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Fairness Judgments of the Allocation of Organs

Findings of a Factorial Survey

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Agenda

1. Introduction
2. Theoretical implications
3. Data collection
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5. Results
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7. Discussion

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1. Introduction

- Distinction between *living donor* and *donation after death* (so called "cadaver donor")
- Statistics of *Eurotransplant* (Benelux, Austria, Germany, Slovenia, Croatia) for the year 2006:
  - 904 persons waiting for a donor *heart* – 539 heart transplantations
  - 11,069 persons waiting for a donor *kidney* – 3,239 kidney transplantations
- National coordination of organ transplantation in Switzerland (*Swisstransplant*)
- Lack of organs destined for organ procurement
- Legal distinction between presumed consent (Austria, Belgium) und extended consent solution (Switzerland, Germany)

1. Introduction

distributive justice norms:

Brink et al. (2006): allocation based on
- Exchange
- Need
- Equality/equal chances

Bayerl/Mielck (2006):
- Egalitarian perspective
- Individualistic perspective

Rawls (2003):
- Justice as fairness
- Fair rules should be accepted by the population

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1. Introduction

Implications:

- It is impossible to realize the egalitarian principle because of the lack of available organ donors.
- The problem of organ allocation can be seen as a moral dilemma (Ohlsson 1993).

Questions:

- Which fairness norms are being preferred by laypersons?
- Do the evaluation strategies of laypersons differ?
- Which personal characteristics determine a privileged position on the waitlist of organ recipients?

2. Theoretical Implications

Fairness norms of rational actors:

- Actors adjudicate organ procurement in a rational way in terms of polity economics (Elsen 1998):
  - Reproduction and care
    (sex, marital status, children)
  - Contribution to the national economy (employment)
  - Optimal use of resources
    (age, acuteness, chance of success)
- Homophilia and „taste for discrimination“ (Becker 1957)
- Helpfulness depending on sex and age

3. Data collection

Dimension 1: gender of organ recipient
(1) Mr.
(2) Mrs. (if married) / Ms. Smith is …

Dimension 2: age of organ recipient
(1) 25
(2) 40 years old, …
(3) 55

Dimension 3: marital status of organ recipient
(1) married
(2) close-partnered and has …
(3) single

Dimension 4: children of organ recipient
(1) no children.
(2) children living in the same household.
(3) children who do not live in the same household.

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3. Data collection

Dimension 5: occupation of organ recipient He/she (1) has been employed for a few years. (2) has not been employed for a few years.
Dimension 6: acuteness Because of his/her (1) serious heart disease he/she is being treated in a hospital. (2) critical heart disease he/she is being treated in an intensive care unit.
Dimension 7: probability of success This patient has a (1) 50 % (2) 90 % chance of surviving the first year after transplantation.

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3. Data collection

Please waitlist the following 10 fictive persons to receive an organ.

Mrs. White is 25 years old, is married and has no children. She has been employed for a few years. Because of her serious heart disease she is being treated in a hospital. This patient has a 90% chance of surviving the first year after transplantation.

1 – 10	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 – 80	81 – 90	91 –100

- 7 vignette dimensions
  (Cartesian product of 432 = 2 x 3 x 3 x 3 x 2 x 2 x 2)
- random sample of 120 vignettes (12 sets, 10 vignettes each)
- reorganization to avoid order effects

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3. Data collection

- questionnaire with two parts:
  - each respondent 10 vignettes
  - personal questions
- use of an example vignette
- pretest at full length (n=60)
- respondents of two student classes (sociology and economics)

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4. Respondent and vignette sample

Table 2. *The respondent sample*

Variable	Observations	Mean	Std. Dev.	Min	Max
R_FEMALE	200	.41	.493	0	1
R_AGE	200	23.92	4.283	19	66
R_ECON[a]	200	.69	.465	0	1
R_PARTNERED[b]	200	.59	.494	0	1
R_HEALTH[c]	199	.61	.489	0	1
R_TOPIC[d]	200	.23	.422	0	1
R_DON_CARD	200	.12	.325	0	1
R_PATTERN[e]	200	.41	.492	0	1

[a] Ref. subject Sociology
[b] Ref. single
[c] personal general health (1=very good/excellent)
[d] Ref. not engaged with the topic organ donation
[e] Ref. did not keep in mind the example (Ms. Pattern)

4. Respondent and vignette sample

Table 1. *The vignette sample*

Variable	Observations	Mean	Std. Dev.	Min	Max
V_FEMALE	2000	.423	.494	0	1
V_AGE40[a]	2000	.384	.486	0	1
V_AGE55[a]	2000	.315	.464	0	1
V_PARTNERED[b]	2000	.293	.455	0	1
V_MARRIED[b]	2000	.368	.482	0	1
V_CHILDREN[c]	2000	.335	.472	0	1
V_CHILDREN_HH[c]	2000	.283	.450	0	1
V_JOB[d]	2000	.529	.499	0	1
V_ACUTENESS	2000	.454	.498	0	1
V_PROB90[e]	2000	.464	.499	0	1
WAITLIST-NO	1995	3.908	2.244	1	10

[a] Ref. age 25
[b] Ref. single
[c] Ref. no children
[d] Ref. no job
[e] Ref. 50% chance of surviving the first year

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5. Results

Model	**RIO** Coeff. (T-ratio)	**RIV$_{all}$** Coeff. (T-ratio)	**RIV$_{sign}$** Coeff. (T-ratio)
Fixed effects			
INTERCEPT	3.91 (40.87)	3.91 (41.94)	3.91 (41.90)
V_FEMALE		–0.04 (–0.54)	
V_AGE40[a]		1.00 (10.60)	1.01 (10.98)
V_AGE55[a]		1.52 (15.68)	1.54 (16.35)
V_PARTNERED[b]		0.13 (1.31)	
V_MARRIED[b]		0.05 (0.51)	
V_CHILDREN[c]		–0.13 (–1.44)	
V_CHILDREN_HH[c]		–1.07 (–11.11)	–1.06 (–12.57)
V_JOB[d]		–0.24 (–3.26)	–0.23 (–3.08)
V_ACUTENESS		–0.23 (–3.12)	–0.23 (–3.07)
V_PROB90[e]		–1.32 (–17.34)	–1.29 (–17.69)
Random effects			
δ_{im} (error variance between)	1.473	1.491 (0.000)	1.495 (0.000)
ε_{ij} (error variance within)	3.569	2.472	2.471
deviance	8528.36	7880.40	7872.02
# parameters / # random p.	3 / 2	13 / 2	9 / 2
N_V / N_R	1995 / 200	1995 / 200	1995 / 200

31%

[a] Ref. age 25
[b] Ref. single
[c] Ref. no children
[d] Ref. no job
[e] Ref. 50% chance of surviving the first year

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Model	**RIVR** Coeff. (T-ratio)	**RIRS** Coeff. (T-ratio)	**RIRS$_{cross}$** Coeff. (T-ratio)
Fixed effects			
INTERCEPT	3.91 (42.84)	3.90 (42.62)	3.90 (42.49)
R_AGE	–0.04 (–2.02)	–0.04 (–2.54)	–0.04 (–2.23)
R_PATTERN[a]	0.39 (2.07)	0.39 (2.39)	0.38 (–2.32)
R_FEMALE	–0.40 (–2.16)	–0.31 (–1.91)	–0.29 (–1.78)
R_HEALTH[b]			0.04 (0.23)
V_FEMALE			–0.00 (–0.07)
V_AGE40[c]	1.00 (10.96)	0.99 (10.64)	0.99 (10.58)
V_AGE55[c]	1.54 (16.32)	1.52 (13.12)	1.52 (13.17)
V_CHILDREN_HH[d]	–1.06 (–12.57)	–0.96 (–10.91)	–0.94 (–10.73)
V_JOB[e]	–0.23 (–3.05)	–0.23 (–3.23)	–0.24 (–3.30)
V_ACUTENESS	–0.23 (–3.03)	–0.31 (–3.27)	–0.31 (–3.33)
V_PROB90[f]	–1.29 (–17.69)	–1.29 (–11.25)	–1.28 (–11.16)
V_AGE40*R_AGE			–0.02 (–0.79)
V_AGE55*R_AGE			0.02 (0.65)
V_FEMALE *R_FEMALE			–0.10 (–0.79)
V_ACUTE.*R_HEALTH			–0.14 (–0.81)
Random effects			
δ_{im} (error variance between) 7%	1.419 (0.000)	1.516 (0.000)	1.528 (0.000)
ε_{ij} (error variance within)	2.471	1.297	1.267
V_FEMALE			0.083 (>.500)
V_AGE40 slope		0.564 (0.000)	0.524 (0.015)
V_AGE55 slope		1.561 (0.000)	1.545 (0.000)
V_CHILDRENHH slope		0.582 (0.001)	0.589 (0.044)
V_JOB slope		0.254 (0.000)	0.296 (0.000)
V_ACUTENESS slope		1.082 (0.000)	1.075 (0.000)
V_PROB90 slope		1.969 (0.000)	1.998 (0.000)
deviance	7867.24	7467.97	7476.97
# parameters / # random p.	12 / 2	39 / 29	53 / 37
N_V / N_R	1995 / 200	1995 / 200	1995 / 200

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5. Results

- On vignette level fictive persons are favored depending on…
  - low age
  - high chance of success in case of a transplantation
  - children, who live in the same household
  - acuteness of transplantation
  - employment
- …not depending on…
  - sex
  - marital status
  - children, who do not live in the same household

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5. Results

- On respondent level privileged ranks have been allocated by

  - older respondents
  - women
  - persons, who do not take into account the given example

- Women take the given example into consideration more often.
- Respondents follow different evaluating strategies.
- There are no tendencies of homophilia between respondent and vignette level.

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6. Conclusion

- Laypersons follow the distributive justice norms of …
  - need (acuteness of transplantation)
  - equality (no effect of sex and marital status)
- Laypersons decide in a rational way, accounting for …
  - reproduction and care (sex, marital status, children in household)
  - contribution to the national economy (employment)
  - optimal use of resources (age, acuteness, chance of success)

7. Discussion

- Limitation on student population:
  - small variance of respondents´ age
  - no verification of homophilia to people with and without jobs possible
- Test of reciprocity norms
- Cross-national comparison of evaluation strategies in further planning (US – Germany)
- Factorial design study with living donations would be interesting, but could hardly be arrange.

Thank you for your attention!

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