The mission of a school as a compensating differential: The case of Waldorf schools

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Abstract

Data from a teacher survey in Zurich show that the mission of a school, that is its pedagogic profile and its organizational form can serve as a strong incentive in the labour market for teachers. Teachers in Waldorf (Rudolf Steiner) schools who have an equal or even higher education level than teachers in ordinary public schools work the same hours doing very similar work and earn massively less. In this paper the consequences of this finding for models of school choice are discussed and it is tried to shed some light onto the differences between the school types that serve as non-monetary compensation. Waldorf teachers name pedagogic profile and form of school organization as their main reasons for choosing their workplace whereas teachers in public schools name other reasons like the location of the school or the composition of the student body. Waldorf teachers identify themselves more strongly with their colleagues, their school, and the pedagogy practised there. They also state higher satisfaction with a number of working conditions. Whether the differences in pedagogy and organizational form attract teachers with with different social preferences is tested with a sequential prisoners' dilemma and a distribution game which where built into the questionnaire. No big differences in this respect are observed between the two groups of teachers.

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1   Introduction

The theory of equalizing differences explains wage differences between jobs by differences in working conditions.[1] Timothy Besley and Maitreesh Ghatak (2005) offer a model which focuses on a very specific working condition, the employer's mission. In their model all workers are motivated by some mission and in case they are matched with an employer that shares this mission they provide higher effort under the same monetary incentives. This makes it then optimal for the employer to lower the wage. As an example for a market in which such missions play a role Besley and Ghatak name the school market. According to their model, decentralizing the school market would lead to a greater heterogeneity of school profiles and to better matches of teachers who are motivated by different school profiles and the schools. Such a reform would thus increase the efficiency of the school market.

In this study I present evidence from a small-scale survey (29 Waldorf teachers and 31 public school teachers) in the greater area of Zurich, Switzerland, showing that some teachers are indeed highly motivated by the mission of a certain type of school, namely Waldorf schools.[2] Consequences for models of school choice are discussed and I try to answer the question what the equalizing differences are.

To see the relevance of the topic consider Chile which has decentralized its education system to a large extend and where about one third of all schools are privately operated (Mc Ewan and Carnoy 2000).[3] Some regions in the US have also introduced school vouchers to increase school choice. The basic idea behind these reforms is not to reach better matches of teachers and schools but to increase competition between schools, assuming this has a positive effect on student achievement.[4] However, the labour market for teachers is also affected by such reforms.

The literature on school choice offers a number of models to explain how parents choose the school for their kids. These models are used to simulate effects of reforms on the distribution of students across schools and even to predict residential patterns in specific urban areas (Nechyba 2006). A key element in these models is the tuition charged by private schools. It is usually assumed that inputs are as expensive for public schools as for private ones or that some (religious) private schools subsidize tuition at a fixed rate. Taking into account that the bulk part of school spending goes into teacher salaries it might be worth while having

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[1]For a theoretical exposition of the theory see Rosen (1986).

[2]See Appendix for details on how the survey was carried out.

[3]In Chile three different types of schools exist: public schools, privately run voucher schools and non-subsidized private schools.

[4]See Hoxby (2002) for a discussion of school choice reforms in the US and their effects.

a closer look at teacher motivation. In case some teachers are very motivated to work for a religious school or a Waldorf school and would even do so if wages were significantly lower these schools would be able to buy the same inputs at lower prices than public schools and other private schools.

Results from the survey show that teachers in Waldorf schools are equally well (or even better) educated than teachers in public primary schools, work the same hours doing similar activities and earn massively less. The median monthly gross income for a full time employed teacher in my survey lies between 4400 and 4600 CHF for Waldorf schools and between 7000 and 7200 for public primary schools.

The implications of this large difference for school choice are discussed in the following section. The important question why Waldorf teachers work for so much less money is addressed in section 3. Differences in working conditions, identification with the school and the pedagogy are reported by the teachers in the questionnaire. Two hypotheses with respect to social preferences are tested, using behavioural games which were built into the questionnaire. The first hypothesis is that Waldorf schools, due to their organisational form, attract more reciprocal teachers than public schools. Waldorf schools often do not have a headmaster but are jointly managed by all teachers. School finances depend a lot on voluntary payment of higher than average tuition by the parents and on the willingness of teachers to ask for low salaries.[5] A high degree of cooperation from teachers and parents is needed for this organisational form to work which, therefore, should be more attractive for teachers with a higher propensity to cooperate (reciprocate). The second hypothesis is that, due to some aspects of Waldorf schools' pedagogical practice, they attract more inequality averse teachers than public schools. In Waldorf schools the students are not marked. A more holistic development is the goal and mere achievement ranks lower in the priority list. Teachers who dislike inequality among others could therefore be more attracted by this pedagogy. The tests for these hypotheses are explained in section 3.

The paper proceeds as follows. In section 2 a school choice model is presented to study the effect of teacher motivation on school choice for parents and the resulting enrolment shares of students in the different types of schools. Section 3 offers an answer to the question why some teachers still choose to work for Waldorf schools or, put differently, what the equalizing differentials are. Section 4 concludes.

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[5]In fact, parents interested in enrolling their kid in a Waldorf school are asked to pay as much tuition as they can afford. Teachers are asked in their job interviews how much money they really need as a salary and the scarcity of school resources is stressed in these talks.

2 School Choice

In this section a model is presented to explain how teacher motivation influences the school choice of parents and thus the share of students enrolled in different types of schools. In the literature on school choice different models have been proposed and used to simulate effects of reforms.[6] Studies by Cohen-Zada and Justman (2005) and Ferreyra (2007) explicitly consider religious private schools. In their models parents have a preference parameter in their utility function to express the valuation of whether the school is religious or not. Both papers consider the fact that religious schools may have privately subsidized tuition at a fixed rate.[7] Using enrolment data from different regions in the US both papers calibrate their model and use it to simulate effects of the introduction of vouchers. I will argue in the following that both studies miss one aspect. In case the subsidy mainly comes from teachers accepting to work for lower wages, as Cohen-Zada and Justman speculate, and the reason is that they are motivated by the school's mission the subsidy will decrease if school enrolment in these schools goes up, for example through the introduction of vouchers. As teacher salaries make up the bulk part of school expenses this channel is likely to be important.[8] The reason for the decrease in the subsidy rate is that if the schools need to hire more teachers these will on average be less motivated and consequently ask for higher wages.

I will now present the model by Cohen-Zada and Justman which I slightly modify to show how teacher motivation influences school choice. Instead of a preference parameter for religion I use a preference parameter for Waldorf pedagogy. The subsidy comes entirely from teacher motivation and therefore the magnitude of this implicit subsidy depends on average teacher motivation in these schools and, therefore, on the share of students enrolled in Waldorf schools. This is different to the original model, where the subsidy rate is fix. The following exposition is very close to the text by Cohen-Zada and Justman (2005).

In the model parents who have an income y_i derive utility from consumption c_i and from school spending per student x_i. Above that, they value spending per student differently if it is a Waldorf school (which is expressed by a preference parameter z_i.). The utility of household i is:

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[6]For a good review see Nechyba (2006).

[7]The subsidy may be as high as 50% according to Hoxby (1998) and therefore plays a crucial role.

[8]Other forms of direct subsidies like direct transfers from the church in case of religious schools also exist. Nevertheless, salaries play an important role. A footnote from a US Supreme Court Note (US-Supreme-Court 2002) states that average salaries for principals in catholic primary schools were 60% lower than for public schools and direct parish subsidies made up 24.1% of school revenues.

$$U(c_i, x_i, z_i) = \begin{cases} c_i^\alpha x_i^{1-\alpha} & \text{if it chooses a non-Waldorf school,} \\ c_i^\alpha (z_i x_i)^{1-\alpha} & \text{if it chooses a Waldorf school,} \end{cases} \qquad (1)$$

with $0 < \alpha < 1$. Households who value Waldorf pedagogy have a preference parameter $z_i > 1$, households who dislike it $z_i < 1$. Public education is free and financed by a tax rate t. Spending per student in public schools $\bar{x}$ is therefore:

$$\bar{x} = tY/q. \qquad (2)$$

Private schools, which are either Waldorf schools or schools without a particular mission, charge tuition. It is further assumed that both types of private education are supplied by perfectly competitve markets that offer all desired levels of spending per student to the parents. Waldorf schools profit from the implicit subsidy of lower teacher salaries at a rate $h(q_w)$, which depends on the share of students enrolled in Waldorf schools q_w and therefore charge lower tuition than non-Waldorf private schools. Parents who are indifferent between Waldorf and non-Waldorf schools ($z_i = 1$) value a Waldorf school charging $(1 - h)x$ Swiss Francs as much as a public school that spends x Francs per student or a non-Waldorf private school charging x Francs. In Cohen-Zada and Justman's model the parents vote on the tax rate. Here it is taken as exogenous.

Let us now turn to the decision problem parents face. In case they send their kid to a public school they obtain the following utility:

$$V_p(y_i, t, q^e) = [(1-t)y_i]^\alpha [tY/q^e]^{1-\alpha}. \qquad (3)$$

In case they send it to a non-Waldorf private school, they have to solve:

$$\max_{c,x} c^\alpha x^{1-\alpha} \quad \text{subject to } c + x = (1-t)y_i. \qquad (4)$$

They consequently spend $\alpha(1-t)y_i$ on consumption and the rest on tuition and obtain the following utility:

$$V_n(y_i, t) = \alpha^\alpha (1-\alpha)^{1-\alpha} (1-t)y_i. \qquad (5)$$

In case they send it to a Waldorf private school, they have to solve:

$$\max_{c, z_i x} c^\alpha (z_i x)^{1-\alpha} \quad \text{subject to } c + (1-h)x = (1-t)y_i, \tag{6}$$

which leads to the following utility level:

$$V_w(y_i, z_i, h, t) = [z_i/(1-h)]^{1-\alpha} \alpha^\alpha (1-\alpha)^{1-\alpha}(1-t)y_i. \tag{7}$$

Which type of school is chosen? It is easy to see that parents with $z_i < (1-h)$ will never send their kid to a Waldorf school. They will send it to a non-Waldorf private school if their income exceeds a certain level y_n and to a public school otherwise. This is graphically illustrated in Figure 1.
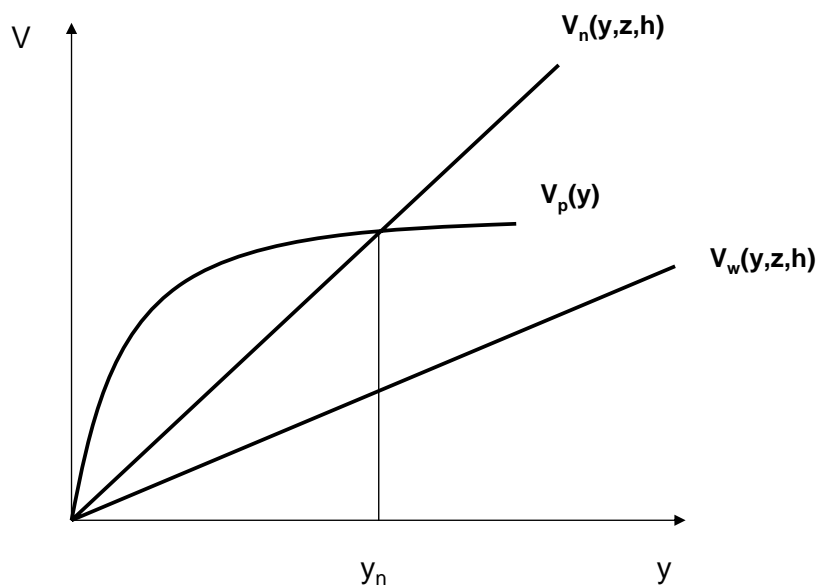

Figure 1: Decision if $z < (1-h)$, Figure 1 from Cohen-Zada et al. (2005), slightly modified.

In case $z_i > (1-h)$ the parents will never choose a non-Waldorf private school and send their kid to a Waldorf school if their income is higher than $(1-h)y_n/z_i$ and to a public school otherwise (see Figure 2). The V_w line turns counter clockwise if h increases. This leads to a higher share of students enrolled in Waldorf schools.
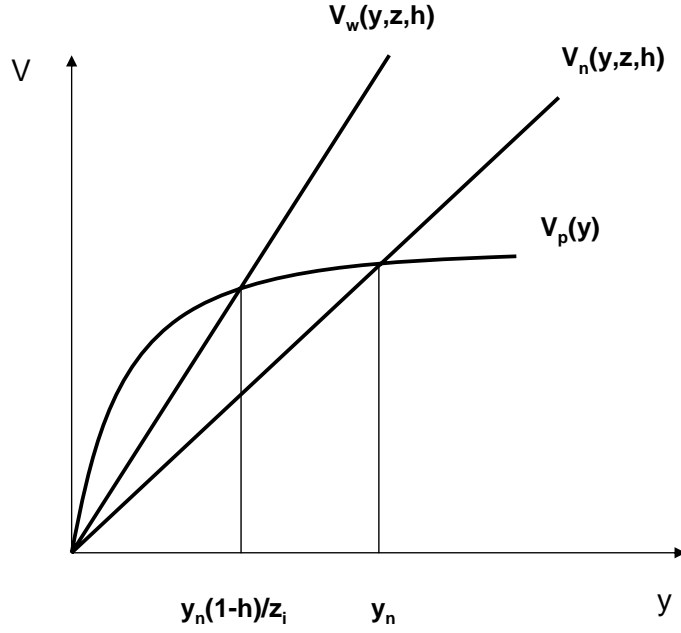
Figure 2: Decision if $z > (1 - h)$, Figure 2 from Cohen-Zada et al. (2005), slightly modified.

From the parents' utility functions the share of students going to each of the three school types can be derived. The share of students going to non-Waldorf private schools is:

$$q_n(t, q^e) = \int_{y_n(t,q^e)}^{\infty} \int_0^{1/(1-h)} f(y, z) dz \, dy, \tag{8}$$

with $f(y, z)$ being the pdf of the joint distribution of y and z. Hoseholds with $z_i > (1 - h)$ always prefer Waldorf over non-Waldorf private schools and choose a Waldorf school if $z_i y_i > y_n(1 - h)$. Using the notational convention that $\underline{z}(y_i, t, q^e) = 1$ for $y_i \geq y_n$ the share of students going to Waldorf private schools can be written as:

$$q_w(t, q^e) = \int_{y_n(t,q^e)}^{\infty} \int_{\underline{z}(y,t,q^e,q_w)}^{\infty} f(y, z) dz \, dy, \tag{9}$$

where $\underline{z}(y_i, t, q^e) = (1 - h)(y_n(t, q^e)/y_i)$ is the threshold value at income y_i for choosing a Waldorf school. All parents with $z_i \geq \underline{z}(y_i, t, q^e)$ choose a Waldorf school and all parents with $z_i < \underline{z}(y_i, t, q^e)$ a public school.[9]

In contrast to the model of Cohen-Zada and Justman who take h as exogenous it now depends on q_w. If we assume that all tuition goes to teacher wages a subsidy rate of $(1 - h)$

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[9]The share of students going to public schools is consequently $q = 1 - q_n(t, q) - q_w(t, q)$.

means that teachers work at a wage rate $(1-h)w$, if w is the market wage rate. Parameter h is therefore a parameter measuring teacher motivation. If we assume h has a non-degenerate distribution the more teachers hired in Waldorf schools the lower h will be on average, $\partial h/\partial q_w < 0$. The threshold value $\underline{z}$ falls with h, $\partial \underline{z}/\partial h < 0$. As $h > 0$ for every value q_w, q_w will always be higher than if teachers were not motivated. However, h goes down with increasing enrolment. In case one tries to increase enrolment in Waldorf (or religious) schools, by offering vouchers, this counter effect should be considered. How the distribution of motivation h for different school missions looks like is unknown but the results from this study and the other studies mentioned earlier indicate that h seems to be quite high for low enrolment rates in Waldorf or religious schools. How it would change with higher enrolment is a matter of speculation but the change could be sharp if only few teachers are motivated by the mission.

3 The equalizing differences

In the empirical literature on the theory of equalizing differentials various working conditions have been looked at. Some recent examples are Krueger and Schkade (2007), who present evidence that talkative persons select interactive jobs, Viscusi and Hersch (2001) who look at risk taking behaviour of smokers and non-smokers and Stern (2004) who look at freedom in research as a job characteristic in Universities and R&D departments. Hamilton et al. (2003) look at self selection into team or individual production inside a garment factory, Dohmen and Falk (2006) investigate self-selection into different pay schemes according to risk and social preferences in a laboratory experiment and Burks et al. (2006) look at social preferences of bike messengers working under different pay schemes. A theoretical labour market model with an equilibrium separating cooperative and selfish workers is offered by Kosfeld and von Siemens (2007). Akerlof and Kranton (2005) develop a model in which workers derive utility from identification with their employer.

Let us now turn to the question why Waldorf teachers earn so much less than public primary school teachers, or differently put, why at all there are teachers working for Waldorf schools, given the low wages they offer. Table 1 presents the distribution of teachers over income intervals. The bunching of Waldorf teachers in the lowest interval and of public school teachers in the highest might indicate that some of them earn even less (more).[10] But

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[10]In the questionnaire they had to check the interval in which their gross monthly income (adjusted to a full time position) lies. Designing the questionnaire I assumed that all teachers earn between 4000 and 8000

even without taking this into account the difference is enormous with the distance of the median incomes between both groups lying between 2600 and 3000 CHF.

Table 1: Gross monthly income classes (CHF), column percentages

Income class	Waldorf	Public
4000-4200	44.4	0
4201-4400	3.7	0
4401-4600	7.4	0
4601-4800	7.4	0
5001-5200	11.1	3.2
5201-5400	0	3.2
5401-5600	0	3.2
5601-5800	0	3.2
5801-6000	7.4	0
6001-6200	3.7	6.5
6201-6400	7.4	3.2
6601-6800	3.7	9.7
6801-7000	3.7	12.9
7001-7200	0	9.7
7201-7400	0	6.5
7401-7600	0	6.5
7601-7800	0	3.2
7801-8000	0	29
N	27	31

With respect to age and work experience no big differences are observed between the two groups of teachers (see Table 13 in the Appendix). Other obvious candidates for an explanation for this huge wage difference are differences in workload and productivity. In the questionnaire the teachers had to indicate the average time they spent on different activities in their job in a normal week of work. They were also asked about their employment status (in per cent of a full time position). Using this information the time spent on different activities was adjusted to a 100% employment equivalent. As the different activities listed (see Table 3) also included "other activities" the sum of the amounts of time spent on all

CHF.

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activities gives the average total hours of work in a normal week of work.[11] As reported in Table 2 the average workload is similar in both types of schools and not significantly different from each other.[12]

Table 2: Workload (total hours worked in full time employment)

Variable	Average hours worked per week	(s.e. of the mean)	N
Waldorf	54.4	(2.8)	15
Public	57.6	(2.8)	27

If we look at the distributions of working hours over the different activities we do not see big differences. It should be noted though that Waldorf teachers indicate to spent significantly less time giving classes and more time preparing classes. This can be interpreted as preferable working conditions but the difference is not large enough to convincingly explain the huge wage gap.

What about productivity? It is very difficult to measure teacher performance. Increases in student achievement might be an acceptable measure but there is no student achievement data for the schools in my sample. However, I collected rather detailed information on teacher education. Table 4 reports the shares of teachers in each type of school who hold a University degree, a degree from a Pädagogische Hochschule (Pedagogical College), which is the usual institution in Switzerland to educate primary school teachers, a degree from other tertiary education institutes or no tertiary education degree. Teachers who teach in public high schools usually have to hold a University degree plus an extra diploma for pedagogy (which can be obtained within a year of extra study). It can therefore be assumed that teachers who manage to obtain a University degree would also have been able to obtain a degree from a Pädagogische Hochschule. Other tertiary degrees may be comparable to such a degree but the category is too broad to be sure. If we accept that a University degree (which takes on average 1 or 2 years longer to obtain) is a higher education level than a

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[11]In the Waldorf schools many teachers did not indicate their percentage. The reason is probably that they simply did not know. Unfortunately, this reduces the number of observations from Waldorf schools to 16. One further observation had to be excluded from the Waldorf teachers because the teacher indicated a percentage of 8% and long (voluntary) working hours. Adjusting then to total hours of a full position equivalent results in more than 300 hours of work per week.

[12]The total hours reported seem very high. The reason may be that teacher overstated the time spent on some activities and this was multiplied by one over the percentage of their position which was in many cases lower than 50%. The precision of the figures is therefore probably not very high but this should equally affect the numbers for both groups.

Table 3: Time spent on different tasks in an average week of work (errors of the mean)

Activity	Waldorf	Public
giving classes	22.2 (0.7)	26.8 (0.8)
preparing classes	15 (1.8)	11.7 (1.1)
correcting exams	4 (1.1)	3.3 (0.6)
teacher reunions	4 (1.1)	3.3 (0.6)
exchange with other teachers	2.2 (0.4)	3 (0.5)
exchange with principal	0.7 (0.2)	1 (0.2)
talks to parents	1.2 (0.3)	1.6 (0.3)
talks to students	1.4 (0.2)	1.7 (0.3)
recess surveillance	1.1 (0.3)	1 (0.2)
other duties	3.3 (1.4)	4.9 (1.2)
N	14-15	26-27

degree from a Pädagogische Hochschule we see that most Waldorf teachers are at least as well educated as public primary school teachers.

Table 4: Highest academic degree, column percentages

Highest academic degree	Waldorf	Public
University	35.7	9.7
Pädagogische Hochschule (Pedagogical College)	28.6	61.3
Other tertiary	21.4	16.1
No tertiary	14.3	12.9
N	28	31

When directly asked whether they could also have applied to a public school with their qualification 17 (out of 28) Waldorf teachers answer positively and even the remaining 11 have education levels as high as the 17. It is likely that some of them only lack the one year of additional pedagogical training after a University degree to formally qualify for a job in a public high school. Instead most Waldorf teacher go through a Rudolph Steiner pedagogy seminar which also takes at least one year. When asked about the final mark of their highest degree (Table 5) no difference is observed between the two groups. This also holds when the marks for each type of education level are compared separately.

Given these findings, it is fair to say that most Waldorf teachers have had the chance and

Table 5: Average final mark, 1 (worst)-6 (best)

Variable	Coefficient	(Std. Err.)	N
Waldorf	5.14	(0.08)	19
Public	5.08	(0.08)	21

ability to choose to work in a primary school. The differences in qualification even indicate that they are on average better educated and have spent more time in tertiary education. The questionnaire also contained a question on whether they had ever considered applying to a public school and an open question on the reasons. 13 teachers answer negatively and 9 out of them name the Waldorf pedagogy as the reason. 10 answer positively and 5 of them state to have worked in a public school before joining the Waldorf school.

So, why do these teachers chose to work at Waldorf schools? In the questionnaire they had to rank 6 hypothetical reasons according to the importance they had in their choice of school. The median ranks of the reasons are presented in Table 6. For public school teachers the reasons with the greatest importance are school location and the composition of the student body, a criterion also discussed in the literature on teacher supply (Dolton 2006). For the Waldorf teachers the reasons with the highest importance are pedagogical profile and organisational form of the school. The student body is different with respect to the age range of children attending the different types of schools. Primary school in the Kanton of Zurich goes from grade 1 to 6 whereas most Waldorf schools go from grade 1 to 10. As youth is usually expected to be most problematic (at least for teachers) regarding classroom discipline and social behaviour at high school age rather than at primary school age this difference should not be an advantage for Waldorf schools in terms of more pleasant working conditions.

What about identification? Table 7 shows that Waldorf teachers show a higher degree of identification with their school, the school's pedagogic profile and their colleagues.

The questionnaire also contained a section in which agreement with statements about working conditions had to be stated.[13] Table 8 reports the average agreement to 5 of these statements which are related to job satisfaction.[14] No difference with respect to agreement to the general statement "Working conditions in my school are pleasant" is observed. However, Waldorf teachers state to be worse paid according to their qualification, state to have more

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[13]This part of the questionnaire was based on a questionnaire section from Hughes (2006).

[14]Some of the other statements in the questionnaire, like "Teachers are very critical to each other" for example cannot be interpreted well in terms of higher or lower satisfaction with working conditions.

Table 6: Median rank for hypothetical reasons for why school chosen (1 "most important"-6 "least important")

Activity	Waldorf	Public
location of school	4	1.5
lack of alternatives	5	5
pedagogical profile	1	3
organisational form	2	4
salary	5	5
student body	3	2.5
N	25	30

Table 7: How strongly do you identify with... (scale: 1"very weakly" to 7 "very strongly")

Identification with...	Waldorf	Public
your school.	6.1 (0.1)	4.9 (0.2)
the pedagogic profile	6.4 (0.1)	5 (0.2)
your colleagues	5.7 (0.2)	4.7 (0.2)
the teaching profession	6 (0.2)	5.7 (0.3)
N	28	30-31

freedom to make their own decisions, get more recognition for their engagement in teaching and also agree more strongly to the statement that their school building is a pleasant place. Freedom to make own decisions and recognition of engagement are related to the different organisational structure (higher parents involvement) and the different pedagogy, which gives teachers a high degree of autonomy in the structure of their curriculum and choice of teaching methods. Even the school building architecture may be related to the antroprosophic theory of Rudolph Steiner (there is indeed an antroprosophic architecture).[15]

Now, we turn to the question whether the different organisational form and the different pedagogy in Waldorf schools attract teachers with different social preferences. Why could this be the case?

As described in section 1 Waldorf schools are managed by the teachers and school finances depend on their acceptance of low wages and the parents' willingness to pay higher tuition than others if they can afford. This organisation is based on a high degree of cooperation

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[15]See Steiner (1998) and Richter (1995) for introductions to Waldorf pedagogy.

Table 8: Agreement with statements on working conditions (scale 1"strongly disagree" to 7 "strongly agree")

Statement	Waldorf	Public
Working conditions in my school are pleasant.	5.4 (0.5)	5.1 (0.4)
I am well paid according to my qualification.	2.4 (0.3)	4.6 (0.2)
I do have the freedom to make own decisions.	6.5 (0.1)	4.6 (0.2)
I get full recognition for my engagement in teaching.	5.2 (0.4)	4.1 (0.4)
The school building is a pleasant place.	6.3 (0.3)	5.4 (0.3)
N	28	31

of the teachers among themselves and between teachers and parents. The first hypothesis is therefore, that Waldorf schools attract more cooperative (reciprocal or altruistic) teachers than public primary schools. The second hypothesis is that, due to one particular aspect of Waldorf pedagogy, they attract more inequality averse teachers than public schools. In Waldorf schools the students are not marked. Marking of achievement is even seen as inhumane (Kneucker and Richter 1995, p.15). A more holistic development is the goal. More teachers who dislike inequality among others should therefore be attracted by this pedagogy.

Preferences for cooperation or conditional cooperation (reciprocity) and inequality aversion have been observed in many laboratory experiments.[16]. A very simple game to study cooperation is a sequential prisenors dilemma (see e.g. Sefton (2001) or Kosfeld et al. (2007)). The decision of the second mover, knowing the decision of the first mover, reveals whether he is a conditional cooperator (in case he cooperates if the first mover cooperated), an altruist (in case of cooperation no matter what the first mover did), an egoist (in case of defection regardless of the first mover's decision) or anti-reciprocal (in case of cooperation if the first mover defected and defection if the first mover cooperated) for a given pay-off matrix. In the questionnaire the teachers had to make decisions for all possible scenarios (as first movers and as second movers in case of defection and cooperation of the first mover) for the prisenor's dilemma pay-off matrix presented in Table 9.

After the survey four questionnaires were randomly selected the roles of first and second mover randomly assigned and the teachers paid out according to their decisions.[17] The teachers were informed about this procedure. Table 10 reports the shares of the different

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[16]For a review of the literature on social preferences see e.g. Meier (2007).

[17]Teachers were identified by a number on a slip which was attached to the questionnaire which they took off and kept.

Table 9: Pay-off matrix of the sequential PD game (in CHF)

	The other player chooses A	The other player chooses B
You choose A	300, 300	50, 500
You choose B	500, 50	100, 100

behavioural types. The Hypothesis that Waldorf schools attract more reciprocal or altruistic teachers can not be confirmed. In fact more public school teachers show pro-social preferences although standard errors are very large.

Table 10: Shares of players with different second mover behaviour (std.err.)

Statement	Waldorf	Public
Share of selfish players (in per cent)	28 (5.5)	18 (8)
Share of reciprocal players.	52 (3.4)	53 (10.4)
Share of altruists.	8 (5.3)	21 (6.8)
Share of anti-reciprocal players.	12 (7.9)	7 (5.3)
N	25	28

In the second experiment, designed to measure aversion towards inequality among others, the teachers had to choose one out of two distributions of pay-offs to three individuals in eight different scenarios (Table 11). Again four questionnaires were randomly chosen after the survey and for each a scenario chosen. The pay-offs were paid out to randomly drawn students from the database of the University of Zurich. The teachers knew about this procedure. I designed the distribution game myself. Similar games were used by Engelmann and Strobel (2004) with the difference that one of the recipients in the distribution was the subject making the decision herself. In the paper they test predictions from Fehr and Schmidt's (1999) and from Bolton and Ockenfels' (2000) theories of inequality aversion, both of which address inequality with respect to oneself. In all scenarios distribution A stays the same. Distribution B is always more efficient in the sense that the sum of pay-offs is higher. In distributions 1-3 the range (the difference between the maximum and minimum payoff) is kept constant and the efficiency difference towards A is increased by increasing the middle pay-off. The same is true for distributions 4-6 with the difference that the lowest income is now lower in B than in A (which would lead Rawlsian welfare maximizers to choose A). Distributions 4, 7 and 8 increase efficiency by increasing the highest payoff and thereby the range which is the measure of inequality used here.

Table 11: Distribution Game: Choice between distribution A and B in different scenarios (pay-offs to students in CHF)

Scenario	1		2		3		4		5		6		7		8	
Distribution	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Student 1	80	120	80	120	80	120	80	110	80	110	80	110	80	120	80	130
Student 2	70	40	70	50	70	60	70	60	70	70	70	80	70	60	70	60
Student 3	30	30	30	30	30	30	30	20	30	20	30	20	30	20	30	20

The results (Table 12) show that a high number of teachers from both groups chooses the inefficient but more equitable distribution A over B in all scenarios. The shares go down with increasing relative inefficiency. Across all scenarios (except for the eighth) the share of public school teachers choosing the more equitable distribution is higher than of Waldorf school teachers, although the differences are not significant due to the large standard errors. The hypothesis that Waldorf schools attract more inequality averse teachers can therefore not be confirmed.

Table 12: Share of teachers choosing distribution A, which is always the more equitable but also inefficient one, in per cent (std.err.)

Scenario	1	2	3	4	5	6	7	8	N
Waldorf	84 (7.3)	68 (7.1)	64 (4.7)	76 (6.1)	68 (2.3)	68 (8.5)	80 (6.3)	76 (6.1)	25
Public	92.3 (3.7)	84.6 (7)	73.1 (7.1)	92.3 (7.7)	73.1 (7.1)	73.1 (7.1)	84.6 (8.6)	73.1 (6.3)	26

4 Conclusion

A small scale survey of teachers in Waldorf and public primary schools in the area of Zurich reveals huge wage differences between the two groups of teachers, even though Waldorf teachers are on average as well educated as public school teachers have the same age and work experience and work the same hours doing almost exactly the same work. In this paper I tried to answer why that might be the case. The survey reveals that Waldorf teachers had different reasons for their school choice, namely pedagogical profile and school organisation (i.e. the school mission), and show higher identification with their school its profile and their colleagues. In addition they show higher satisfaction with some working conditions. I therefore conclude that the mission of a school can serve as a very strong incentive in the labour market for teachers and may explain a big portion of the observed subsidies for tuition

of religious schools in the US. The consequences of this finding for models of school choice and especially for simulations of reforms depend a lot on the distribution of motivation for certain missions. If there are only few motivated teachers (enrolment rates in Waldorf and religious schools are low) average teacher motivation in these schools and with it the implicit tuition subsidy would drop sharply with a sizeable expansion of enrolment in these schools by the introduction of vouchers for private schools. In this case the estimated enrolment shares for these schools from simulations assuming a fixed subsidy rate would then be too high.

Even though some differences in school organisation and pedagogical practice make hypotheses of sorting along social preferences plausible no significant differences between the two groups of teachers are observed in this respect.

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Appendix

Survey procedure

In a first step I contacted Waldorf schools in the greater area of Zurich and public primary schools in the city of Zurich. The farest Waldorf school from Zurich is located in St.Gallen which is one hour away by train. Five Waldorf and six schools agreed to participate. Many schools said they did not want to participate because they had already participated in many other surveys. I then mailed the number of questionnaires they indicated to the participating schools. The questionnaires came with stamped return envelopes. The total return rate of the sent questionnaires was rather low (about 50%) but varied across schools probably due to the differnt importance given to the survey by the person who received the package of questionnaires and the precision of the indicated number of needed questionnaires. I do not see any systematic differences though with respect to non-response or participation between the two types of schools which could bias my results.

The questionnaire can be obtained from the author.

Additional data

Table 13: Demographics and work experience

Activity	Waldorf	Public
Age (in years)	48.4	46.1
Number of children	2.1	1.1
Share of female teachers (in %)	61	84
Seniority (in same school, in years)	8.9	6.7
Work experience as a teacher (in years)	15.7	16.1
N	27-28	29-31