

Powerful Parental Preferences

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WORK IN PROGRESS
VERY PRELIMINARY

Motivation

Motivation - Educational attainment matters

- Educational attainment → success in many domains.
 - Returns to education are high (global average: 9%) and have even increased in the last decades. - [Psacharopoulos and Patrinos \(2018\)](#)
 - In the US, lifetime income of those with at least a BA degree is \$587000 / 840000 higher (for females / males) than the earnings of those without diploma (even with controls).- [Tamborini et al. \(2015\)](#)
 - More educated people tend to enjoy a longer and healthier life, and the gap seems to grow over time - [Cutler and Lleras-Muney \(2006\)](#), [Case and Deaton \(2017\)](#)
- Why are there large gaps in educational attainment between individuals of different family background?
 - [Björklund and Salvanes \(2011\)](#): genetics, parents' human capital raises the MP of children's education, resources (wealth), *culture (values, preferences, parenting skills)*.

Motivation - Educational aspirations matter too

- “The greater failure is not the child who doesn’t reach the stars, but the child who has no stars that they feel they are reaching for.” [Gordon Brown \(2007\)](#)
- Educational aspirations are a necessary condition for favorable educational outcomes.
 - It seems difficult to obtain a high level of education without aspiring to it.
- Educational gaps by family background do not only materialize in educational outcomes, but also in aspirations (e.g. [Lergetporer et al. \(2021\)](#)).
- Both parents’ aspiration for the child’s educational level (that we call *parental preferences*) and the *child’s educational aspiration* associate strongly with family background.
- It is not just family background that matters for educational aspiration, but student’s characteristics (cognitive and non-cognitive skills) and school quality.

Parental preferences and related concepts

- Expectations vs. aspirations
 - Expectations: what parents / students *think* that will happen. ⇔ Aspirations: what parents / students *hope* that will happen.
 - *“Which of the following do you think he/she will actually do after this school year?”* ⇔ *“Which of the following would you like your teenager to do after this school year?”*. - [Ashby and Schoon \(2010\)](#)
- Parental investments: all type of resources that parents invest in their offspring, including time, money and efforts to provide a stimulating environment.
 - Parental investments predict very well important life outcomes, and parental investments vary greatly with family background. - [Attanasio et al. \(2019\)](#)
 - Often, parental preferences are considered a component of parental investment. However, we distinguish them clearly.

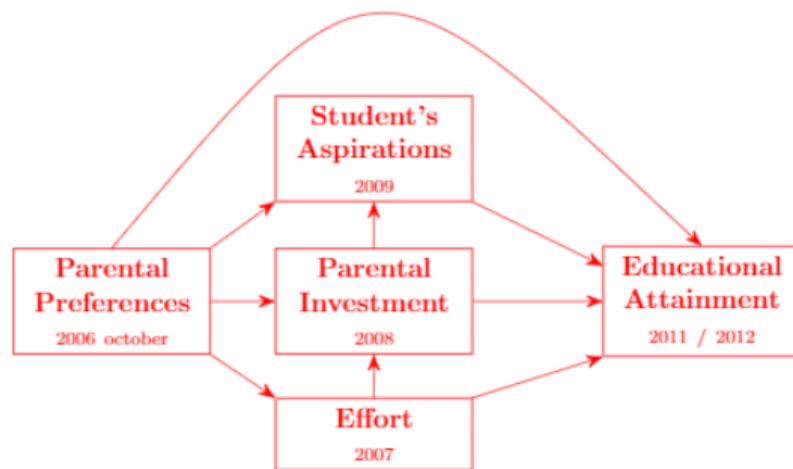
What we do in the paper

- We want to understand how parental preferences affect college attendance, once we control for a host of factors (family background, cognitive and non-cognitive skills, school).
 - Sociologists and psychologists have shown it already in the 1960's. (e.g., [Sewell and Shah, 1968](#)).
- We want to shed light on the mechanisms from parental preferences to university attendance.
 - Formal mediation analysis ([Tubeuf et al, 2012](#)).
- Causality?

Causality? Some DAGs

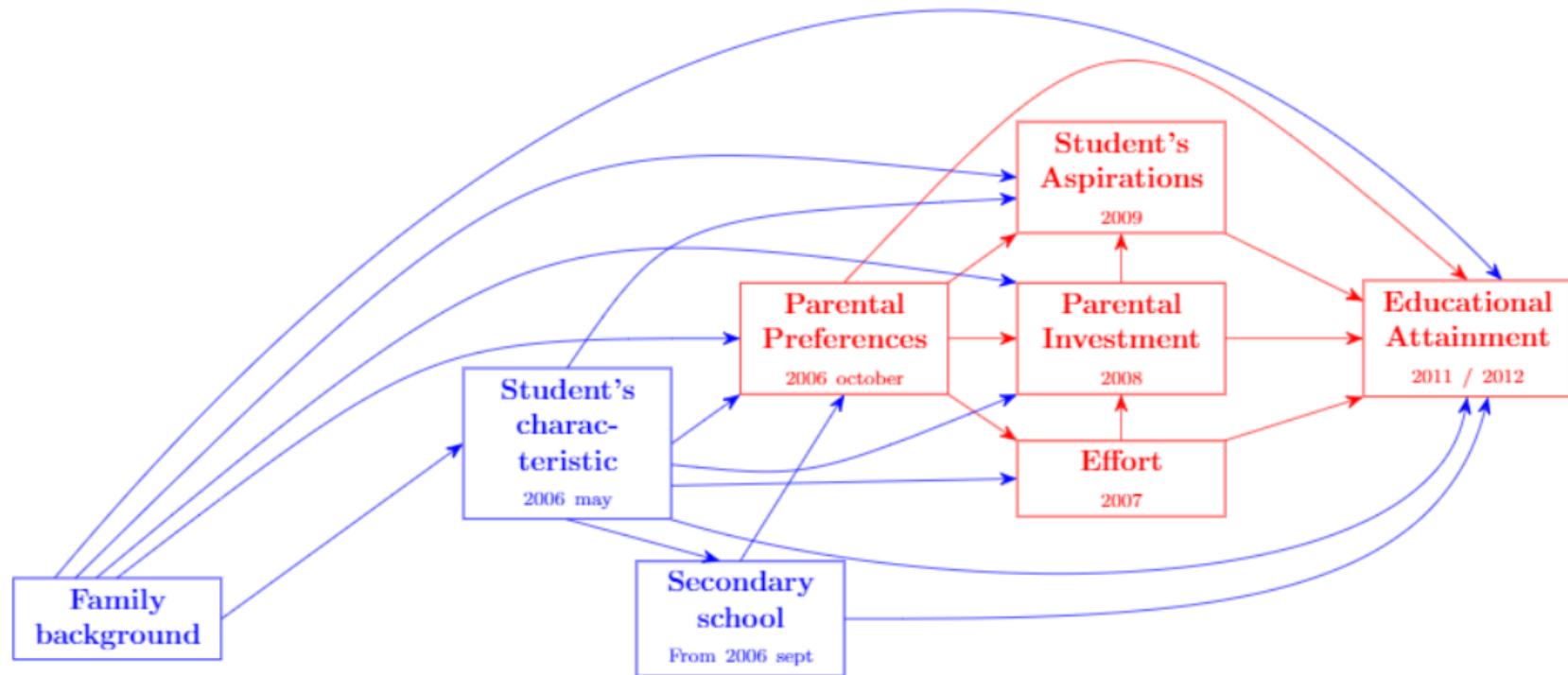
(DAG = Directed Acyclic Graphs \sim causal map)

Direct causal path



- PP \rightarrow EA is direct effect.
- PP \rightarrow SA / PI / Eff \rightarrow EA represent mediated effects.
- Mediators may be related, e.g. extra course paid by parents is effort and parental investment.
- In DAG variables are ordered in time, hence some directed paths. (One may believe that PP and SA are shaped mutually.)

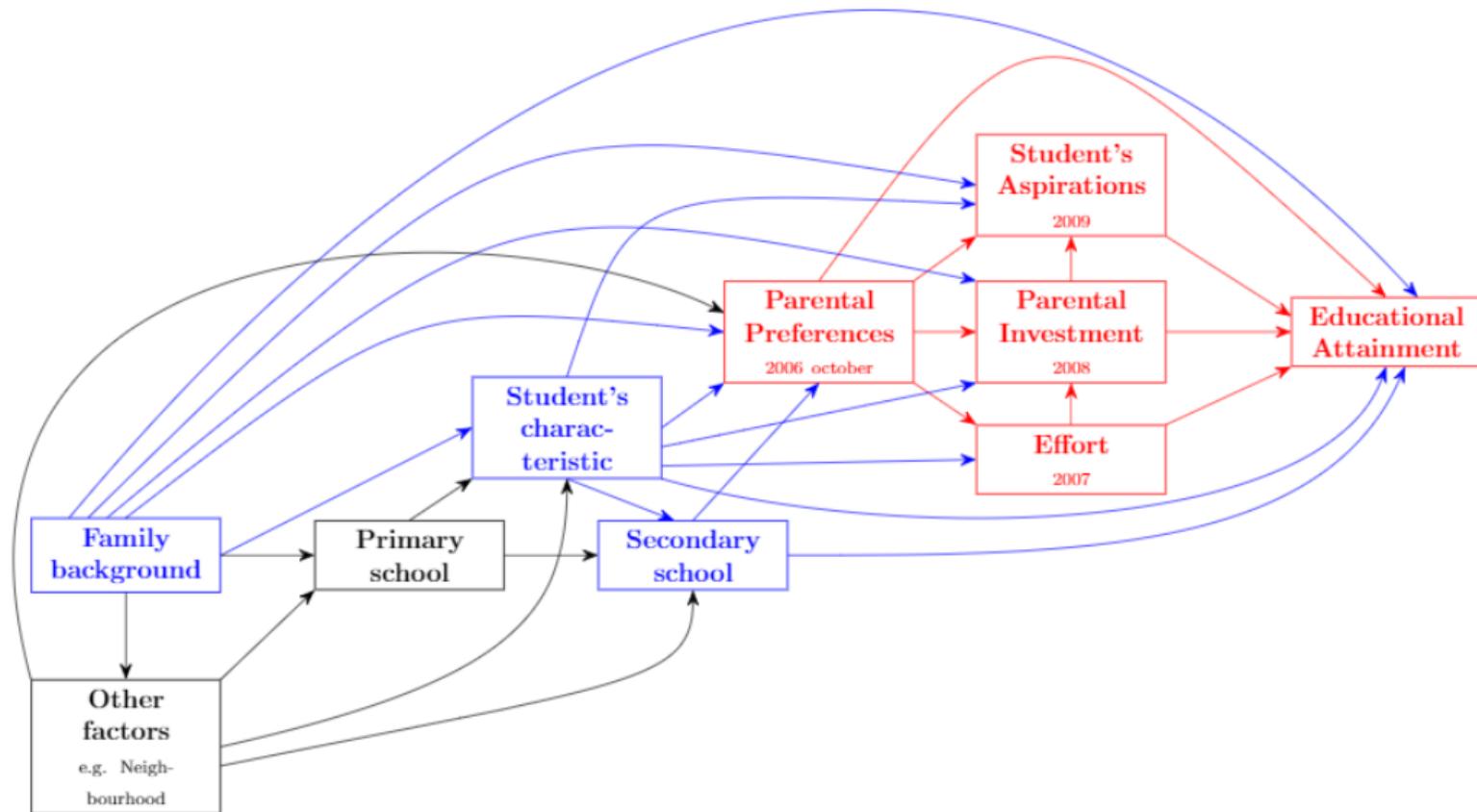
Causal map: +confounders



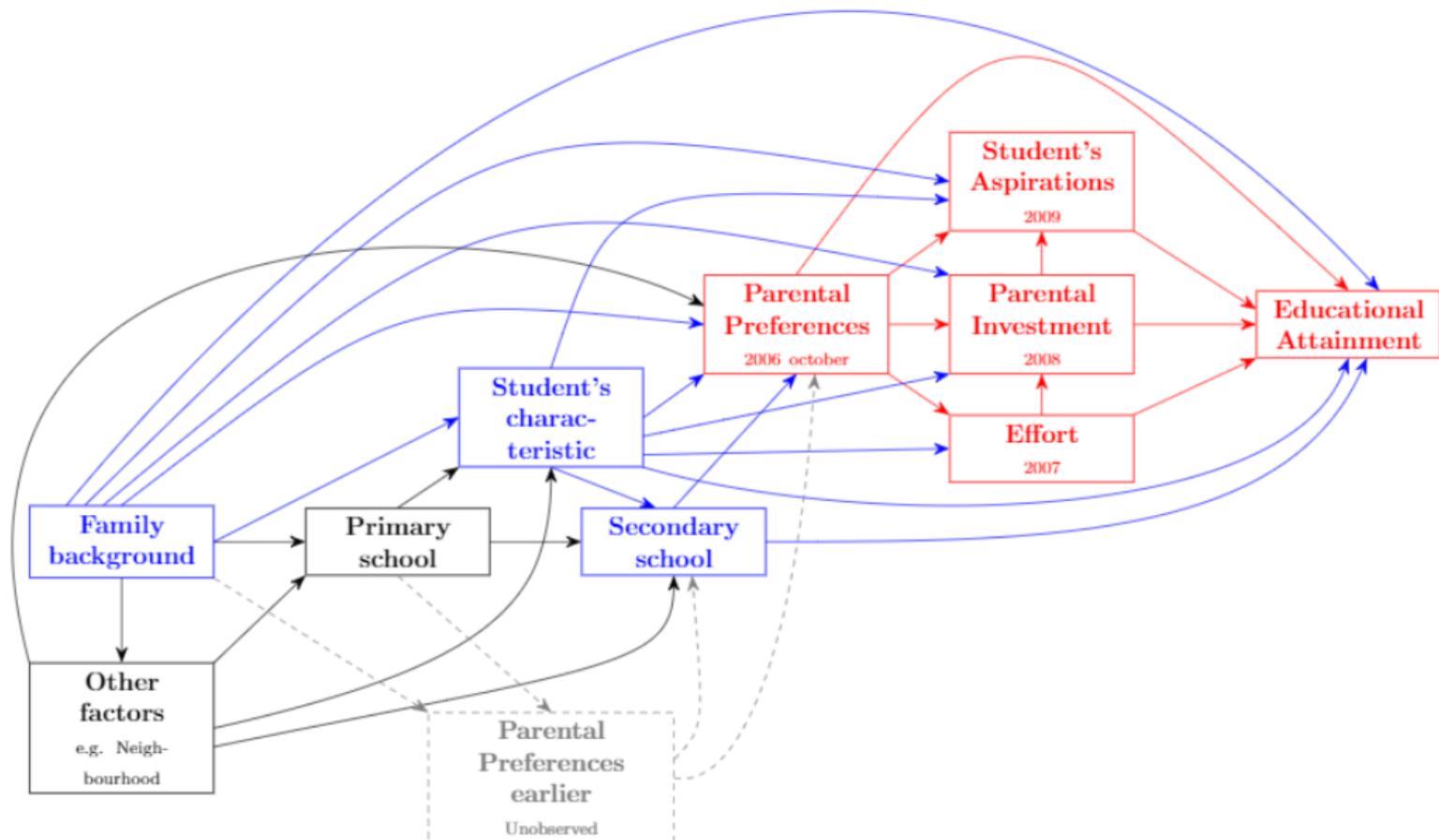
Causal map: +confounders

- We want to close any open paths that go from PP to EA, e.g. $PP \leftarrow FB \rightarrow EA$.
Backdoor criterion.
- FB, SC and SS are common causes (confounders) of the variables in the direct causal path.
- We can close open paths (e.g. $PP \leftarrow FB \rightarrow EA$) by conditioning on them (FB, SC and SS).

Causal map: +colliders



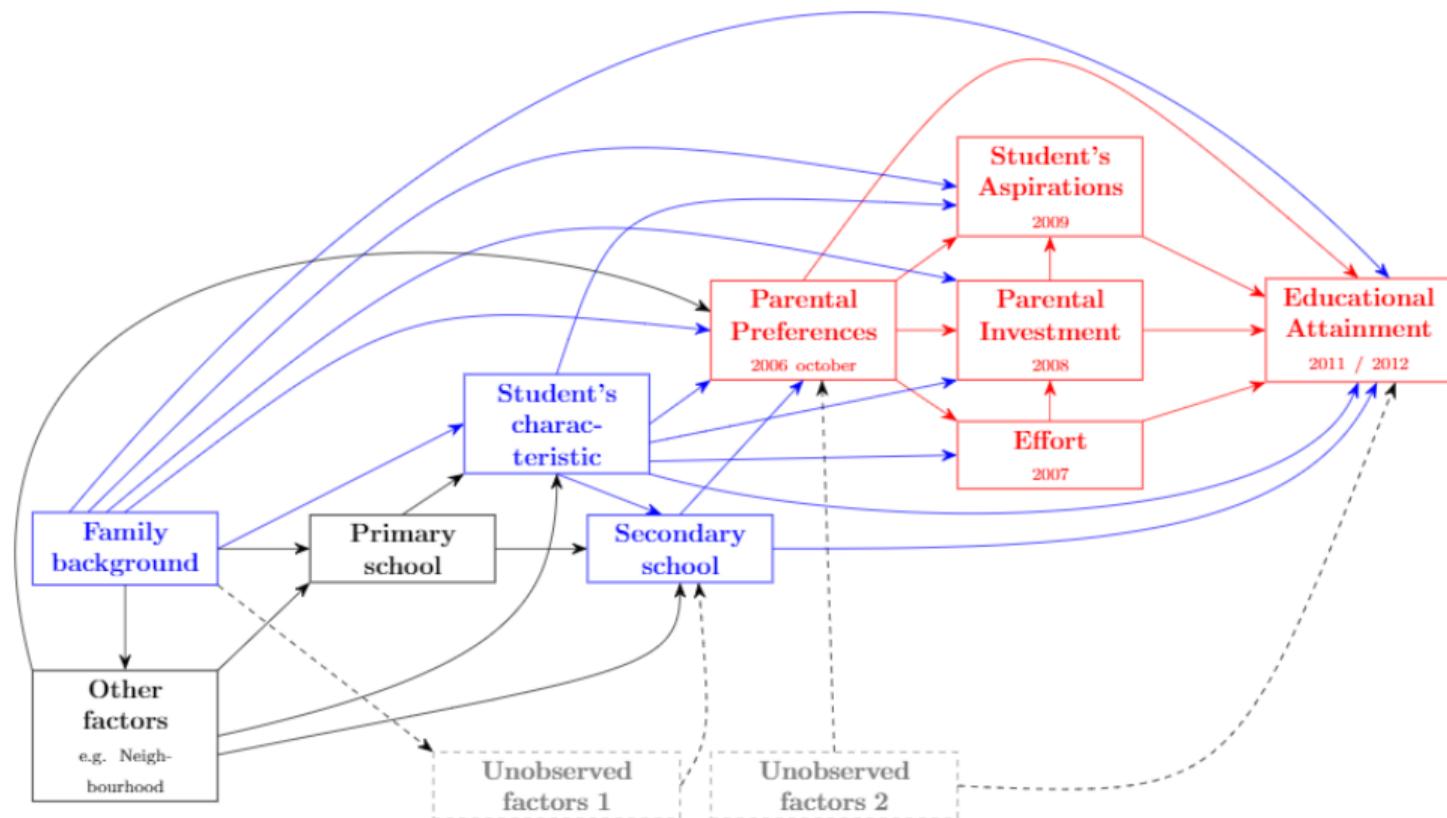
Causal map: +colliders



Causal map: +colliders

- Problematic. SS is a confounder on the $PP \leftarrow SS \rightarrow EA$ path, so we would like to condition on it to close the path.
- But it is a collider (bad control) on the $PP \leftarrow SC \rightarrow SS \leftarrow PS \rightarrow FB \rightarrow EA$, so we would not to condition on it as it would open up that path.
- We can close all open paths if we condition on SC , SS and FB , since all paths that we open up by conditioning on SC and SS go through FB .

Causal map: +unobserved factors



Causal map: +unobserved factors

- What if there are unobserved factors (e.g. earlier parental preferences, genetics) that may affect other variables of interest?
- If those unobservables are related to confounders and colliders, then there is hope.
- If those unobservables are related to PP and EA, then we cannot interpret our results as casual.

Data and methodology

Data - Life Course Survey

- Life Course Survey (Életpálya) with 10,000 adolescents who completed the Hungarian National Assessment of Basic Competencies in the 8th grade in May 2006.
- 6 waves, panel data from about 7600 students (due to attrition).
- Questions on parents' aspirations:
 - *What is the highest level of education that you would like your child to achieve?* → Ideal education level, clearly parental preferences
 - *What is the level of education that you consider your child should attain?* → Minimum education level, more related to expectations.
- Very rich data set.

Empirical method: Post Double Selection (PDS) Lasso

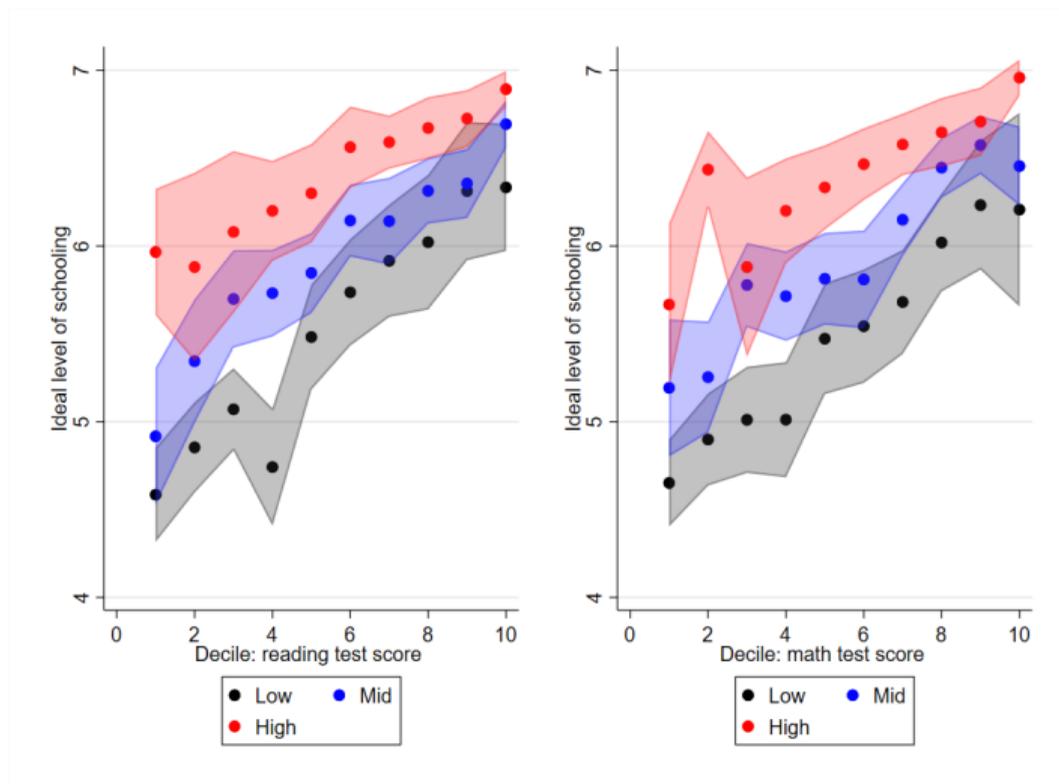
- Which variables should we have in the regressions?
- For all variable sets (e.g. family background, cognitive skills) that we have in the DAG, we have several variables (for family background we have 50, e.g. education level of the grandparents). It does not seem to be a good idea to include all of them in the regression.
- Within a variable set, we turn to the lasso model selection, a machine learning technique.
 - With lasso, those control variables are selected which make the best *out-of sample* prediction for the actual dependent variable.
 - Lasso 'penalizes' heavily the inclusion of new variables, so number of variables is limited.
- Seems better than alternatives, like stepwise regression.
- Angrist also uses it for the same goal ([Angrist - Frandsen, 2019](#)).
 - "... ML may be useful for automated selection of ordinary least squares (OLS) control variables."
 - Other examples include [Böheim et al. \(2020\)](#), [Fluchtmann et al. \(2020\)](#).

Results

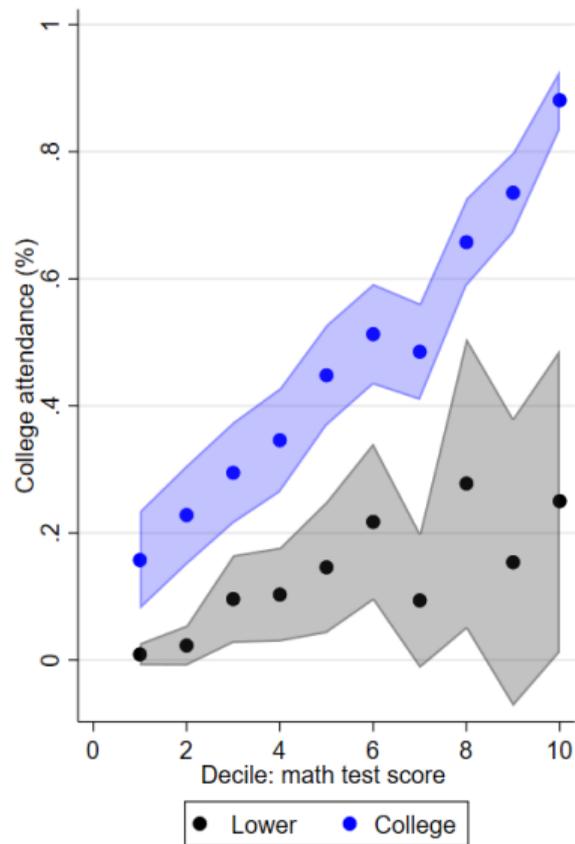
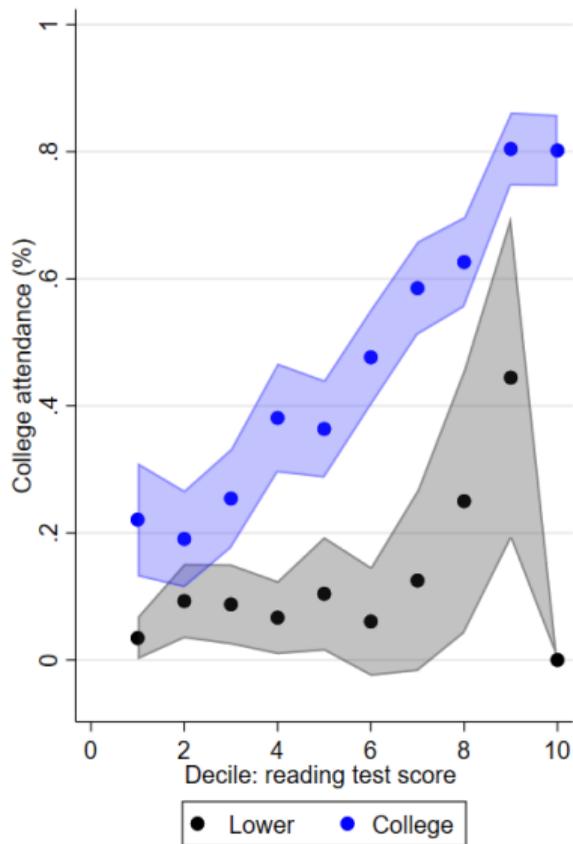
Gap in parental aspirations

Ideal level of schooling: 1: Elementary 2: Vocational 3: Vocational HS 4: HS 5: Tech. Training after HS 6: BA 7: MA 8: PhD

Mother's education: Low: Less than HS Mid: HS High: College or higher



Probability of college attendance (by parental preferences)



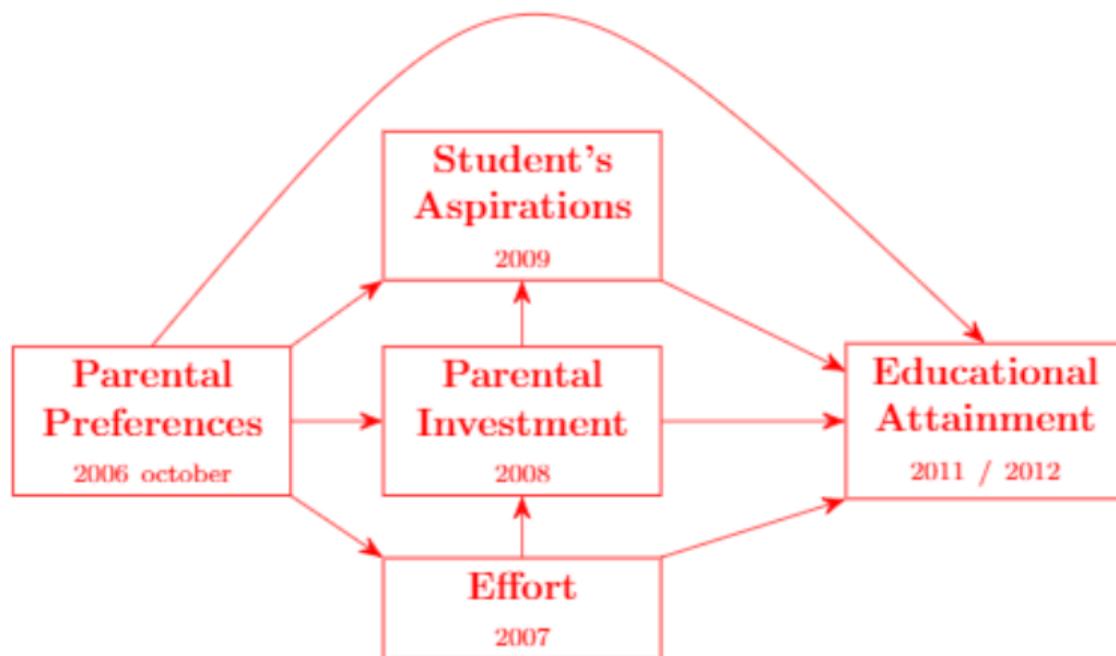
Regression analysis - Some remarks

- Dependent variable: college attendance (0/1, information when respondents 19-21 years old).
- Main explanatory variable: binary parental preferences- at least college or less?
 - The great divide is college or less.
- Students are dropped who do not graduate from HS (a prerequisite for college)
- Robust standard errors are clustered at the school level.
- In line with DAG conclusions, we control for family background (and pre-determined variables, like gender), cognitive and non-cognitive skills, school.
- Non-cognitive skills: locus of control, self-esteem, depression, sociability.
- School quality vs. school fixed effects.

Regression analysis - Dependent variable: College attendance (0/1)

	Base	Exog (FB)	(2)+Cogn	(3) Noncogn	+ (4) School quality (prim)	+ (5) School quality (sec)	+ (3) + School FE (sec)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ideal education for child: university (2006)	0.443*** [0.020]	0.275*** [0.021]	0.172*** [0.021]	0.172*** [0.021]	0.169*** [0.021]	0.108*** [0.020]	0.122*** [0.022]
Health, gender, SEN status		yes	yes	yes	yes	yes	yes
Parents' education		yes	yes	yes	yes	yes	yes
Financial background		yes	yes	yes	yes	yes	yes
Home environment		yes	yes	yes	yes	yes	yes
Cognitive (test scores)			yes	yes	yes	yes	yes
Noncognitive traits				yes	yes	yes	yes
School quality (primary)					yes	yes	
School quality (secondary)						yes	
School FE (secondary)							yes
Observations	3,364	3,364	3,364	3,364	3,364	3,364	3,364
R2	0.123	0.231	0.318	0.318	0.323	0.367	0.523
Clusters	745	745	745	745	745	745	745
Selected controls	0	10	9	9	10	16	8
Dictionary size	0	50	52	56	64	82	-

Mediation analysis



Mediation analysis

VARIABLES	Total effect	Direct+Stud.asp.	Direct+Par.Inv.	Direct+Effort	Direct effect
	(1)	(2)	(3)	(4)	(5)
Ideal education for child: university (2006)	0.127*** (0.0271)	0.0935*** (0.0267)	0.0468* (0.0258)	0.0630** (0.0261)	0.0467* (0.0258)
Parental investment (2008)		-0.00281 (0.0171)		-0.00558 (0.0167)	-0.00349 (0.0164)
Student aspirations (2009)			0.275*** (0.0219)	0.310*** (0.0217)	0.275*** (0.0220)
Effort (2007-8-9)		0.118*** (0.0121)	0.0848*** (0.0119)		0.0847*** (0.0119)
Observations	2,504	2,504	2,504	2,504	2,504
R-squared	0.551	0.574	0.608	0.597	0.608

- Less observations because data on parental investment are missing. Missing seems to be random.
- Student aspirations seems to be the main mediator, followed by effort and parental investment.
 - Student aspiration is proxied by plans to apply to university.

Discussion and conclusion

Discussion and conclusion

- Main result: Parental preferences are very strongly related to college attendance even after controlling for the family background, the child's cognitive and non-cognitive skills, and school quality.
 - In the last specification, students whose parents think that the ideal level of education is at least college have a 12.2 percentage point higher probability of attending college. This is the total effect.
 - To put it into context, this is the same effect as having 2 / 1.7 standard deviation higher test score in reading / math (given the point estimates).
- When considering the channels through which parental preferences may affect college attendance, student aspiration is the most important, followed by effort and parental investment.
- No magic, parental preferences has an effect through (intuitive) channels.
- Causality? To which degree do we believe in our causal maps.

Thanks!
Questions?