

# A new theory of the social function of religion, with evidence from the Amish

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DERS Thursday Workshop



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  - Institutions are necessary to promote family because of intergenerational disagreement about optimal investment in children.
- We present qualitative and quantitative evidence from the Amish.
  - Quantitatively, we show that Amish institutions causally increase fertility.

# Motivation: What explains fertility choices?

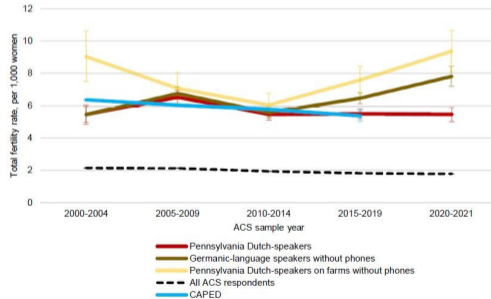
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- Economists since Malthus have cared about fertility
- In light of the sinking birth rates in developed economies (Spears and Geruso 2025), the understanding of the decision to have children is not sufficiently understood.

# Amish fertility from Stone, Anderson, and Thiehoff (2025)

Figure 1: Total fertility rates by year and language spoken at home, ACS 2000-2021 and CAPED 2000-2019, 95% C.I.



# Fertility and causal identification



# Our setting



# Theoretical motivation

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*The New York Times*

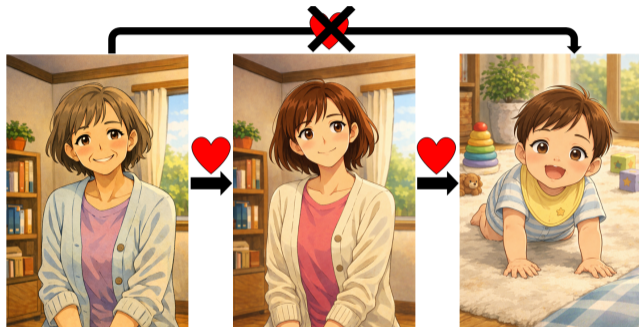
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## The Unspoken Grief of Never Becoming a Grandparent

A growing number of Americans are choosing not to have children. Their parents are grappling with what that means for them.

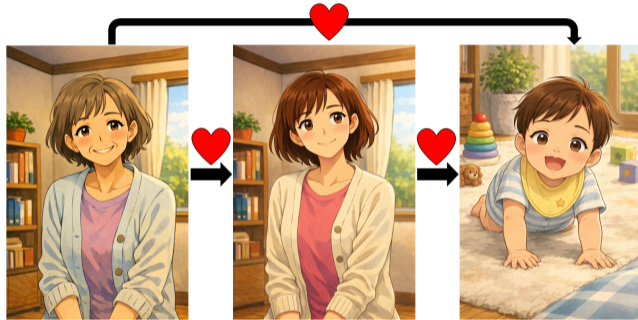


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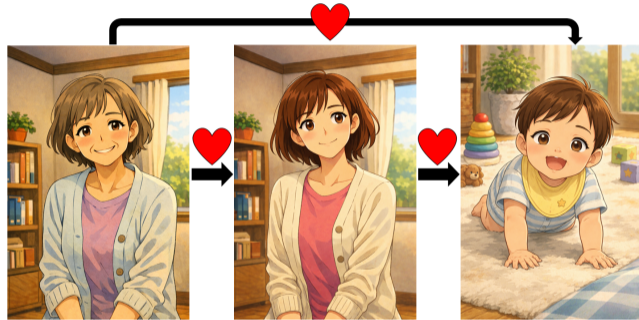
- Preferences are **consistent** across generations.
- Grandparent and parent agree about quantity of resources that parent should spend on child.
- Koopmans (1960), Barro (1974), Barro and G. S. Becker (1989) and G. S. Becker and Barro (1988)

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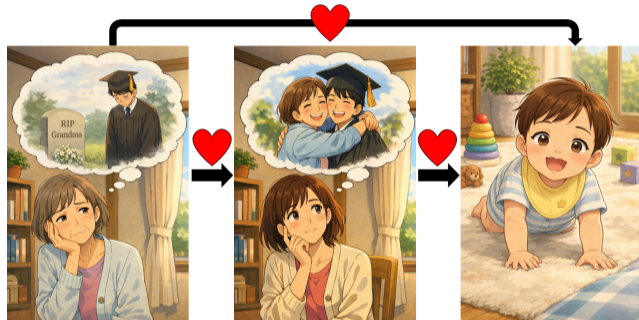
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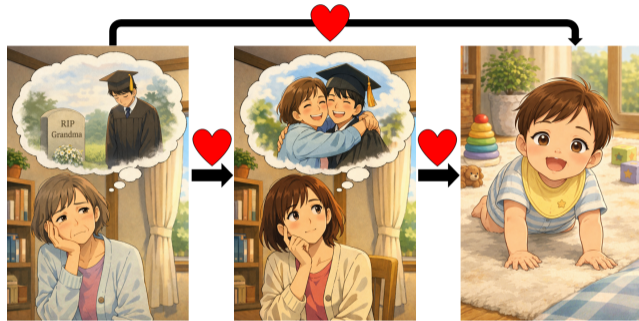
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- Galperti and Strulovici (2017)

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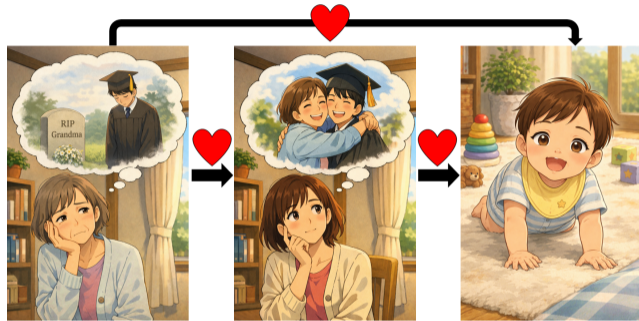
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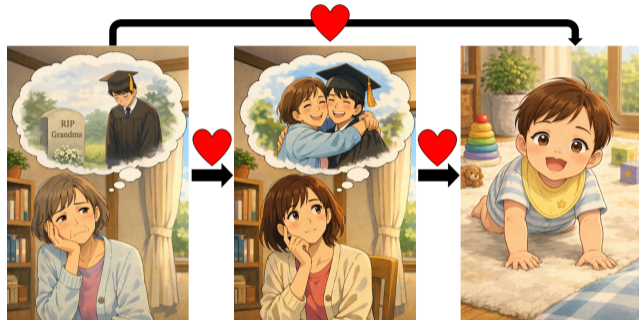
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  2. (Our model) Conditional on total resources spent by parents, grandparents want parents to spend more on child quantity and less on child quality than parents want to spend themselves.
- Putting 1) and 2) together implies that grandparents want parents to choose higher fertility than parents want for themselves.

# Religious institutions



- We argue that religious rules are imposed by the old on the young to:
  1. Shift resources from adult consumption to spending on children
  2. Shift resources from child quality to child quantity
  3. Benefit the old at the expense of the young

# Contribution of our theory

- We argue that religious institutions can be designed by the old, to shift resources from adult consumption to childbearing.
- Augmenting Iannaccone (1992), we have a model of a pro-natalist religion that is not about a club good but about increasing fertility.

▶ Comparism to Iannaccone (1992)

- As an example, the Amish limit the provision of school education to 14.

▶ Insights from S. O. Becker and Woessman (2009)

# Theory in a nutshell



# The Amish



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  2. Rules about family and child-raising practices, including gender roles in courtship and marriage.
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  3. Rules about dress and appearance
  4. Punishment for breaking the rules or leaving the church (shunning)

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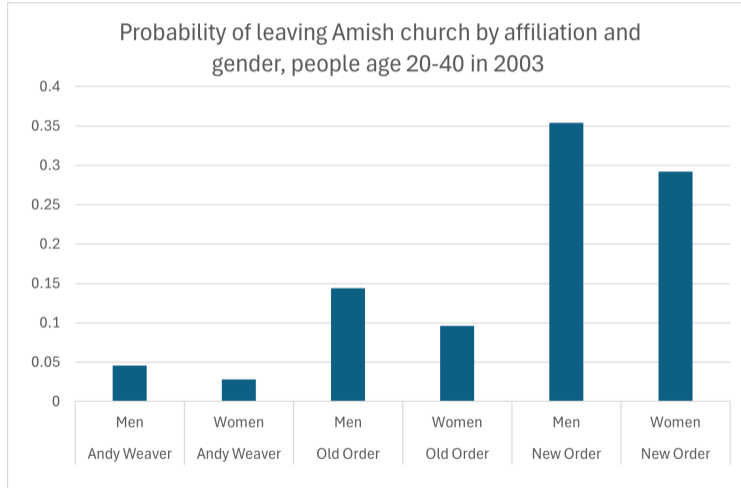
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- The bishop is chosen for life from among the male elders of the district through a complex procedure that is partly an election but that also involves an element of chance.
- For our paper, the key takeaway is that the bishop is usually one of the older members of the district. Hence **the old have disproportionate power to set the rules.**

# The effect of shunning



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  - Rules against technology limit spending on parents' consumption and shift spending towards children.
  - Rules against education reduce spending on child quality and increase spending on child quantity.
  - Punishment for leaving the church forces the young to stay in the church and conform to the rules chosen by the old.

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- An obvious problem is selection: people who leave the church are likely different from people who stay.
- To address this problem, we compare siblings, some of whom leave the church and some of whom stay, by using origin-household fixed-effects.
  - Siblings likely have more similar preferences than random people, so comparing siblings provides a test of whether selection on fertility preferences is important.

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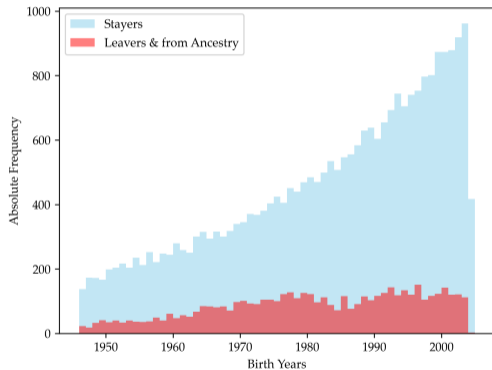
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ADA K. KAUFMAN b. Sep 07, 1955  
dau. of Paul and Lovina (Miller) Kaufman

Lovina Sue 07-23-1976BRoy Weaver, 10700 TR 523 Shreve OH  
Marie 03-06-1978BWayne M. Yoder, 9362 CR 329 Holmesville OH  
Marvin Ray 10-11-1983BMari Jo Chupp, 8239 TR 562 Holmesville OH  
David Allen 01-19-1985A  
Mary Jane 12-02-1986A  
Jay Dean 12-04-1991A  
Laura Ann 07-22-1993A

F. D. Hardwoods

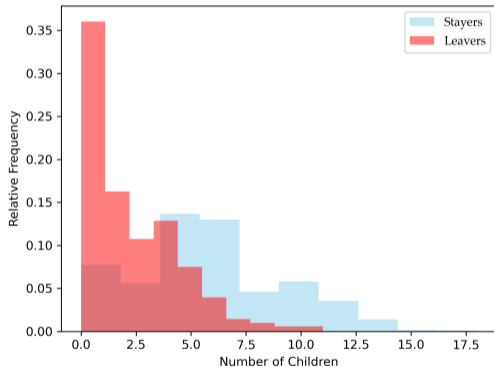
<a href="#">View Record</a>	Name	Birth Date	Birth Place	Certificate Number	Relatives
<a href="#">View Record</a>	Stacey Lynn <b>Miller</b>	15 Aug 1981		1981102218	<b>Marion R,</b> <b>Katie N</b>
<a href="#">View Record</a>	Ryan Eric <b>Miller</b>	2 Mar 1983		1983029788	<b>Marion R,</b> <b>Katie M</b>
<a href="#">View Record</a>	Clifford <b>Marion Miller</b>	24 Jul 1984		1984078189	<b>Marion C,</b> <b>Katie Ann</b>
<a href="#">View Record</a>	Lois Ann <b>Miller</b>	27 Jun 1982		1982066056	<b>Marion C,</b> <b>Katie Ann</b>
<a href="#">View Record</a>	Michael Jay <b>Miller</b>	16 Jul 1978		1978094770	<b>Marion R,</b> <b>Katie N</b>

# The final dataset



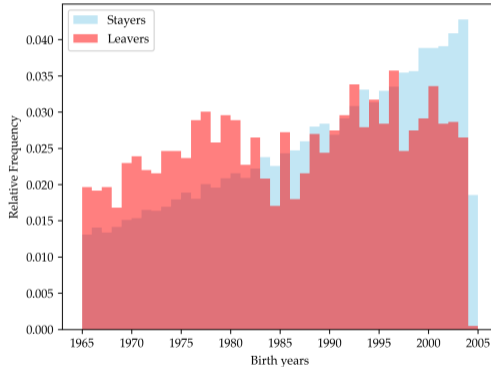
*Note:* This graph plots the absolute frequency of all leavers, their children we gathered from Ancestry, and stayers born in or after 1946.

# Visual evidence



**Note:** This graph plots the relative frequency of the number of children for married leavers and stayers born in or after 1946, aged 40 and above.

# Demographics of leavers and stayers



**Note:** This graph plots the relative frequency of the year of birth for leavers and stayers born in or after 1946, aged 40 and above.

# Results

	Dependent variable: Child born in 2003			
	Married women age 20–40		Married men age 20–40	
Left Amish church	-0.144*** (0.0303)	-0.118** (0.0517)	-0.152*** (0.0277)	-0.140*** (0.0492)
Age FE?	YES	YES	YES	YES
Affiliation FE?	YES	YES	YES	YES
Origin Household FE?	NO	YES	NO	YES
R-squared	0.063	0.525	0.056	0.512
Oster's $\delta$		1.125		1.215
Implied lower bound		-0.040		-0.092
Observations	2,781	2,781	2,783	2,783
Leavers	246	246	306	306
Mean of dependent variable	0.285	0.285	0.284	0.284

# Mechanisms? (Preliminary)

Dependent variable: Mean Amishness of children's names  
Sample: People age 20-40 who leave the Amish church

Female	7.036*** (2.126)
Age	0.00623 (0.220)
Observations	434
Mean of dependent variable	60.7

► Amishness Index

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- Hypothesis: Strict religious communities constrain men more than women.
  - Religious rules constrain community members to spend more on children.
  - Women are more altruistic towards children than men and hence prefer higher spending on children than men.
  - Hence women are less constrained than men by religious rules.

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  - Previously studied policies rarely increase fertility by more than 5-10%, small relative to the size of recent fertility declines.
- We estimate that Amish rules and institutions causally increase fertility by 60-100% (lower bound 15-50% after accounting for selection).
- So policy can significantly increase fertility! But the necessary policy interventions are very large.

# Summary and conclusion

- One social function of religion is to regulate intergenerational disagreements within families.

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- Amish rules and institutions are qualitatively consistent with our model.
- We show quantitatively that Amish rules and institutions causally increase fertility, and that this effect is large.








*Thank you!*



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# Comparison to Iannaccone (1992)



- According to Iannaccone (1992), religious rules are imposed by community consensus to:
  1. Shift resources from individual consumption to spending on club goods
  2. Benefit all members of the religious community

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- Berman (2000) extends Iannaccone (1992) to argue that religious communities may impose ordeals for people seeking to enter the community to screen out free-riders.

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- Berman (2000) extends Iannaccone (1992) to argue that religious communities may impose ordeals for people seeking to enter the community to screen out free-riders.
- We argue that the community may impose punishments on people who leave the community to force the young to follow the rules imposed by the old.

# Comparison to Iannaccone (1992)



- Iannaccone (1992) implies that religious communities are anti-natalist
- Our model implies that religious communities are pro-natalist.

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# Religion and education

- Ancient Judaism (Botticini and Eckstein 2012) and German Lutheranism (S. O. Becker and Woessman 2009) both had rules imposing education minimums rather than education maximums.



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- Ancient Judaism (Botticini and Eckstein 2012) and German Lutheranism (S. O. Becker and Woessman 2009) both had rules imposing education minimums rather than education maximums.
- These papers argue that religions viewed education not as an investment but rather as a consumption good for parents who valued reading scripture with their children.
- This is consistent with our model.

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# Amishness Index

We follow Fryer and Levitt (2004) idea of using first names to analyze group coherence, and define Amishness as

$$\frac{Pr(n|l, g, t)}{Pr(n|l, g, t) + Pr(n|-l, g, t)} \quad (1)$$

where  $n$  signifies a specific first name,  $g$  the gender,  $t$  a period (five year intervals). The local probability  $l$  is calculated from our dataset, the non-local probability  $-l$  is based on US social security applications.

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