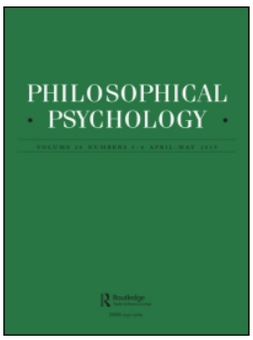

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The lottery of life and moral desert: An empirical investigation

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ABSTRACT

As John Rawls makes clear in *A Theory of Justice*, there is a popular and influential strand of political thought for which brute luck – that is, being lucky (or unlucky) in the so-called "lottery of life" – ought to have no place in a theory of distributive justice. Yet the debate about luck, desert, and fairness in contemporary political philosophy has recently been rekindled by a handful of philosophers who claim that desert should play a bigger role in theories of distributive justice. In the present paper, we present the results of our attempts to fill in some of the missing empirical details of this debate. Our findings provide some preliminary evidence that, contrary to what most contemporary political philosophers have assumed, people are not as worried by *natural* luck as previously thought. Instead, people's worries seem to be focused exclusively on inequalities generated by *social* luck.

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Commonsense morality; desert; distributive justice; natural luck; social luck

> It seems to be *one of the fixed points of our considered judgments* that no one deserves his place in the distribution of native endowments, any more than one deserves one's initial starting place in society. (Rawls, 1971, pp. 103–104; emphasis added)

1. Introduction

The proper place of responsibility and desert in theories of justice has been the focus of a long-standing debate in contemporary political philosophy. In his seminal work, Rawls (1971) presented a liberal egalitarian account of justice nearly devoid of any role for individual responsibility[1] and pre-institutional desert. This account has since been criticized, and some would argue improved upon, by the so-called luck egalitarians[2] (e.g. Arneson, 1989; Cohen, 1989; Dworkin, 1981; Roemer, 1993). These philosophers have made several theoretical developments that afford a substantial role to personal responsibility and desert in theories of justice.

Despite the significant differences between liberal and luck egalitarian theories of justice, these views share an egalitarian core. According to proponents of both theories, while we might rightly admire someone for her natural abilities or her social station in life, these kinds of natural and social luck are not proper bases for judgments concerning desert or the proper distribution of resources. Hence, both liberal and luck egalitarians embrace what Freiman and Nichols (2011) have called the *brute luck constraint*. That is, "if differential benefits are distributed on the basis of desert, brute luck cannot differentially affect the desert base (i.e. that which grounds the desert claim)" (Freiman & Nichols,

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2011, p. 124). While the brute luck constraint plays distinct theoretical roles in the two egalitarian traditions, it remains largely uncontested by proponents of each view.

Recently, however, advocates of desert-based principles of justice have not only criticized egalitarian theories, they have even disputed the validity of the brute luck constraint itself. For instance, Miller (2003) and Schmidtz (2006) have both suggested that luck does not actually nullify claims of desert. One important empirical question that emerges from this philosophical debate is the following: what evidence is there that commonsense morality supports the brute luck constraint, as Rawls suggests and Miller and Schmidtz deny? Traditionally, claims by political philosophers about the relationship between luck, desert, and fairness have been unmoored from any hard data concerning people's *actual* moral and political beliefs and attitudes. While philosophers following the egalitarian tradition could be right when it comes to how people ordinarily think about the different types of luck (natural and social), desert, and fairness, they could also be wrong. Moreover, sorting this out is not something we can do from the armchair. Hence, our goal is to provide empirical data concerning folk intuitions about the relationship between natural and social luck on the one hand and moral desert and fairness on the other.

In our view, an adequate theory of justice must pass the test of feasibility in order for it to be of practical value to society – that is, its principles must be capable of being implemented in a social world like ours comprised of real human beings like us. Recently, defenders of nonideal theories of justice have taken the importance of feasibility constraints a step further. For instance, Wiens (2015) argues that ideal principles designed with little regard for feasibility considerations do not provide an appropriate target for real world reforms and are ill-suited for comparative evaluation among feasible possible worlds. At a minimum, principles of justice must be accepted by the general population for a theory to be applicable, or it must be shown that even if people do not accept a certain principle they could be brought to accept it. Hence, intuitions about justice are probative to applied political philosophy. In light of these considerations, we side with David Miller when he claims that

> empirical evidence should play a significant role in justifying a normative theory of justice, or to put it another way, that such a theory is to be tested, in part, by its correspondence with our evidence concerning everyday beliefs about justice. (2003, p. 51)

In this paper, we present the results of our own attempts to fill in some of the missing empirical details. We set the stage with a brief discussion of the theoretical and empirical literatures on the role of moral luck and desert in both liberal and luck egalitarian theories of justice (Section 2). Subsequently, we describe the experimental design of our own attempt to contribute to the recent empirical debate concerning luck and desert (Section 3), followed by a presentation of our results (Sections 4 and 5). Finally, we conclude with a discussion of the relevance of our findings to political philosophy, and we consider some possible future avenues of research (Section 6). As we will see, there is much interdisciplinary work that remains to be done at the crossroads of political philosophy and political psychology.

2. Setting the stage

Egalitarian philosophers have cast doubt on the extent to which moral desert should play a role in theories of distributive justice. While liberal egalitarians such as Rawls have downplayed the role of personal responsibility and moral desert, luck egalitarians have defended a more prominent place for these types of claims in judgments about the fairness of distributions.

One important point of agreement among all philosophers within the egalitarian tradition is that both the natural and the social lottery necessarily undermine claims of personal responsibility in the generation of differential levels of income and wealth. A major point of disagreement emerges in regard to the following question: to what extent does the "lottery of life" undermine personal responsibility? Here is where we find substantially different accounts of the role played by desert in judgments about distributions, as presented by liberal and luck egalitarians.

For liberal egalitarians, the greater part of an individual's income is generated by features that fall outside the scope of her moral responsibility. That is, if a person makes more money than another, the explanation for this income disparity depends mostly (if not entirely) on differences either in their natural features, a result of the so-called *natural lottery*, or in their social circumstances, a result of the so-called *social lottery*, or in a mix of both.

Rawls (1971) acknowledges that one could still argue for differential levels of income based on differential levels of conscientious effort. On his view, responsibility could be a proper basis for desert. Nonetheless, Rawls maintains that we have no feasible method for ascertaining the extent to which a person's conscientious efforts are attributable to his or her virtuous character and the extent to which they are the result of valuable but undeserved natural abilities (or social circumstances). In this context, the joint combination of natural and social luck with epistemic uncertainty concerning people's conscious efforts erodes all claims of genuine desert, which is why Rawls ultimately concludes that "the idea of rewarding desert is impracticable" (1971, p. 312).

Another important piece of Rawls's argument against the assignment of any important role to desert in our judgments of justice relies on his apprehension of desert as a pre-institutional concept. That is, on Rawls's interpretation, the concept of desert is empty before institutional norms bestow it with content. Rawls provides an analogy for this understanding of desert, saying that, "for a society to organize itself with the aim of rewarding moral desert as a first principle would be like having the institution of property in order to punish thieves" (1971, p. 313). We cannot make sense of the idea of a thief prior to the existence of property rules. Furthermore, Rawls argues that the parties in the original position would reject the principle of distribution in accordance with moral desert even if there were some standard for assessing desert that was independent of and prior to justice (p. 312). Since the parties are interested only in maximizing their own shares of primary social goods, such a principle would have little appeal for them.

We can find a nice illustration of the implications of Rawls's account of desert in the work of Harper (2000). Harper uses the example of Mandela's receipt of the Nobel Peace Prize to highlight the difference between desert-theorists and liberal egalitarians like Rawls. A desert-theorist claims that Mandela should receive credit for his doings; the award of the Peace Prize is a mark of gratitude and of respect. Mandela deserves it because of what he is and what he has done; the sort of person he is and the actions he has performed form the basis for the award. The positive effects on society of the institution of the Nobel Prize itself are secondary. For Rawls, the sort of person Mandela is and the actions he has performed are irrelevant, except as criteria for the award itself. He cannot be said to be *deserving* of the award, just as he cannot be said to be deserving of any of his abilities or actions that are merely the result of his genetics or circumstances. These are beyond his control and thus undeserved. In the Rawlsian sense, positive effects on society are primary and the character of Mandela incidental. To the desert-theorist, Mandela's character is paramount, and to the Rawlsian, it is merely the product of social and biological forces beyond his control (Harper, 2000).

For luck egalitarians, despite the heavy influence of luck on how our lives turn out, effort is not to be overlooked as a determinant factor of economic output. Moreover, we do not have to wait until the problem of luck is settled before we can and should ascribe an eminent place for desert in our theories of justice. For example, we can focus on mitigating the influence of brute luck in our lives as much as possible. Ronald Dworkin (1981) has famously proposed a way of accomplishing this goal, based on the crucial distinction between brute luck and option luck. One the one hand, brute luck, as we have discussed, is not a matter of voluntary or deliberate behavior. Quite the contrary, brute luck is something over which the agent has no control and for which the agent bears no responsibility. On the other hand, "option luck is a matter of how deliberate and calculated gambles turn out – whether someone gains or loses through accepting an isolated risk he or she should have anticipated and might have declined" (Dworkin, 2002, p. 73). In short, option luck, whether good or bad, is something agents open themselves up to as the result of their deliberate and voluntary behavior (even if it's not something agents control in some deeper sense). Dworkin's proposal is just one among many that

have been developed by luck egalitarians to minimize the influence of brute luck while nevertheless acknowledging responsibility and desert as integral parts of a theory of distributive justice.

While both liberal and luck egalitarians seem to be operating under the assumption that a theory of distributive justice ought to eliminate or minimize the effects of brute luck, it's not clear that this assumption is well grounded. In this sense, they both prompt an important question that remains to be answered – what is the empirical validity of the brute luck constraint? Rawls has argued that the brute luck constraint is "one of the fixed points of our considered judgments" (1971, pp. 103–104), yet in the absence of data about commonsense morality we should remain agnostic about whether he is right.

Unsurprisingly, some political philosophers have started to question the brute luck constraint (e.g. Miller, 2003; Schmidtz, 2006). Following Hume, these philosophers appeal to commonsense morality's indifference to the conditions under which desert bases are acquired. On their view, Hume provides a more fruitful account of desert that better accords with folk morality by associating desert with a sentiment of approval of personal characteristics (or achievements) that is insensitive to whether they have been acquired by effort or by mere luck.

On the one hand, Miller (2003) sides with Hume (2000, p. 387) when it comes to the relationship between the brute luck constraint and commonsense morality. According to Miller, folk attributions of desert are often blind to worries about luck and the natural lottery of life. Miller emphasizes that we do not ordinarily adopt an attitude of admiration or approval only towards those qualities that we have antecedently judged to be voluntarily acquired. On the contrary, it is common practice to admire, for instance, the virtuosity of a musician without further inquiry into the factors that generated such virtuosity, be they natural talent, environment, or effort. That is, Miller argues for a direct connection between appraising attitudes and desert.[3]

Schmidtz (2006) proposes a similar pluralistic account of justice in which desert plays a prominent role. He defends this desert-based view in the face of skeptical arguments that have proliferated in the liberal egalitarian literature, stating that, "when a person's internal features support desert claims, the support comes from appreciating what those features are, not from evidence that they are uncaused" (2006, p. 37). Schmidtz adds that our ordinary practice regarding the attribution of desert for doing X does not depend on judgments about the deservedness of the ability or the opportunity to do X.

To our knowledge, there is only one empirical study that specifically explores whether folk intuitions about desert are shaped by the brute luck constraint. In this study, Freiman and Nichols (2011) ran a series of simple experiments and reported that, when faced with abstract scenarios, people seem to endorse the brute luck constraint in regard to the influence of natural luck on the generation of personal income. However, the results revealed that people have different intuitions when they are presented with concrete cases of natural luck. As we will see in the fourth section, our results paint a different and more nuanced picture.

Before we discuss our own findings, it is important to better understand the details of the experiments run by Freiman and Nichols (2011). In their first study, they presented participants with the following statement: "Suppose that some people make more money than others solely because they have genetic advantages" (p. 127). Participants were then asked whether they thought these genetically advantaged people deserved extra money and whether they thought it was fair that these people received more money. The results conformed to the brute luck constraint. As Freiman and Nichols report, "On average, people maintained that the people who made more solely because of genetic advantages did not deserve the extra money, nor was it fair that they get the extra money" (p. 127). However, while these preliminary findings support their claim that the brute luck constraint is part of commonsense morality, Freiman and Nichols thought that perhaps people would have different intuitions if they were presented with concrete rather than abstract cases.

In an effort to see whether "different kinds of judgments would manifest if people were presented with questions about concrete individuals," Freiman and Nichols ran two additional studies (2011, p. 127). After all, as they point out, there is a growing body of research in both social psychology and experimental philosophy suggesting that people's moral intuitions are influenced by how abstractly cases are described. Because desert and fairness are inherently moral concepts, Freiman and Nichols

expected that they might find similarly asymmetrical results if they presented participants with concrete cases involving brute luck. So, they designed the following two concrete cases:

> **Case 1: The Singers.** Suppose that Amy and Beth both want to be professional jazz singers. They both practice singing equally hard. Although jazz singing is the greatest natural talent of both Amy and Beth, Beth's vocal range and articulation is naturally better than Amy's because of differences in their genetics. Solely as a result of this genetic advantage, Beth's singing is much more impressive. As a result, Beth attracts bigger audiences and hence makes more money than Amy.
>
> **Case 2: The Jugglers.** Suppose that Al and Bill both want to be professional jugglers. They both practice juggling equally hard. Although juggling is the greatest natural talent of both Al and Bill, Bill's hand-eye coordination is naturally better than Al's because of differences in their genetics. Solely as a result of this genetic advantage, Bill can perform more difficult and impressive tricks than Al. As a result, Bill gets bigger audiences and hence makes more money than Al. (Freiman & Nichols, 2011, p. 128)

Participants in this follow-up study were then presented with either the aforementioned abstract case or with one of these two concrete cases. They were once again asked whether the genetically gifted individual deserved the extra money and whether it was fair that they received the extra money. As predicted, Freiman and Nichols found statistically significant differences between how participants responded in the abstract and concrete cases. In the concrete cases, participants judged the genetically gifted individual as deserving of the extra money, contrary to their judgment in the abstract scenario.

As Freiman and Nichols (2011) point out, these results suggest that people's moral intuitions about desert and fairness are influenced by the abstractness or concreteness of the case. "When faced with an abstract question, people's judgments conform to the brute luck constraint; when given concrete scenarios, people's judgments flout the brute luck constraint" (p. 129). Having found an asymmetry in people's responses to abstract and concrete scenarios, Freiman and Nichols go on to consider which intuitions "should guide our theorizing about justice" (p. 129).

However, because we think that their studies have some methodological and conceptual shortcomings and limitations, we are going to hold off on examining what they have to say on this front. So, while we applaud Freiman and Nichols's efforts to shed some empirical light on the debate in political philosophy about the relevance of brute luck to considerations of desert, fairness, and justice, we nevertheless think more experimental work needs to be done before we should consider the relative merits of concrete and abstract moral intuitions. In the following section, we are going to discuss our own attempts to fill in some of the missing empirical details.

3. New studies

In our studies, we set out to investigate three main features of commonsense intuitions about moral desert. First, we explore the stability of folk intuitions about desert across abstract and concrete scenarios. In order to do so, we retested the hypothesis that people's intuitions shift as a response to how the cases are built, either abstractly or concretely (Freiman & Nichols, 2011). We ran two conditions (one abstract and one concrete) for each of our cases, making sure that the individuals described in the cases were equally hardworking across conditions and, in addition, had advantages (or disadvantages) that were directly related to the type of work that they performed. Hence, we predict that intuitions about desert will be stable across conditions – which is an important feature of intuitions if we are to take them seriously.

Second, we build cases that disentangle folk intuitions regarding natural luck and social luck. The theoretical developments of liberal and luck egalitarians predict that people will be indifferent between these two types of luck when it comes to judgments of desert. That is, the brute luck constraint is assumed to be valid across the board – both natural and social luck undermine claims of desert. Our hypothesis contradicts these predictions. We predict that the folk will endorse the brute luck constraint for social luck, but override it when it comes to natural luck – a prediction that is in line with the views expressed by Miller (2003).

Finally, given the extensive empirical literature on how intuitions diverge depending on whether cases are positively or negatively described, we explore this issue as it applies to judgments of desert. Previous work in experimental philosophy and psychology has suggested that cases framed in a negative way tend to produce stronger emotional responses in subjects, affecting the degree of acceptance or rejection of particular claims.

The greater impact that potential losses generate on people's choices when compared with the impact of equivalent gains was first documented by Tversky and Kahneman (1981). More recently, Buchan, Croson, Johnson, and Wu (2005) and Zhou and Wu (2011) have provided additional evidence that individuals tend to demonstrate a higher demand for fairness in decision-making processes that involve the distribution of losses than in those that involve the distribution of gains. As suggested by Zhou and Wu, there may be an evolutionary explanation for this pattern. "In aversive situations, the need to abide to social norms seems to be more urgent in that the violation of norms may threaten the survival of species" (2011, p. 587).

Hence, to test if folk intuitions about luck and desert also conform to this general trend, we framed all of our cases in terms of genetic or social advantages and disadvantages. Here, our hypotheses are that people will evaluate the monetary outcomes from genetic advantages as deserved and fair but the equivalent outcomes from genetic disadvantages as undeserved and unfair in both the abstract and the concrete scenarios. Regarding social luck, we predict that people will evaluate the monetary outcomes from both social advantages and disadvantages as even more undeserved and unfair.

We ran two separate studies in order to test the above hypotheses. In the first study, we tested for all three hypotheses. In the second study, we refined the experiment so as to eliminate a potential confound in our results regarding the genetic vs. social luck hypothesis. The design of the experiments, their results, and discussion are presented, respectively, in the following sections.

4. Study one: design and results

We uploaded the study to Qualtrics.com, where the data were collected and stored. Four hundred and four participants were recruited via Amazon's Mechanical Turk online survey service and paid $1 each for completing the survey. Participants were at least 18 years of age and living in the United States. Fifty-one per cent of participants (n = 204) reported being male and 49% (n = 200) reported being female.

Each participant was randomly assigned to one of four conditions: abstract positive, abstract negative, concrete positive, or concrete negative. Each condition included four cases. Two statements, one about desert and one about fairness, followed each case. The abstract conditions were as follows:

4.1. Abstract positive

Case 1. Suppose that some hardworking singers make more money than other equally hardworking singers solely because they have genetic advantages that make them artistically more talented.

Case 2. Suppose that some hardworking scientists make more money than other equally hardworking scientists solely because they have genetic advantages that make them intellectually more talented.

Case 3. Suppose that some hardworking athletes make more money than other equally hardworking athletes solely because they have genetic advantages that make them physically more talented.

Case 4. Suppose that some hardworking people make more money than other equally hardworking people solely because they had social advantages like a loving family and better education that made them more likely to be successful.

4.2. Abstract negative

Case 1. Suppose that some hardworking singers make less money than other equally hardworking singers solely because they have genetic disadvantages that make them artistically less talented.

Case 2. Suppose that some hardworking scientists make less money than other equally hardworking scientists solely because they have genetic disadvantages that make them intellectually less talented.

Case 3. Suppose that some hardworking athletes make less money than other equally hardworking athletes solely because they have genetic disadvantages that make them physically less talented.

Case 4. Suppose that some hardworking people make less money than other equally hardworking people solely because they had social disadvantages like an abusive family and worse education that made them less likely to be successful.

After each of the abstract cases, participants were presented with the following two statements and asked to note their level of agreement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with 4 as the midpoint (neither agree nor disagree).

(1) These genetically [socially] advantaged [disadvantaged] singers [scientists/athletes/people] deserve to make more [less] money.
(2) It is fair [unfair] that these singers [scientists/athletes/people] get more [less] money only because they have genetic [social] advantages [disadvantages] that make them more [less] talented [successful].

In the concrete conditions, participants received one of the following sets of four cases:

4.3. Concrete positive

Case 1. Suppose that Amy and Beth both want to be professional jazz singers. They both practice singing equally hard. Although jazz singing is the greatest natural talent of both Amy and Beth, Beth's vocal range and articulation is naturally better than Amy's because of differences in their genetics. Solely as a result of this genetic advantage, Beth's singing is much more impressive. As a result, Beth attracts bigger audiences and hence makes more money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Although math is the greatest natural talent of both Amy and Beth, Beth is always able to come up with more efficient solutions for software programs than Amy because of differences in their genetics. Solely as a result of this genetic advantage, Beth's programming is much more impressive. As a result, Beth gets a better job and hence makes more money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Although basketball is the greatest natural talent of both Amy and Beth, Beth is always able to naturally come up with better plays than Amy because of differences in their genetics. Solely as a result of this genetic advantage, Beth's playing is much more impressive. As a result, Beth gets a better position on a better team and hence makes more money than Amy.

Case 4. Suppose that Amy and Beth both want to be architects. They both study equally hard. Beth's parents are richer and able to pay for her to attend both a better school and a better university than the ones Amy's parents are able to afford for their daughter. Solely as a result of this social advantage, Beth's curriculum is much more impressive. As a result, Beth gets a better job and hence makes more money than Amy.

4.4. Concrete negative

Case 1. Suppose that Amy and Beth both want to be professional jazz singers. They both practice singing equally hard. Although jazz singing is the greatest natural talent of both Amy and Beth, Beth's vocal range and articulation is naturally worse than Amy's because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's singing is much less impressive. As a result, Beth attracts smaller audiences and hence makes less money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Although math is the greatest natural talent of both Amy and Beth, Beth is always able to come up with less efficient solutions for software programs than Amy because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's programming is much less impressive. As a result, Beth gets a worse job and hence makes less money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Although basketball is the greatest natural talent of both Amy and Beth, Beth is always able to naturally come up with worse plays than Amy because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's playing is much less impressive. As a result, Beth gets a worse position on a worse team and hence makes less money than Amy.

Case 4. Suppose that Amy and Beth both want to be architects. They both study equally hard. Beth's parents are poorer and able to pay for her to attend both a worse school and a worse university than the ones Amy's parents are able to afford their daughter. Solely as a result of this social disadvantage, Beth's curriculum is much less impressive. As a result, Beth gets a worse job and hence makes less money than Amy.

After each one of the concrete cases, participants were presented with the following two statements and asked to note their level of agreement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with 4 as the midpoint (neither agree nor disagree).

(1) Beth deserves to make more [less] money.
(2) It is fair that Beth gets more [less] money only because she has genetic [social] advantages [disadvantages].

Before discussing the results of our first experiment, we want to briefly remind the reader of the goal of our studies. First, we wanted to make it clear to participants that in the abstract scenarios, the advantaged (or disadvantaged) work equally as hard as their counterparts who make less (or more) money. Second, we wanted to make it clear in the abstract scenarios that the genetically advantaged agent was advantaged *in the right way*. Third, we wanted to explore people's intuitions not only about the natural lottery (genetic advantages), but also about the social lottery (social advantages). Finally, we wanted to explore people's intuitions about negative luck (disadvantaged cases) and not just positive luck (advantaged cases). As we will now see, these manipulations – namely, abstract vs. concrete, natural luck vs. social luck, and positive cases vs. negative cases, yielded both interesting and novel results.

4.5. Results

First, we found no differences within any of the four conditions among the three types of natural luck (e.g. participants treated being genetically advantaged at singing no differently than being genetically advantaged at science or sport). So, for the purposes of data analysis, we simply collapsed the three types of natural luck into one variable. This left us with the following three independent variables: genetic vs. social, concrete vs. abstract, and positive vs. negative.

Second, participants' responses to the desert and fairness questions were very similar in both the genetic and social conditions (Chronbach's $\alpha = .85$ and .86, respectively), so we collapsed them for the purposes of the analyses below.

We ran a mixed factor ANOVA, with genetic vs. social as a within-participant variable and concrete vs. abstract and positive vs. negative as between-participant variables. This revealed main effects for genetic vs. social, $F(1, 407) = 313.3$, $p < .001$, $\eta^2 = .435$, positive vs. negative, $F(1, 407) = 14.1$, $p < .001$, $\eta^2 = .033$, and abstract vs. concrete, $F(1, 407) = 4.0$, $p = .046$, $\eta^2 = .01$. Specifically, participants reported that the differences in income were more deserved or fair when due to genetic differences ($M = 4.8$, $SE = .07$) than when due to social ones ($M = 3.3$, $SE = .08$). This finding suggests that commonsense morality does not treat all kinds of brute luck equally. Instead, people tend to find social advantages and disadvantages to be much more problematic than genetic advantages and disadvantages.

They also reported that income differences due to advantages ($M = 4.3$, $SE = .09$) are more deserved or fair than those due to disadvantages ($M = 3.8$, $SE = .09$). So, while people tend to think that

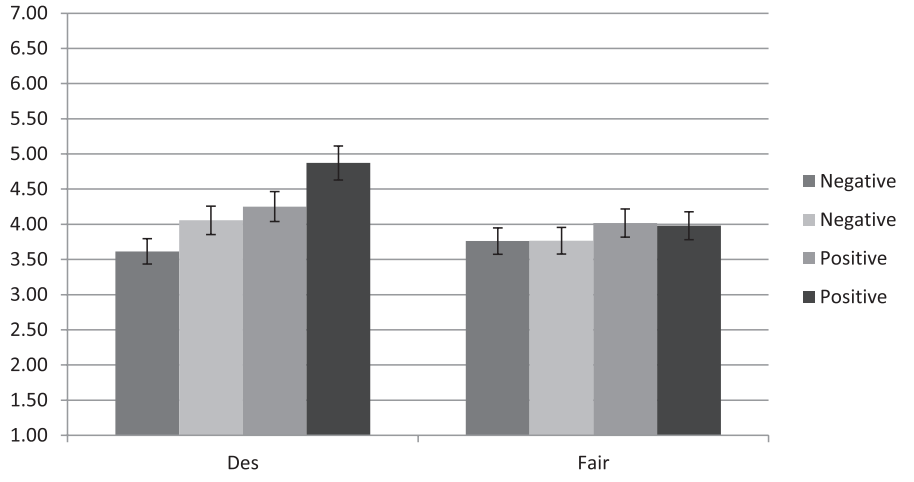

Figure 1. Desert vs. fairness.

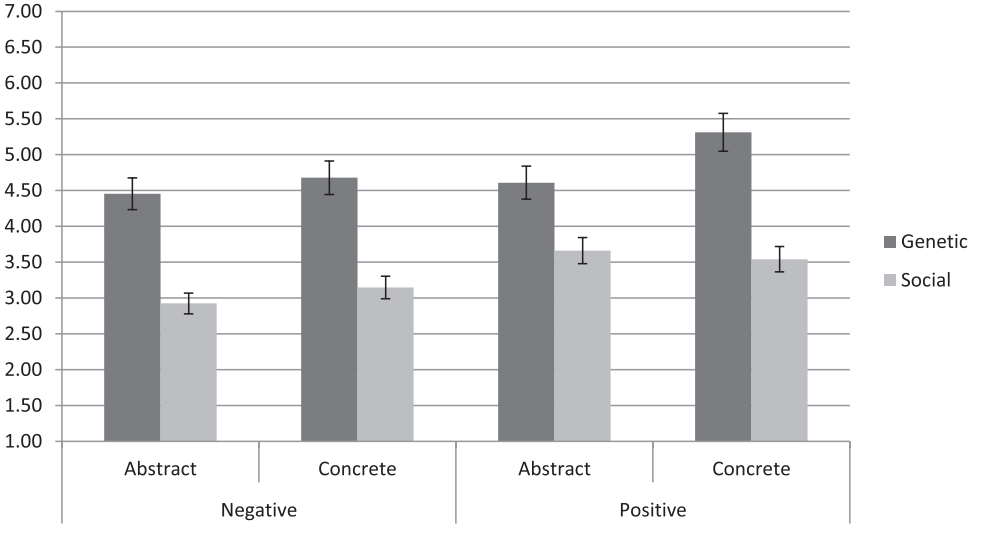

Figure 2. 3-way interaction.

advantages (both genetic and social) are deserved and fair, they find disadvantages to be problematic. This difference is much more pronounced for participants' desert responses, barely reaching significance in their assessment of fairness (see Figure 1). This result is consistent with the empirical literature on the justice of distinct distributions of losses vs. equivalent gains, as discussed in the third section.

Finally, participants reported that income differences were less deserved or fair in the abstract condition (M = 3.9, SE = .09) than in the concrete condition (M = 4.2, SE = .09). These effects were qualified by one 2-way interaction between genetic vs. social and abstract vs. concrete, $F(1, 407) = 6.4$, $p = .012$, $\eta^2 = .015$, as well as a 3-way interaction between all three independent variables, $F(1, 407) = 6.3$, $p = .012$, $\eta^2 = .015$, which is represented in Figure 2. Collectively, these results suggest that the only circumstances under which abstract vs. concrete presentation of the scenario mattered was in the positive genetic condition.

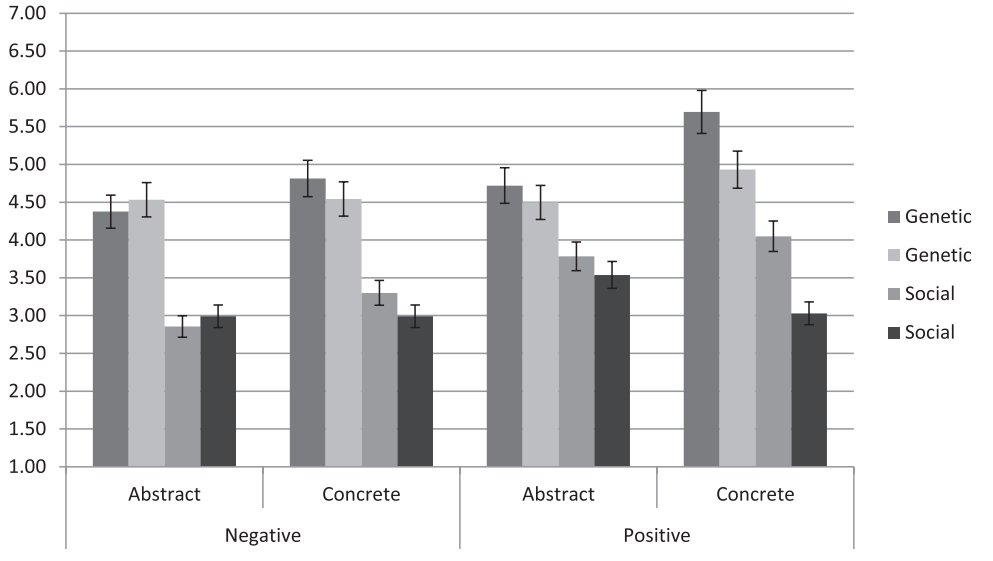

Figure 3. Difference between desert vs. fairness responses.

Specifically, participants were more supportive of genetic advantages when the cases were concrete than when they were abstract, diff = .7, t(205) = 3.6, $p < .001$. There was no difference between abstract and concrete for the social advantages, diff = −.1, t(205) = .53, ns, or either the genetic or social disadvantages, diff = .2, ts(202) = 1.1 − .99, ns.

More importantly, we found no shift in folk judgments about desert from the concrete positive to the abstract positive cases. That is, participants judged the genetically advantaged agents as deserving of the additional money both in the abstract and the concrete positive cases, and they judged the socially advantaged agents as *not* deserving of the additional money both in the abstract and the concrete positive cases. This finding reveals that the effect reported by Freiman and Nichols does not replicate once it is clear that the individuals described in the cases are all equally hardworking across conditions and, in addition, have advantages directly related to the type of work that they perform.

Even though it was acceptable to collapse our two dependent variables for the above analyses, we nonetheless wanted to examine whether people viewed them differently. To examine this, we conducted a mixed-factor analysis similar to the one described above, but with the inclusion of an additional within-participants variable: desert vs. fairness. This revealed a main effect for desert vs. fairness, $F(1, 407) = 51.8$, $p < .001$, $\eta^2 = .113$, as well as two 2-way interactions: one between desert vs. fairness and positive vs. negative, $F(1, 407) = 30.9$, $p < .001$, $\eta^2 = .071$, and the other between desert vs. fairness and abstract vs. concrete, $F(1, 407) = 38.4$, $p < .001$, $\eta^2 = .086$. Overall, participants thought that the income difference was more deserved than fair – both when it involved genetic differences, t(410) = 5.7, $p < .001$, and when it involved social differences, t(410) = 4.9, $p < .001$ – though the difference was most pronounced in the positive/concrete condition (Figure 3). This was an unexpected finding that certainly requires more research.

In the next section, we will describe the follow-up experiment we ran in order to address a potential confound in our results. Namely, whereas both abstract vs. concrete and positive vs. negative conditions were between-subjects, the genetic vs. social condition was within-subjects.[4] As a consequence, our results could potentially represent a larger influence of the type of luck than of the abstractness of the description, solely because this manipulation is salient. That is, such joint evaluation could influence the factors that participants pay attention to.

5. Study 2: design and results

In order to rule out this explanation, we ran a fully between-subjects design, which allowed us to include more social luck cases. Additionally, this second round was an opportunity to provide an internal replication of our results. We uploaded the study to Qualtrics.com, where the data were collected and stored. Participants (n = 259) were recruited via Amazon's Mechanical Turk online survey service and paid $1 each for completing the survey. Participants were at least 18 years of age and living in the United States. Fifty-one per cent of participants (n = 132) reported being male and 49% (n = 127) reported being female.

In this second study, each participant was randomly assigned to one of the following conditions: abstract positive genetic, abstract positive social, abstract negative genetic, abstract negative social, concrete positive genetic, concrete positive social, concrete negative genetic, and concrete negative social. The genetic vs. social luck conditions were added to the experiment so as to test the validity of our previous results. Each condition included three cases (singers, scientists, athletes), and two statements (one about desert and one about fairness) followed each case.

5.1. Abstract conditions

The abstract conditions were as follows:

> **Abstract positive genetic.** Suppose that some hardworking singers/scientists/athletes make more money than other equally hardworking singers/scientists/athletes solely because they have genetic advantages that make them artistically/intellectually/physically more talented.
>
> **Abstract positive social.** Suppose that some hardworking singers/scientists/athletes make more money than other equally hardworking singers/scientists/athletes solely because they have social advantages such as being rich, having an emotionally stable family, and better education that make them more likely to be successful.
>
> **Abstract negative genetic**. Suppose that some hardworking singers/scientists/athletes make less money than other equally hardworking singers/scientists/athletes solely because they have genetic disadvantages that make them artistically/intellectually/physically less talented.
>
> **Abstract negative social**. Suppose that some hardworking singers/scientists/athletes make less money than other equally hardworking singers/scientists/athletes solely because they have social disadvantages such as being poor, having an emotionally unstable family, and worse education that make them less likely to be successful.

After each one of the abstract cases, participants were presented with the following two statements and asked to note their level of agreement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with 4 as the midpoint (neither agree nor disagree).

(1) These genetically [socially] advantaged [disadvantaged] singers [scientists/athletes/people] deserve to make more [less] money.
(2) It is fair [unfair] that these singers [scientists/athletes/people] get more [less] money only because they have genetic [social] advantages [disadvantages] that make them more [less] talented [successful].

In the concrete conditions, participants received one of the following sets of three cases:

5.2. Concrete conditions

5.2.1. Concrete positive genetic

> **Case 1.** Suppose that Amy and Beth both want to be professional jazz singers. They both practice singing equally hard. Although jazz singing is the greatest natural talent of both Amy and Beth, Beth's vocal range and articulation is naturally better than Amy's because of differences in their genetics. Solely as a result of this genetic advantage, Beth's singing is much more impressive. As a result, Beth attracts bigger audiences and hence makes more money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Although math is the greatest natural talent of both Amy and Beth, Beth is always able to come up with more efficient solutions for software programs than Amy because of differences in their genetics. Solely as a result of this genetic advantage, Beth's programming is much more impressive. As a result, Beth gets a better job and hence makes more money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Although basketball is the greatest natural talent of both Amy and Beth, Beth is always able to naturally come up with better plays than Amy because of differences in their genetics. Solely as a result of this genetic advantage, Beth's playing is much more impressive. As a result, Beth gets a better position on a better team and hence makes more money than Amy.

5.2.2. Concrete positive social

Case 1. Suppose that Amy and Beth both want to be professional jazz singers. They both practice equally hard. Beth's parents have always provided her with a stable family environment and emotional support, while Amy's parents were physically abusive and absent throughout her childhood. Solely as a result of this social advantage, Beth's singing is much more impressive. As a result, Beth attracts bigger audiences and hence makes more money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Beth's parents are richer and able to pay for her to attend both a better school and a better university than the ones Amy's parents are able to afford their daughter. Solely as a result of this social advantage, Beth's programming is much more impressive. As a result, Beth gets a better job and hence makes more money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Beth's parents have access to higher quality healthcare and nutrition than Amy's parents. Beth always gets the best medical treatment throughout her childhood, while Amy ends up growing up with several untreated illnesses. Solely as a result of this social advantage, Beth's playing is much more impressive. As a result, Beth gets a better position on a better team and hence makes more money than Amy.

5.2.3. Concrete negative genetic

Case 1. Suppose that Amy and Beth both want to be professional jazz singers. They both practice singing equally hard. Although jazz singing is the greatest natural talent of both Amy and Beth, Beth's vocal range and articulation is naturally worse than Amy's because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's singing is much less impressive. As a result, Beth attracts smaller audiences and hence makes less money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Although math is the greatest natural talent of both Amy and Beth, Beth is always able to come up with less efficient solutions for software programs than Amy because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's programming is much less impressive. As a result, Beth gets a worse job and hence makes less money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Although basketball is the greatest natural talent of both Amy and Beth, Beth is always able to naturally come up with worse plays than Amy because of differences in their genetics. Solely as a result of this genetic disadvantage, Beth's playing is much less impressive. As a result, Beth gets a worse position on a worse team and hence makes less money than Amy.

5.2.4. Concrete negative social

Case 1. Suppose that Amy and Beth both want to be professional jazz singers. They both practice equally hard. Beth's parents have always been physically abusive and absent throughout her childhood, while Amy's parents provided her with a stable family environment and emotional support. Solely as a result of this social disadvantage, Beth's singing is much less impressive. As a result, Beth attracts smaller audiences and hence makes less money than Amy.

Case 2. Suppose that Amy and Beth both want to be software programmers. They both study equally hard. Beth's parents are poorer and able to pay for her to attend both a worse school and a worse university than the ones

Amy's parents are able to afford their daughter. Solely as a result of this social disadvantage, Beth's programming is much less impressive. As a result, Beth gets a worse job and hence makes less money than Amy.

Case 3. Suppose that Amy and Beth both want to be professional basketball players. They both train equally hard. Beth's parents live in a poor neighborhood and have access to lower quality healthcare and nutrition than Amy's parents. Amy ends up growing up with several untreated illnesses, while Beth always gets the best medical treatments throughout her childhood. Solely as a result of this social disadvantage, Beth's playing is much less impressive. As a result, Beth gets a worse position on a worse team and hence makes less money than Amy.

After each one of the concrete cases, participants were presented with the same two statements about fairness and desert and asked to note their level of agreement on a 7-point Likert scale–ranging from 1 (strongly disagree) to 7 (strongly agree), with 4 as the midpoint (neither agree nor disagree).

5.3. Results

We ran a mixed factor ANOVA, with type of ability (singer, scientist or athlete) as a within-participant variable, and concrete vs. abstract, positive vs. negative, and genetic vs. social as between-participant variables. This revealed main effects for type of ability, $F(2, 502) = 4.481$, $p < .012$, $\eta^2 = .018$, positive vs. negative, $F(1, 251) = 10.4$, $p < .001$, $\eta^2 = .04$, abstract vs. concrete, $F(1, 251) = 3.93$, $p = .048$, $\eta^2 = .015$, and genetic vs. social, $F(1, 251) = 83.5$, $p < .001$, $\eta^2 = .25$.

First, the results of this second round revealed a replication of all the results of the first round. Specifically, participants once again reported that the differences in income were more deserved and fair in the genetic luck condition (M = 4.5, SE = .13) than in the social luck condition (M = 2.8, SE = .13). This is one of our main results, and it is important that we were able to replicate it in this new round, where not only the genetic vs. social conditions were between-subjects, but there were also more social luck cases than in our first experimental round (see Figure 4).

Regarding the positive vs. negative experimental manipulation, participants once again reported that income differences due to both genetic and social advantages were more deserved and fair (M = 4, SE = .13) than those due to disadvantages (M = 3.4, SE = .13).

Finally, regarding the abstract vs. concrete experimental manipulation, subjects reported that income differences were less deserved and fair in the abstract condition (M = 3.5, SE = .13) than in the concrete condition (M = 3.8, SE = .13). More importantly, we yet again found no shift in folk judgments about desert from the concrete positive to the abstract positive cases. That is, participants judged the genetically advantaged agents as deserving of the additional money both in the abstract

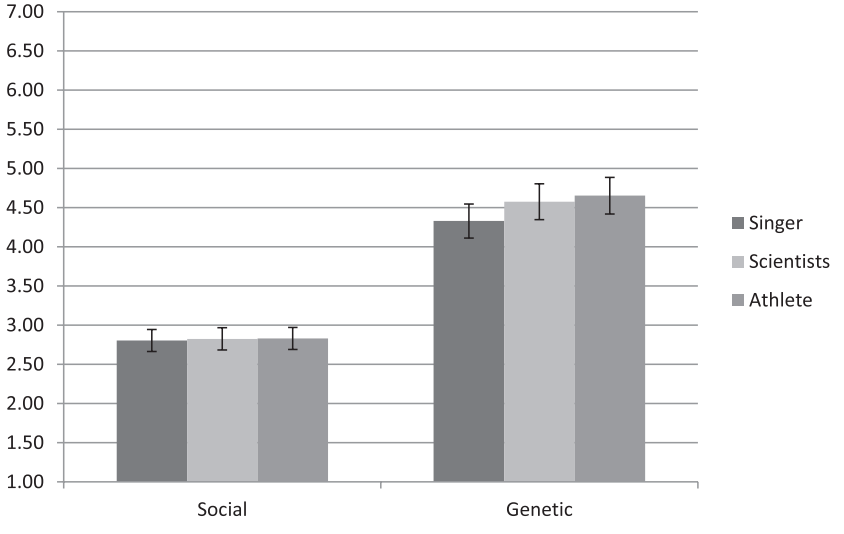

Figure 4. Desert/Fairness in the social vs. genetic conditions.

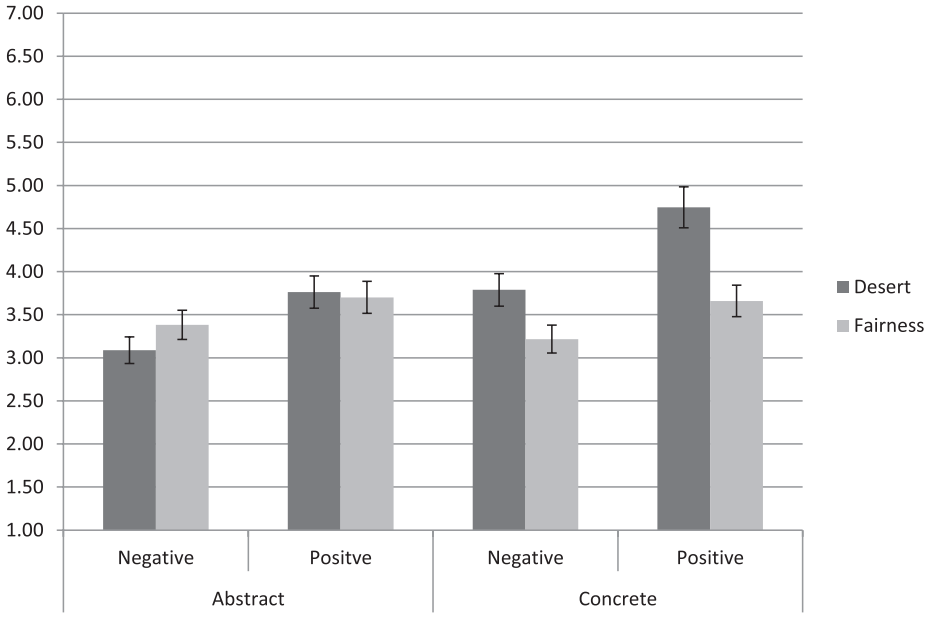

Figure 5. Abstract vs. concrete and positive vs. negative.

and the concrete positive cases and they judged the socially advantaged agents as *not* deserving of the additional money both in the abstract and the concrete positive cases (see Figure 5).

In the last section, we will discuss some of the possible implications of our results, while pointing to future directions for further research.

6. General discussion

We believe that our results shed a more nuanced light on the contours of folk intuitions about natural and social luck in judgments about income distribution. We also believe that our results provide novel insights regarding the proper role that luck and desert should play in nonideal theories of distributive justice. Contrary to what most contemporary political philosophers have assumed, our main finding suggests that peoples' intuitions about natural and social luck appear to be significantly distinct. While the folk judge inequalities generated exclusively by social luck as undeserved and unfair, this is not the case for those inequalities that are the result of differences in natural luck. That is, according to our findings, the brute luck constraint is not accepted by laypeople across the board – different moral appraisals for different kinds of luck seem to be the norm.

One possible explanation for these disparate intuitions, and one that certainly calls for future investigation, is that people perceive the outcomes of the natural lottery (such as a higher IQ) as both unalterable and independent of the basic structure of society. The outcome of the social lottery, on the other hand, is perhaps understood in different terms: if we change our institutions, we can strongly alter the effects of social luck in our lives. So one question that emerges from our results is: could the differences between intuitions regarding the fairness and deservedness of distributions regarding natural or social circumstances reflect the fact that people do not see how the former can be changed?

If confirmed by further research, the acceptance of the brute luck constraint by the folk solely in cases of social luck carries significant implications for political philosophy. Luck egalitarians have been arguing that the influence exerted by both natural and social luck on the outcomes of our work should be eliminated whenever possible, and minimized when elimination is not a viable alternative. This view seems to be in conflict with commonsense morality, as revealed by our results. Luck egalitarians

will now have to accommodate this conflict either by embracing different standards for different kinds of luck or by standing their ground and developing workable ways by which their principles could be accepted and endorsed by the folk.

For those who deny the relevance of the brute luck constraint across the board in judgments of desert, such as David Miller and David Schmidtz, our results also produce some interesting implications. It is common among those who adopt principles of desert to endorse a marginal contribution account of its implementation. Yet the folk's rejection of the results of social luck as deserved may undermine the viability of this account, given that an individual's marginal contribution to the social product is inexorably tainted by social inequities – particularly in our current state of deep wealth inequality. Hence, one needs to address this issue if one is to maintain a marginal contribution account of desert, somehow incorporating the seemingly pervasive concern regarding social luck.

It is important to highlight that our results have implications regardless of the view one may have on the normative relevance of folk intuitions. Even if folk intuitions were considered to be absolutely irrelevant as direct inputs into normative theorizing, political philosophers interested in moving from theory to public policy would still need to pay attention to our current pattern of intuitions. Insofar as political philosophers want their theories to be actionable and applicable in the real world, they cannot be insensitive to the data on actual folk intuitions. The more ingrained and widespread a certain set of beliefs is amongst the folk, the harder it will be to motivate individuals to be guided by principles that are in dissonance with these beliefs. Commonsense morality can impose a stringent motivational constraint on the implementation of principles of justice, making a desirable outcome impossible or at least less likely to obtain. Human nature may be malleable, but the extent of this malleability remains an open question – a question which requires yet more empirical investigation.

The necessity of gaining a better grasp on human moral beliefs in order to demarcate the realm of behavioral possibilities for the dictates of political philosophical theories is widely acknowledged among those interested in implementing real changes in the world. In this sense, it is imperative to comprehend what we as humans are *capable of* doing before we establish what we *should* be doing – can must precede ought. Most importantly, we should account for feasibility constraints not by assumption, but by careful empirical investigation of the actual world (Wiens, 2015). It is in this manner that we hope to have contributed to the political philosophical debate about desert. Nonetheless, it is important to note in closing that our work represents one small step towards the understating of a large philosophical problem that requires more empirical and theoretical investigation.

Notes

1. This claim has been recently contested in the literature (e.g. Blake & Risse, 2008). While we acknowledge the relevance of these further developments, they are beyond the scope of our paper and do not compromise our results.
2. The term "luck egalitarianism" was coined by Anderson (1999), a critic of the view. This family of egalitarian theories is also referred to as "responsibility-sensitive egalitarianism". It is worth mentioning that the term is not uncontroversial and Dworkin (2002) himself has explicitly denied being a "luck egalitarian".
3. In support of his argument, Miller cites findings that seem to suggest that laypersons endorse differential desert claims based on agents' differential contributions (2003, chapter 4).
4. We would like to thank an anonymous referee for calling to our attention this potential confound in our experimental design, and for the suggestion regarding how to address this problem.

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