived from interview evaluations or participants claim certain motives for their behavior, one may straightforward move on to an empirical test of such new explanations. In case actual behavior is inconsistent with stated motivation, the interviewees' argument is refuted. Similarly, generalized hypotheses may be tested as well.

A well grounded explanation for the triangulation of empirical methods has been put forward by Normal Denzin (Denzin 1970, 1978, 1989). By combining various approaches mixed methods succeed in transcending the limitation of single methods methodologically and to enhance the quality of empirical data. By applying various methods to the same object of investigation the validity, objectivity and reliability of the findings can be controlled (Webb et al. 1966). A theoretical statement which has been tested with a couple of complementary empirical approaches generates a higher degree of validity than a theoretical statement steaming from just one source. Consequently, the need is for a fruitful combination of both quantitative and qualitative paradigm.

But sometimes individual action simply cannot be quantified. This especially holds true for giving reasons for certain behavior; so some *motivation* hypotheses—tested below—necessary call for a qualitative research design. The alternative is to declare the question "not interesting", which then amounts to a rejection of an aspect for methodological reasons only. Calling for quantitative "precision" (being

[18] Since the term "triangulation" is used very diffuse and inconsistent (Hammersley 2008: 22) and it must not necessary include quantitative and qualitative methods (Hammersley 2008: 32) we do prefer the term "mixed methods".

able to create data which is reliable, and can be generalized and controlled) even in cases where this is not applicable is a very one-sided perspective creating misleading results by either forced quantification or neglect of the non-quantifiable. We do not doubt the strength of quantitative methods as such when combining it with qualitative methods; we just argue that both quantitative *and* qualitative tools have their applications as well as their own limits. The presented combination of both methods in this paper is, as we hope, an illustration of a successful mixed methods approach, leading to results of higher explanatory power than one method alone.

Consequently, a number of hypotheses and observations are presented. They result from both interview materials we consider relevant as well as from examples of issues lying beyond the reach of quantitative testing alone.

5.3.2 Results from Interviews

5.3.2.1 Veiled Decision Making

The first interesting aspect in this experimental setting is: does it generate a situation of impartiality, at least to some degree? Indeed, many participants argued they did not know in which position they will end up and therefore had taken all kinds of different outcomes into consideration. Accordingly, one participant stated:

> B: mmmm ja das fand ich SCHON wichtig also (.) wenn man sich von anfang an fest- also (.) man man weiß ja quasi noch NICH (.:) was von einem erwartet wird und wie GUT man is (.) das heißt (.) wenn man am anfang vorsichtig is dann äh (.) is das oKAY (.) aber dann daNACH kann man ja schon sagen (.) na ich (3) für MEINE leistung würd ich lieber MEHR geld haben weil ich ja irgendwie mehr LEiste oder was weiß ich (.) also jetzt so übertragen (.) ähm (.) nich dass es jetzt ne besonders große LEIstung is son ((lachend) kreuzworträtsel) auszufüllen (.) aber (.) also ich (.) ich denk mal wenn man sich von ganz- ganz von anfang an auf eine äh kategorie hätte FESTlegen müssen und das dann die ganze zeit so BLIEB (.) also das wär SCHWIERIG weil man eben gar nich so weiß was auf einen zukommt also bei den matheaufgaben wusst ich ja gar nich was da überhaupt (.) vielleicht ist das ja dann richtig SCHWER und dann hätt ich DOCH lieber ne andere kategorie gewählt oder so (.) deswegen (.) joa [hmhm] ((lacht)) (female, law, high social strata)[19]

This result is especially important given our final observation explained further below: people mentally transferred the laboratory setting into reality, a fact shown by several statements:

> B: mmm (.) ja SCHON (..) also (3) DOCH war mir bewusst dass das ein experiment ist (.) aber es ist SCHON krass wie das trotzdem so ähm (.) ähm (.) son bischen DRUCK ausüben kann dass man denkt okay man guckt sich die leute an und denkt (.) HM man will ja SCHON NICHT unter den LETZten sein (.) und man schätzt sich son bischen EIN oder auch grad bei der kreuzworträtselsache ah es wird halt hingelegt und erst die namen noch nicht umdrehen und dann denkt man schon so oh krass wie so ne klausur oder prüfsituation (..) und auch (.) ja ist auch SPAnnend auf jeden fall wie man dann abschneidet (female, sociology, low social strata)

> B: ähm ich kann die FRAGE glaub ich nicht beantworten [hmhm] also ich hab jetzt ehrlich gesagt nich drauf geachtet ob ichs jetzt irgendwann ausgeblendet hab oder nicht JA vielleicht während der MA-

[19] All interviews have been conducted in German. For the purpose of a discussion paper they are presented in the original language. The fact that qualitative approaches are narrative approaches relying on spoken language making a translation quite difficult is one of the reasons why qualitative approaches have no major influence in economics since a translation problem arises which does not exist if one uses the universal language of mathematics.

> THEaufgaben [hmhm] genau (.) dass DA n bissle der ehrgeiz war ich muss jetzt durch ich muss jetzt durch und da (.) verbinde ich es jetzt nicht UNBEDINGT mit dem experiment an SICH [hmhm] ja (male, history, midle social strata)

So our conclusion is that the hypothesis "Individuals argued as if in a position of veiled decision making" can be largely supported. Of course, not everyone was concerned about anything but his or her own fate, and the veil—mainly determined by the real-life status—was not thick enough to fully blur individual characteristics, but situational, abstraction from one's own position took place to considerable extent.

5.3.2.2 Risk Behavior

One central argument for egalitarianism behind a Rawlsian veil is a certain degree of risk aversion: the more risk adverse individuals are, the more they tend to distribute equally at expense of the expected result. Although our veil necessarily had to be less thick than a Rawlsian one, we can investigate how far "gambling preferences" and hence individual risk taking affected choices. First, we found that people were quite risk averse even though the total payoff was quite small (avg. 25 Euro). One participant e.g. argued:

> B: also mein, also wie ich das, wie mir das Experiment gefallen hat. Ja, also ich fand das SPAnnend, also (.) es war halt ein RICHtiges experiment, kein versuch oder sowas und (..) also (..) also ich hatt ganz verSCHIEdene gefühle dabei, am anfang, als ich so die aufgabenstellung erfahren hab und so weiter (.) hab ich gedacht oh wie BÖse, so viel konkurRENZ und (.) ich MAG das eigentlich gar nicht und ((lacht)) ja, ich hab äh auch angst gehabt, dass ich schlecht ABschneide, weil falls (..) also (..) am anfang schon so ne so ne variante mit vielen stratifikationen gewählt wird, dass ich dann im endeffekt RAUSgehe und gar nix HAB zum beispiel (.) und meine ZEIT verschwendet hab für fünf euro oder irgendwie (.) (gleichzeitig (hmhm) ähm), aber dann hab ich mich drauf EINgelassen und grade nach dem ersten kreuzworträtsel, das ich halt (.) komplett fast (..) fast komplett gelöst hatte habe ich dann mich auch richtig gefreut und dann hat DANN hats mir auch richtig spaß gemacht (lacht) ja. (.) also es hat mir SPAß gemacht im großen und ganzen ich fands SPANnend und ich hab auch VIEL über mich gelernt dabei ((lacht)) (..) (female, sociology, low social strata)

Throughout the interviews, we found that people admitted far more risk aversion in the first round than in the second one. This, however, could be explained by two factors: on the one hand, in round 2 people had more knowledge about their own potential compared to round 1. Once information about individual performance was revealed at the end of round 1, everyone had more detailed information about where he or she would end up most likely in round 2. An alternative interpretation of course could be that risk aversion as such did not change, but subjective probabilities could be estimated more precisely given this additional knowledge. Nevertheless, people explicitly revealed more risk tendencies in round 2 compared to the first one (see quantitative results). This, on the other hand, could be induced by the lower stakes involved in the second game. However, in order to get this point clearer, we need to run a comparison setup with zero income immobility, isolating the effect from lifting the veil only.

5.3.2.3 Reforming the Distributional Rules between Rounds and Performance in the Second Game

The most robust finding so far is that groups choose the egalitarian scheme *D* first, and then switch to the competitive setting *A*. This behavior, which we call "reform", can partially be explained by the risk attitudes explained above. However, the interviews revealed two competing subjective patterns which

must be taken into account. On the one hand, due to the small outcome some students did not take this round too seriously and considered it being a "fun round":

> B: ähm: (.) mh naja ((lacht)) ich dachte (.) äh ich dachte ich wäre BESSER in den kreuzworträtseln (.) ähm aber so ist es auch okay also ja (.) es is ja (.) hat ja dann nicht son großen unterschied gemacht in der zweiten runde (..) [hmhm] deswegen so=so schlimm war das ja dann nicht oder so gut also es (.) man hatte nicht so DRUCK ((lacht)) [hmhm] (female, sociolgy, middle social strata)

> A: na bei 0,2 w=wird das halt schon sehr- äh wird halt die die erste d=die erste entscheidung und der erste durchlauf denke ich schon sehr sehr sehr stark gewichtet und der zweite (.) ist ja fast nur noch son spaßdurchlauf hatte ich jetzt so den eindruck (male, law, middle social strata)

On the other hand—and this is of much more importance for our argumentation—the second round was subjectively reframed as a "chance" to catch up respectively to use this round for *relative* positioning:

> A: ((lacht)) ähm es ging ich hätt- also ich hätt´mich glaub´noch- also ich mein´mich hat schon ein bisschen gewurmt dass ähm zwei mal eben- (.) also ein mal (?eine vom?) kreuzworträtsel und bei der zweiten runde zwei vom kreuzworträtsel besser waren hätte mich natürlich schon (.) interssiert wie ich beim kreuzworträtsel abgeschnitten hÄTTe ob ich da dann besser gewesen wär´klar ntürlich und ähm gut derähm in mathe war ich die zweitbeste (.) jaa das hätt´mich- klar natürlich wär´ich gern besser gewesen wie der andere aber ba- bei der zweiten runde weiß ich dass es sich nur um nen punkt unterschieden hat (.) naja ein mal verrechnet oder ein mal zu langsam (.) aber (.) also ich bin zufrieden aber klar natürlich ich wär´gern´besser gewesen aber ich glaub´eher vom vom anspruch an mich selber her wie jetzt wirklich um das geld zu verdienen weil wir haben uns ja eh für das modell d entschieden das heißt beim zweiten mal kams auch nicht wirklich drauf an (.) also hat nicht mehr viel rausgerissen sondern einfach nur so der eigene ehrgeiz halt natürlich ähm immer am besten sein wollen ((lacht)) (Female, mathematic, middle social strata)

Interestingly enough, so far no drop in the performance in the second round was observed. This effect can be partially explained by the possibility of students opting for a different type of game, which in reality might be interpreted as looking for a new job. Lacking enough data points at this moment, we cannot test two interesting hypotheses: one would be "Did those perform low in round 1 exert less effort in round 2?", the other one: "Did those perform low in round 1 more often change the production game type than high performers?". If the first one is rejected but the second one is not, this might suggest the idea that free choice of occupation is a strong driver of high performance even for those actually receiving less than the average worker. Such a result, which seems plausible, again would support our general hypothesis that social mobility—in the form of the possibility to change jobs—is both relevant from a *fairness* viewpoint and with respect to *efficiency*.

5.3.2.4 Attitudes Concerning Justice in the Experiment and in General

One important part of the interviews comprised individual attitudes towards (distributional) justice. Overall, within the original position we observed a consensus concerning the idea "equal pay for equal work". This implied, both implicitly and explicitly, people rejected the idea that luck should play any role in determining individual incomes either in the experiment or in real life:

> B: der begriff GERECHTIGKEIT (.) da kann man schon wieder (.) tagelang (.) DEFINIEREN also es [stimmt] (4) in der ersten runde haben wir natürlich halt die äh (.) komplette gerechtigkeit gewählt dass (.) JEDER egal von seiner äh fähigkeit das gleiche einkommen (.) erhalten hat und in der zweiten runde

> haben wir das dann gewechselt dass (.) jeder nach seiner LEISTUNG entsprechend mehr oder weniger bekommen hat natürlich in nem begrenzten rahmen [hmhm] also das heißt (.) wir haben quasi son bisschen nen SOZIALSTAAT nachgebildet von dem jeder (.) n minimum hat und danach dann eben nach seiner leistung (.) mehr oder weniger bekommt (male, economics, low social strata)

Some participants, however, interpreted it the following way: every participant should get the same payout in the experiment since everyone spent the same time and performs the same task. This attitude would actually undermine the external validity of a market economy. At the same time, we found participants stating that all they cared about was their individual payoff, hence challenging the overall observation that decision making happened under a not too thin veil[20], but which could be a rather realistic modeling of a competitive society. Most interviewees stated a motivational pattern between these polar cases: on the one hand, they execute individual income maximization. At the same time, in the discussion rounds before collective decision making, general arguments on distributional justice played a dominant role.

Consequently, we found in most interviews a pattern of social or other regarding preferences, i.e. most participants did not care only about their individual position but include others into their veiled decision making. Most participants de facto could exclude certain low income positions, but took the positions of *others* into consideration, too. In the words of one participant:

> B: also, ich hab mich halt selbst reflektiert dabei, wie ich (.) mit mit solchen konkurrenzerfahrungen umgeh so was in der GRUppe AUShandeln und ähm (3) also (.) meine EINstellung eben und so hab ich halt im vergleich dann zu anderen zum beispiel halt überdacht also weil ich das unfair fand (.) weil am anfang bei der diskusSION mit der variantenfindung da wurde so äh also so diskutiert ja ich will unbedingt so meine SECHzig euro und dann GEH ich und der rest interessiert mich GAR nicht (.) und und das fand ich dann voll UNgerecht und und und da hab ich da gedacht NEE das will ich so nicht und (3) ja da hab ich halt so über meine werthaltung und so weiter nachgedacht (female, sociology, low social strata)

This mix of motivations was found in the individual interviews again. The fact that luck does determine actual incomes to large extent, especially given the high correlation between first round income and total payoff, made most agree to the need to distribute equally. This argument was raised both concerning the normative argument what people *should* earn in the experiment, as well as the positive argument how the situation is like in *real life*, and why redistribution measures are justified in reality. At the same time, complete equalization was rejected given the adverse incentives such a system would generate—not so much in the experiment, but especially in case the principle were applied to the existing economy.

The combination of these concerns explains the robust pattern found in all experiment groups so far: option *D* in the first round neutralizes effects from undeserved luck (merit argument) and ensures enough income for everyone given the fact that everyone works and needs a sufficient income (both merit *and* need arguments). Scheme *A* in the second round adds the necessary incentive structure to keep economic performance high enough such that there is enough income to be redistributed according to need and to offset circumstances of good and bad luck. This result hence can be interpreted as a realization of John Rawls's (1971) difference principle.[21]

[20] Still, this is compatible with Buchanan's (1975) "veil of uncertainty", which of course creates less impartiality than a veil of ignorance.

[21] For sure, an additional setup is needed where average income drops from scheme A to scheme D to better represent the equality-efficiency trade off.

5.3.2.5 External Validity

These last aspects point out a very general, but extremely important aspect of this experiment and the experimental method as such: how much can one rely on experimental findings? Do they provide results transferable to reality, or is the laboratory situation a too unrealistic representation of the complexity of real life? Even though this most fundamental issue will be presented in more detail elsewhere (Lenger/Wolf/Calabrese, forthcoming),[22] we will present some very first findings.

Several participants were surprised how much they actually emotionally felt themselves in a real competitive environment, even though they *knew* they were in a rational artificial laboratory setting. Although time and again, subjects referred to the game character of the setup, they admitted repeated getting carried away by the dynamics of the interactive and competitive environment. As some participants pointed out:

> "Of course because your result is linked to the payoff at the end which means that the pressure to perform which might exist in reality also exists here (.) if you are quite into the game it is like being real."

> "Indeed, I was aware of the fact that it is an experiment but nevertheless it is whicked how it creates pressure that you watch the people and think (.) i don't wanna be the looser."

Even though others declared they were all the time aware of the game nature of the experiment, these results show at least that experimental economists do not have to fear a complete decoupling of reality and the lab. From a sociological viewpoint, this somewhat surprising match of experimental behavior and real-life behavior may be best explained by Bourdieu's habitus concept: people do not switch roles between different social context, but rather maintain their overall trained behavioral characteristics acquired in reality and act accordingly also under rather artificial conditions. Following this notion, economic behavior is rather incorporated by past experience than the result of perfect rational behavior. The initially puzzling results from the first ultimatum game tests are perfectly compatible with this hypothesis as well. People show social or other regarding preferences in the lab because they do so in real world.

6 Summary, Conclusion and Outlook

There are three general conclusions we draw from our experiment.

First of all, the decision results show that people indeed care a lot about the origin of inequality in market societies. Inequalities even if they result from merit alone do not find support: individuals opt for strong egalitarianism, which can be interpreted as choosing redistribution in a democratic society to correct pure market outcomes. Income immobility, as modeled in the experiment, is one such factor disturbing "market fairness". Additionally, pure need considerations play a role, too. In sum, markets are neither fully trusted as the place where people earn enough for survival, and actual results are not trusted since they stem from factors beyond individual control. Accordingly, too high incomes hardly are explicable by pure effort alone, nor does it seem a right reflection of individual work effort if people realize low incomes in the market. Nevertheless, merit arguments still play a crucial role for two reasons: first of all, distributive justice demands that higher effort should, ceteris paribus, lead to a

[22] The question of external validity decides the overall importance of experimental economics. If there is good reason to doubt the transferability from the laboratory to reality, then the entire enterprise seems hopelessly flawed. As we will demonstrate below, the interview data shows that this is not the case: participants actually are bound to their habitual behavior from reality to the laboratory, which suggests that despite the artificiality of designed experiments, it approximates real behavior, since people carry over behavioral patterns from their actual life to the lab.

higher income. Secondly, people are aware of the fact[23] that complete equalization destroys work incentives and would make everyone worse off—the well-known Rawlsian argument in favor of inequality as expressed by the difference principle. Consequently, all laboratory groups so far chose strong equalization measures (option *D* in round 1) combined with income steaming from pure market competition (option *A* in round 2). Competition is hence not rejected, but seems only acceptable as long as a high minimum income is guaranteed, also correcting factors which create a wedge between *deserved* and *realized* income.

Second, from a policy perspective, these findings call for several conclusions: first of all, the *unconditional* power of market forces is not considered an attractive principle. It seems in conflict with justice concerns even of people who do see and profit from the general efficiency of market economies. On a meta-level, this means that market economies without the requested distributional measures are not stable in the long run: societies must fear that people will simply vote against using markets as such. Arguing against any redistributional measures per se—as some market-radicals do—in the end might be the best way of putting market systems at risk. In case markets are considered generally beneficial—and arguments like dissipation of power, allocative efficiency and merit-based justice can be mentioned here—then one should be concerned about existing threats to market principles, such as social immobility. On the contrary, however, our findings demonstrate that also an equal economic order is not stable in the long run. Both, winners and losers, want to reform the system to improve their social position and realize at least a small part of catch-up (losers) or—because of the small payoffs in the second round—they do not risk anything any longer (winners). Both effects, however, call for the implementation of a social market economy. Secondly, the disincentive effects from redistribution might be smaller than often expected by economists in case *positional competition* still is possible in a market society providing a rather egalitarian absolute life base. The crucial point hence is not if redistribution takes away too much in absolute terms, but whether it still allows productive individuals to signal their *relative* rank in society. Here, our experimental setup of course was a rather straightforward method to reveal this information. In reality, the issue is a more complex one: there is hardly ever direct knowledge about one's relative position, and in any case, *not* being taxed and investing in positional goods might be the preferred strategy in case relative positions are difficult to detect otherwise.

Last, we argue that our conclusions and the transfer of experimental findings are not too far-fetched despite the obvious difference between laboratory and reality. Bourdieu's habitus concept in fact is a strong argument in favor of external validity, and the explicit statement of students finding themselves in a close-to-reality simulation is a point suggesting that we can learn something relevant for reality from—necessarily—artificial settings. The reliability of experimental findings can be improved via a mixed methods approach as chosen here, where qualitative data helps explain the actually observed numerical patterns. Therefore, we are going to continue this promising research path. At least, we may generate rather reliable data in empirical research on distributional matters; optimally, we can contribute our share to improving the experimental economic method in general.

[23] These findings highlight the importance of analyzing socialization processes for future research.

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Appendix

A. Graphical representation of experimental sequence

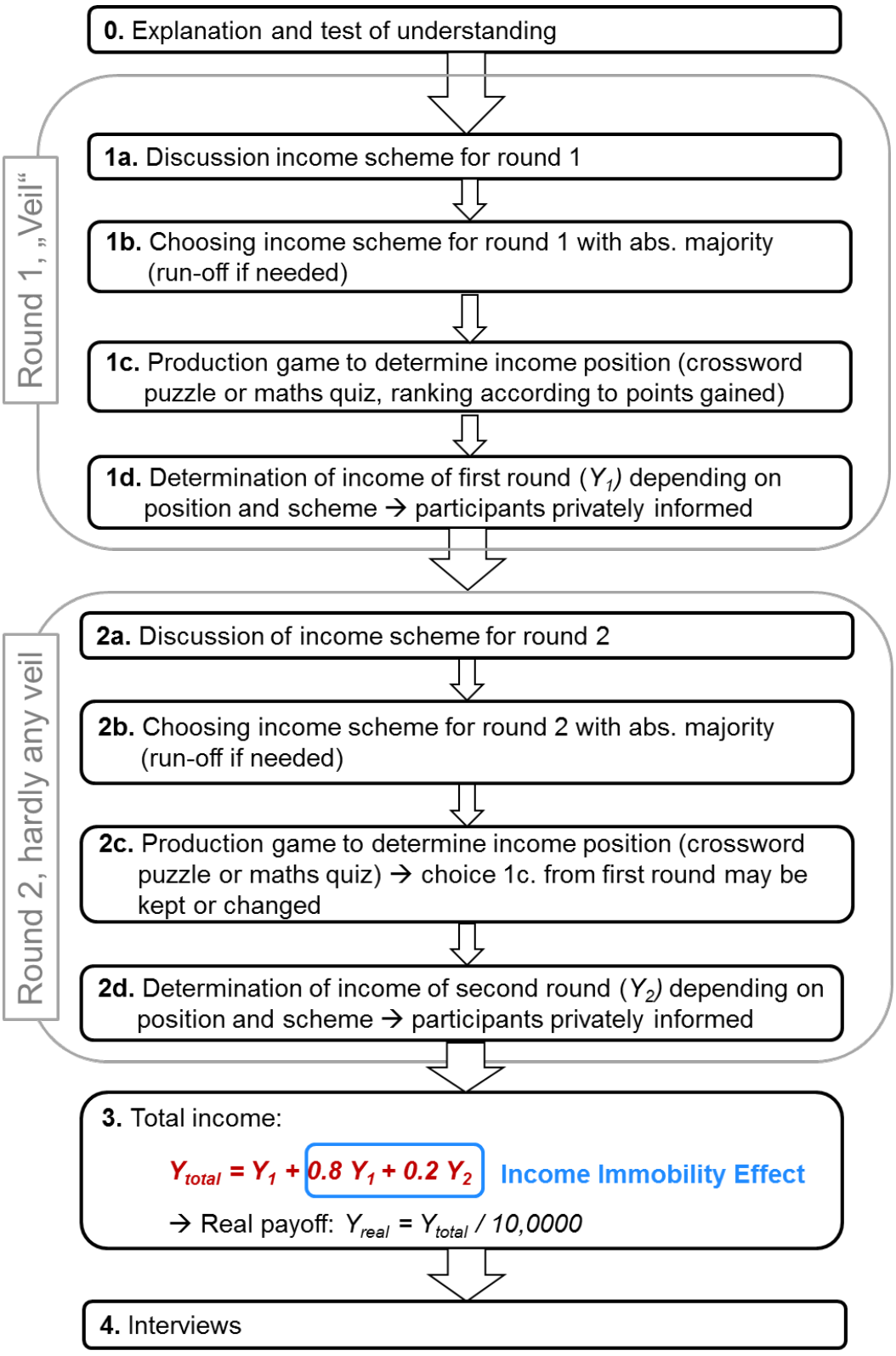

Figure 2: Sequence of the experiment (authors' compilation)