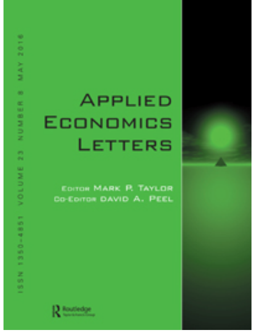

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Consequential egalitarianism vs. accountability principle: an experimental investigation

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ABSTRACT
We conducted a laboratory experiment to investigate how people's fairness views and redistribution depend on different rooted risks, specifically whether the risk is exogenously assigned in a 'pure-luck' control assignment or endogenously chosen by subjects in an 'option-luck' treatment. This experiment examines two contradictory views about distributive justice, namely consequential egalitarianism and the accountability principle (AP). The results show widespread support for the view of AP when participants have the opportunity to alleviate the risks.

KEYWORDS
Fairness; pure luck; option luck; accountability principle; consequential egalitarianism

JEL CLASSIFICATION
C91; D31; D63

I. Introduction

A wide range of economic questions, such as taxation of income and inheritances, Medicare insurance coverage and many others, are in a close connection with people's views of fairness preferences in various contexts. Despite the growing consensus of the importance of fairness in understanding distributive decisions and making public policy, researchers are far away from agreement about criteria used for justice and interpretation of fairness preferences in many different situations (Konow 2003).

Previous experimental studies show that earnings from work effort are perceived as more legitimate entitlement than from pure luck (Cherry et al., 2002; Hoffman et al. 1994; Durante, Putterman, and Van Der Weele 2014). However, since the multiplicity of desert judgement lies in the ambiguity in varying situations, people's fairness preferences become more complicated and controversial when own choices, luck and merit come together.

This article experimentally investigates two contradictory fairness views (consequential egalitarianism (CE) vs. accountability principle (AP)) associated with different rooted risks (i.e., pure luck vs. option luck). In the 'option-luck' treatment, a redistribution phase is preceded by the phase of an insurance purchase decision, in which subjects can endogenously decide whether they buy an insurance to alleviate potential losses. In the 'pure luck' control assignment, subjects are not provided with such an opportunity; hence, the treatment and the control separate losses due to pure luck or due to decisions made by participants. In the redistribution phase, higher-earning participants are informed about the details during the first phase and are asked to decide to redistribute any amount of money to the lower-earning counterparts they were randomly matched with. By design, the only difference between the control and the treatment lies in the source of inequality, i.e., whether the loss is due to pure luck or participants own choices. This experiment enables us to examine CE and AP by comparing how people respond to income inequality due to pure-luck and option-luck. Egalitarianism suggests that only the consequential inequality matters in consideration of fair distribution, namely a discharge of accountability for discretionary choice (Lamont and Favor 1996). Therefore, the redistributive decisions in the 'pure-luck' control should not be different from in the 'option-luck' treatment. On the contrary, as defined by Konow (2000), 'the AP requires that a person's fair allocation (e.g., of income) vary in proportion to the relevant variables that he can influence (e.g., work effort) but not according to those that he cannot reasonably influence (e.g., a physical handicap)'. Accordingly, the redistributive

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transfers should be significantly lower in the 'option-luck' treatment than in the 'pure-luck' control. Consider an example associated with health insurance coverage. Chronic diseases such as obesity and cardiovascular disease are sometimes caused by genetic make-up. In this situation, CE and AP are easy to achieve agreement about fair health insurance policy. But obesity also often comes out of unhealthy life habits. In the view of the AP, obese people should pay for their own health care if the disease is a result of their own behaviour.

II. Experimental design

There are three pairs of treatments and controls in our experiment. They differ in the potential income inequality: *low*-, *medium*- and *high-income inequality* (HII). Consider the *low income inequality* (LII) treatment as an illustrative example. In the first phase of LII treatment, given an endowment of 20 points (experimental currency unit (ECU), each point = $0.50), participants were informed that one of three possible outcomes would be realized with equal probability. Before the outcome was unfolded, subjects were asked to decide whether or not to buy insurance at a cost of 5 points. Outcome A did not cause financial loss. Hence, the net earning was 15 points for a participant having insurance, or 20 points for a participant without insurance. Outcome B caused a loss that could be alleviated with the insurance. If the subject did not buy the insurance, only 10 points would be kept. Otherwise, he/she would keep 15 points. Outcome C was an 'inevitable' loss irrespective of insurance such that the subject kept 10 points. To avoid confusion, the subjects also observed the net payoff structure for the session they participated in (Table 1).

During the second phase, participants were anonymously and randomly matched with a sequence of eight other participants. Participants with higher earnings were asked to make redistributions between counterparts. In each pair, the distributor was provided with the information about the insurance buying decision of their counterpart and the realized outcome. The computer program skipped redistribution in case of tied earnings. In order to exclude wealth effects and reputation effects, only one of the redistribution outcomes was chosen to be binding and shown to everyone at the end. In the corresponding control, subjects were not provided the chance to buy insurance. Each participant was randomly assigned to one of the risky scenarios in the treatment. The redistribution procedure was the same as in the treatment. By design, the only difference between the control and the treatment is whether the loss came from 'pure luck' or 'option luck'.

The experiment was computerized with z-Tree (Fischbacher 2007) and conducted at the Economics Research Laboratory at Texas A&M University using 228 students recruited through ORSEE (Greiner 2004). A total of 78 participants were assigned into the pure-luck control, and 150 subjects participated in the option-luck treatment. Each subject participated in only one session that lasted approximately 30 minutes. Before entering the laboratory, participants were told that they would receive a $10 show-up fee and extra payment based on their luck and choice, but no further details. The average payment was $16 including the show-up fee. After being seated at separate computer terminals with no communication, subjects received written instructions that were also read aloud by the experimenters. A set of control questions had to be correctly answered before the experiments began.

Table 1. Net payoff structure.

	A	B	C
LII treatment			
With insurance	15	15	10
Without insurance	20	10	10
MII treatment			
With insurance	15	10	5
Without insurance	20	5	5
HII treatment			
With insurance	10	10	0
Without insurance	20	0	0

III. Results

The histograms in Fig. 1 depict the sharp distinction in the redistributive transfers between the controls and treatments. Overall, over 60% of distributors in the 'option-luck' treatments did not transfer to their counterparts at all, and about 20% of transfers were less than 20% of pre-distributed earnings. In contrast, the distributors made significantly higher transfers to counterparts in the 'pure-luck' control. About 40% of transfers were zero, while more than 40% of transfers were 20% or more of pre-distributed earnings.

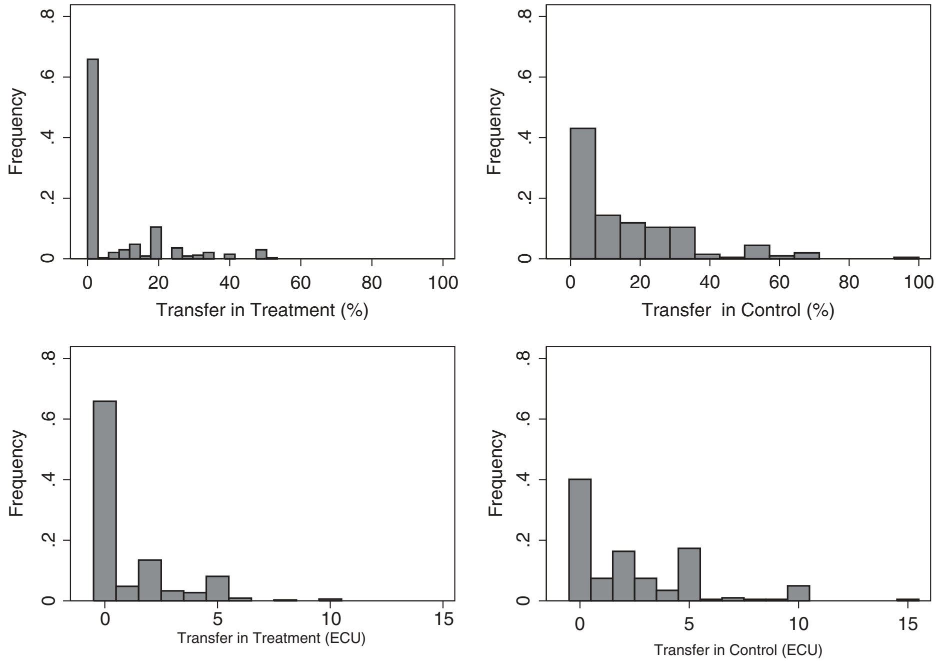

Figure 1. Transfer histograms.

Table 2. Transfers comparison.

	Transfer (%)			Transfer (ECU)		
	Treatment	Control	*p*-Value	Treatment	Control	*p*-Value
Total	7.77 (0.707) $N = 334$	15.54 (1.256) $N = 202$	0.000	1.07 (0.010) $N = 334$	2.38 (0.200) $N = 202$	0.000
LII	1.44 (0.500) $N = 58$	20.73 (3.293) $N = 50$	0.000	0.22(0.078) $N = 58$	3.20 (0.492) $N = 50$	0.000
MII	8.46 (0.981) $N = 157$	13.56 (1.877) $N = 72$	0.022	1.32 (0.154) $N = 157$	2.14 (0.327) $N = 72$	0.041
HII	9.96 (1.416) $N = 119$	14.06 (1.671) $N = 80$	0.005	1.14 (0.179) $N = 119$	2.09 (0.265) $N = 80$	0.001

Notes: SEs are in parentheses. *p*-Values are reported for Mann–Whitney *U*-tests.

Table 2 provides further evidence for widespread view of AP among subjects. The average transfer was 2.38 ECUs (or 15.54% out of pre-distributed earnings) in the 'pure-luck' controls, significantly higher than in the 'option-luck' treatment, 1.07 ECUs (7.77%) ($p < 0.001$, Mann–Whitney *U*-test). The sharp evidence was also found in subdivided pairs of treatments and controls.

We further introduce a model of fairness preferences proposed by Cappelen et al. (2007):

$$V_i = y_i - \left(y_i - F_i^t\right)^2 / 2\beta X \tag{1}$$

V_i is the latent utility of distributor i who trade-offs between his/her own allocation (y_i) and the psychological cost of acting unfairly (the second term). β measures the tolerance for unfair allocation, and X is the group earnings. We assume that the distributors endorse either CE or AP. Accordingly F_i^t is the fairness reference point for individual i of type t. F_i^{CE} is always such that makes equal earnings in the group. AP distributors discount the fairest transfer of CE distributors by the relative weights of pure luck and option luck. Consider an example in the HII group. Due to the random assignment and pure luck in the control, participants have 1/6 probability to earn 20 points, 1/3 probability to earn 10 points and 1/2 probability to earn 0 point. The probability to see a pair of person 1 earning 20 points and person 2 earning 0 point in the first phase of HII control is then 1/12. Consider instead another pair of participants with the same earnings in the first phase of HII treatment. Person 1 endogenously changed the probability of earning 20 points from 1/6 to 1/3 by not buying insurance, while person 2 changed the

Table 3. Estimates.

	Pure-luck control	Option-luck treatment
β	0.089*** (0.023)	0.120*** (0.019)
λ	n.a.	0.765*** (0.106)
LL	−553.858	−693.947
N	202	334

Notes: SEs in parentheses. ***$p < 0.01$.

probability of earning nothing from 1/2 to 2/3 by not buying insurance. Despite the same income distribution, the probability is 2/9 in the treatment, implying a discount factor of 3/8 (1/12 out of 2/9). While CE distributors' fairest transfer is both 10 points in the control and treatment ($F_i^{CE} = 10$), AP distributors' fairest transfer should discount 10 points by 3/8 ($F_i^{AP} = 16.25$).

Hence we estimate the econometric model

$$y_i^* = F_i^t + \beta X + \varepsilon_i \quad (2)$$

which is the interior solution of the utility function. There are two key parameters of interest, β and λ (the likelihood of $F_i^t = F_i^{AP}$). To capture the heterogeneity of β, we assume $\beta \sim N(\overline{\beta}, \sigma_u^2)$. The idiosyncratic error term is also assumed to be normally distributed, i.e., $\varepsilon \sim N(0, \sigma_\varepsilon^2)$. The parameters can be estimated by maximum likelihood estimation.

Table 3 reports the results supporting our argument. While there is no room for accountability in the control, 77% of participants are classified to support AP in the 'option-luck' treatment.

IV. Conclusion

Our experiment captures some important features of prosocial motives and provides some implications for public policies. People's fairness preferences and justice judgements should be understood in specific contexts varying in individual choices and luck. For example, regarding public health insurance policy, the appropriate coverage should consider whether the patients are responsible for their diseases resulting from unhealthy life habits or bad luck.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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