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# The Illusion of Choice: Evidence from Barcelona

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***In the last two decades, over two-thirds of OECD countries have augmented families' capacity to choose schools for their children beyond those closest to their homes (Musset, 2012). The aims of school choice are to improve (1) the matching between children and schools and (2) students' educational outcomes. At the same time, (3) there are equity concerns around school choice as maybe disadvantaged families are less able to exercise choice.***

Generally, parents are asked to submit a list with their ranking of schools, and then a set of rules determines the final allocation—so-called school choice mechanisms. One of the most widely used procedures in school choice is the so-called Boston mechanism. This mechanism assigns all applicants to the school ranked first, and if there is overdemand for a school, ties are resolved according to priorities. These priorities can be defined through a random lottery or according to criteria such as distance to the school, existence of siblings in the school, or other socioeconomic variables. Those rejected from their school ranked first can opt for the seats that remain free only after considering everyone's school ranked first. This process drastically reduces the chances of being accepted in any particular school after being rejected from one's school ranked first. This may lead families to avoid overdemanded schools, to avoid rejection from those schools. Priorities for residence may seem innocuous, but they can have a large impact on parents' behavior. They may lead families to perceive that the schools for which they have highest priority are safer.

In Calsamiglia and Güell (2014) we exploit a very rich administrative data set that contains all primary school applications in the city of Barcelona, Spain. We observe that in any given year, around 80 percent of families apply for a neighborhood school. But by observing parents' choices at a point in time, one cannot identify whether this behavior results from families' preferences for the neighborhood schools or from families applying for a safer school. We exploit an unexpected change in the definition of neighborhood occurring in 2007 to assess whether it is preferences or safety that drives parents' school choice. The set of schools for which families have priority changed with this new definition of neighborhood, and that this change is exogenous to families. Our key insight is that if parents choose according to their preferences, then a change in neighborhood definition should not systematically change their choices. Instead, if parents play it safe, then a change in neighborhood definition may affect their choices.

We focus on families' schools ranked first and find that after the change in neighborhood definition, families avoid applying for the old neighborhood schools and apply to the new neighborhood schools.

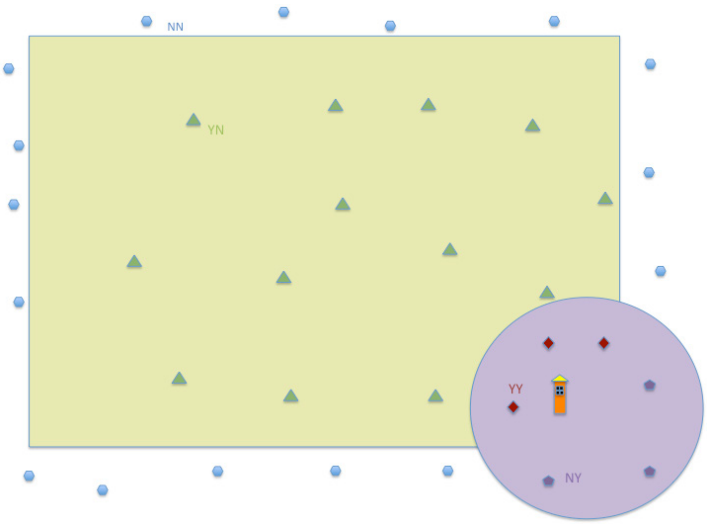


*Figure 1. School description for a family living on the corner of the district.*

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Percentage of families applying for YN schools | 18 | 21 | 10 | 7 | 8 | 8 |
| Percentage of families applying for NY schools | 10 | 9 | 17 | 18 | 18 | 17 |
| Percentage of families applying for YY schools | 51 | 56 | 63 | 65 | 64 | 65 |
| Percentage of families applying for NN schools | 19 | 13 | 8 | 9 | 10 | 10 |

*Table 1. Families' first choice over the years*

In order to illustrate these changes we classify schools for each family as follows:

- Yes-Yes Schools (YY hereafter): in the old neighborhood and in the new neighborhood.
- Yes-No Schools (YN hereafter): in the old neighborhood but not in the new neighborhood.
- No-Yes Schools (NY hereafter): not in the old neighborhood but in the new neighborhood.
- No-No Schools (NN hereafter): not the old neighborhood and not in the new neighborhood.

The following picture illustrates this classification for a family living at the corner of the old neighborhood. Diamonds, pentagons, triangles, and hexagons in these graphs represent schools. The (orange) building is a particular family/ address. The (green) square represents the old neighborhood, and the (purple) circle refers to the new neighborhood.
If families play it safe, the change in behavior should be such that they stop ranking first schools that are no longer in their neighborhood. Consequently, the proportion of families that ask for YN schools should decrease between 2006 and 2007, which is exactly what we observe in Table 1. The proportion of families that ask for YN schools was reduced from 21 percent to 10 percent, which is a decrease in demand of 52 percent.
Moreover, if families play it safe, the change in behavior should be such that they start ranking first schools that are in their new neighborhood, because these schools now give them priority points. Consequently, the proportion of families that ask for NY schools should increase between 2006 and 2007, which is exactly what we observe in Table 1. above

The proportion of families that ask for NY schools increased from 9 percent to 17 percent, which is an increase in demand of 89 percent. This very large increase indeed suggests that safety, rather than parents' preferences, plays a crucial role in choosing a school.

This implies that the gains of school choice in terms of matching of children and schools seem limited, because the equilibrium allocation is not very different from that without choice, where children are assigned automatically to their neighborhood school.

One important concern in the debate regarding the B-mechanism is that naive parents, being unable to strategize, may be harmed by the system (see Pathak and Sönmez, 2008). Abdulkadiroglu et al (2006) report that in Boston, 19 percent of parents seem to be naive, playing a dominated strategy. We also find a similar fraction of parents exhibiting seemingly naive behavior. By merging our application data with register data, we can rationalize some of their behavior. Register data allow us to understand how bad the outcome is for those taking risks in this game. We find that of those who are unlucky and do not get their school ranked first, 14 percent of them go to an outside option, mainly private school (although only 4 percent of schools are private in Barcelona), and around 30 percent do not get any of the schools that they ranked.

Our application data set was merged with the population census data in order to yield information about parents' socioeconomic characteristics. Having this information allows us to analyze the level of education for these families. Figure 2 shows that those who are particularly harmed by the system, that is, by not getting any of the schools ranked in their application, have systematically lower levels of education than those applicants who do not take any risk. Similarly, those with higher levels of education can take higher risk and therefore have greater access to the best schools in the city.

Our empirical evidence suggests that under the B-mechanism, (3) important inequalities emerge, because the mechanism provides those who can afford private school with an outside option that allows them to play a riskier strategy in the public assignment and have a better chance of getting the best schools in the public system.

This paper shows that with the BM, priorities overtake the role of preferences for most applicants. The risk involved in stating preferences is not worth taking, leading most of the applicants to apply for one of the neighborhood schools, independently of the identity of those schools. Only a few families who have the option of private school if they are unhappy with their allocation can take the risk of stating their preferences. Those who dare to take risks without having an outside option are particularly harmed by the system, which rationalizes why most families do not take risks.

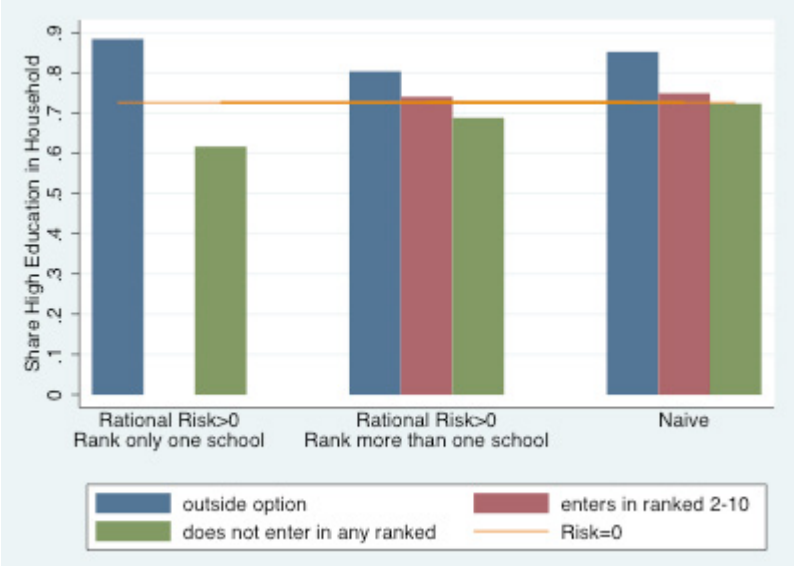


*Figure 2. Household education and final outcome*

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