Learning to love cosmopolitanism? Testing the socialization effect of educational field of study on cosmopolitan orientations in the Netherlands

Sander Kunst

University of Amsterdam

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Abstract

Across Western Europe, those with higher education are consistently found to be more cosmopolitan than those with less education. One mechanism through which education is argued to affect cosmopolitanism is by socializing students into a set of cosmopolitan values that continue to influence their thinking long after they have left the education system. However, the relevance of the socialization model for explaining educational differences in cosmopolitanism is disputed, since recent scholarship provides conflicting results on whether cosmopolitan orientations actually change as students progress through education. This paper puts forward the argument that in order to test whether socialization takes place, it is useful to take into account field of study. Specifically, fields of study are assumed to differ in emphasizing ‘cosmopolitan’ values, such as egalitarianism and tolerance. Analyzing eleven waves of panel data collected in the Netherlands (2007 – 2019), this paper demonstrates that although there are descriptive differences between fields of study in cosmopolitan orientations, there is no evidence that these disparities are driven by different socialization experiences. Consequently, the results challenge the importance of the socialization model to understand the educational divide in cosmopolitanism.

Keywords: cosmopolitanism, education, field of study, socialization

Introduction

The consequences of globalization have brought debates about cosmopolitanism at the center stage of political conflict across Western Europe (De Wilde et al., 2019; Hooghe and Marks, 2018). Cosmopolitanism refers to the philosophy that all people are part of a community that transcends the nation-state and should be tolerant of each other regardless of ethnicity, religion or national origin (Vertovec and Cohen, 2002). While those with cosmopolitan orientations tolerate immigration, multiculturalism and support the European Union (EU), those without are wary of foreign influences and attach great value to the nation-state and its customs and traditions (De Wilde et al., 2019; Teney et al., 2014). One reason for the deep conflict over cosmopolitanism is its overlap with an educational divide (Bovens and Wille, 2017; Hooghe and Marks, 2018). It is well-established that higher educated are more likely to report cosmopolitan orientations, i.e. pro-EU (Hakhverdian et al., 2013) and pro-immigration (Hainmueller and Hopkins, 2014) attitudes compared to lower educated.

Although the association between education and cosmopolitanism is undisputed, the specific aspects of schooling that drive this relationship remain unclear. One of the most influential explanations for educational differences in socio-political orientations is socialization theory (Hyman and Wright, 1979; Selznick and Steinberg, 1969; Vogt, 1997). The socialization model of education would argue that education *socializes* students into a cosmopolitan ‘outlook’. Specifically, education is believed to instill a set of (cosmopolitan) norms and values that continues to influence the thinking of students long after they have left the education system (Phelan et al., 1995; Stubager, 2008; Thomsen and Olsen, 2017). While in education, students are exposed to the dominant values of a liberal democratic society, such as tolerance, equal treatment and pluralism (Coenders and Scheepers, 2003; Thomsen and Olsen, 2017). In addition, a recent goal of national and European education policies is to emphasize a post-national model of citizenship that aims to “bind Europeans in a broad but

common framework of values and in the political project of promoting and protecting respect for democracy, human rights, equality, and other universal values” (Keating, 2009: 146). In sum, it is expected that longer exposure and internationalization of these principles during students’ ‘impressionable years’ results in *durable* cosmopolitan orientations.

However, the importance of the socialization model of education for explaining cosmopolitan orientations is disputed, since recent scholarship provides conflicting results on whether cosmopolitan orientations actually *change* as students progress through education. While some (quasi-experimental) studies find a clear effect of staying longer in education for fostering cosmopolitan orientations (e.g. Cavaille and Marshall, 2019; d’Hombres and Nunziata, 2016; Margaryan et al., 2019), others find no or inconclusive evidence (e.g. Finseraas et al., 2018; Kunst et al., 2020; Lancee and Sarrasin, 2015; Weber, 2020). Consequently, it is possible that the strong association between education and cosmopolitanism is confounded by other factors, such as family socio-economic status, the political socialization at home and individual differences in personality traits and cognitive skills (Kam and Palmer, 2008; Persson, 2015). Therefore, it is still an open question whether students’ cosmopolitan orientations actually change as a consequence of attending education.

This paper aims to contribute to the ongoing debate to what extent education has a direct influence on fostering cosmopolitan orientations. Due to the complex nature of the relationship between education and cosmopolitanism, it is crucial to find ways to isolate the various mechanisms through which education could impact cosmopolitanism. Therefore, in order to tap more directly into the hypothesized socialization effects of education, I propose the use of educational field of study. There is a long tradition in the literature that shows people’s socio-political orientations differ between fields of study (Guimond et al., 1989; Guimond and Palmer, 1990, 1996; Hastie, 2007). This has been attributed to the fact that fields train students for different types of occupations, i.e. while some fields prepare students for more socially

oriented professions, others prepare students for jobs in the technical or service sector. As such, according to the existing literature, socialization could occur when the knowledge and skills being taught overlap with social and political values (Stubager, 2008; Surridge, 2016; Van de Werfhorst and De Graaf, 2004).

Consequently, due to their different foci, fields of study are assumed to differ in emphasizing ‘cosmopolitan’ values, such as egalitarianism and tolerance for diversity (Stubager, 2008; Van de Werfhorst and De Graaf, 2004; Van de Werfhorst and Kraaykamp, 2001). The argument goes that within fields that focus on ‘human understanding’, students are taught communicative competencies and social skills that enable them to broaden their horizon, and to become aware of the motives and point-of-view of others (Van de Werfhorst and De Graaf, 2004; Van de Werfhorst and Kraaykamp, 2001). It is then assumed that humans become more understanding and appreciative of each other if they grow familiar with the reasons for people’s motivations for their actions. As such, people educated in ‘human-centered’ fields of study, i.e. care, education and the social studies, have the ability to imagine the needs and experiences of other people, which is vital in order to empathize with- and tolerate those who have a different way of life. Therefore, it is expected that students in ‘human-centered’ fields of study underscore ‘cosmopolitan’ values such as egalitarianism and tolerance to a higher extent (Stubager, 2008; Surridge, 2016; Van de Werfhorst and De Graaf, 2004).

To test the field socialization hypothesis for cosmopolitan orientations, I use 11 waves of the Dutch Longitudinal Internet panel for the Social Sciences (LISS, 2007 – 2019). Studying the consequences of fields of study for socio-political orientations is often limited to tertiary education (Chatard and Selimbegovic, 2007; Hastie, 2007). But in the Dutch education system, specialization into different fields of study takes place at basically all education levels, which allows to examine a larger part of the population than just those in the highest levels of education. I proceed in two steps. First, I apply multilevel (random-effects) models to estimate

whether there are *durable* cross-sectional differences between fields of study in cosmopolitan orientations among the Dutch population. To tap into cosmopolitan orientations, the paper uses a scale combining issues that are central to the current debate over cosmopolitanism, notably support for European unification and immigration (De Wilde et al., 2019; Hooghe and Marks, 2018). Second, due to the fact that respondents as young as 15 are participating in the panel, I can capture a substantial part of students' educational trajectory. Most importantly, it allows for an examination of the question whether students' cosmopolitan orientations change as they progress through education. Therefore, I test with random-effects models whether the gap between fields of study in cosmopolitan orientations widens over time while in education.

Summarizing the most important results, I find cross-sectional evidence that a background in a 'human-centered' fields of study is significantly associated with stronger cosmopolitan orientations. However, once taking a longitudinal approach, it becomes clear that already at the start of the different specializations, students in human-centered fields of study are more cosmopolitan than their peers in other fields of study. In addition, the gap in cosmopolitan orientations between fields of study remains very much stable over time while in education. Together, this provides an indication that strong selection effects could be at play here. This paper concludes that although there are descriptive differences between fields of study, it is unlikely that field socialization is the main consequences of these existing disparities. Consequently, taking into account the broader discussion about the influences of education, this paper challenges the importance of the socialization model for understanding the current educational divide over cosmopolitanism.

Theoretical framework and hypotheses

Education and cosmopolitan orientations

It is well-established that there exists a strong association between education and cosmopolitanism (De Wilde et al., 2019; Teney et al., 2014). Cosmopolitanism refers to the belief that all people are part of a community that transcends the nation-state and should be tolerant of each other regardless of ethnicity, religion or national origin (Vertovec and Cohen, 2002). Although cosmopolitanism is commonly associated with having a global scope, this does not necessarily have to be the case. In Europe, European unification is considered to be an important benchmark for cosmopolitanism (Beck and Grande, 2007; Pichler, 2008). By supporting European unification, people acknowledge the existence of a larger European community and consent to cultural and ethnic diversity by fostering closer ties with other peoples in Europe (Hobolt et al., 2011: 374). Consequently, scholars agree that the difference in cosmopolitan orientations between people in Western Europe is primarily reflected in the issues of European unification and immigration (De Wilde et al., 2019; Hooghe and Marks, 2018; Van der Brug and Van Spanje, 2009).

Considering the strong association between education and cosmopolitanism, there is an ongoing scholarly debate about the question if this association can be attributed directly to education itself, or whether it reflects the self-selection of people into different educational trajectories that match pre-existing values, beliefs and attitudes (Cavaille and Marshall, 2019; Kunst et al., 2020; Lancee and Sarrasin, 2015). The socialization argument posits that schooling has a *direct* influence on students' cosmopolitan orientations by socializing students into a cosmopolitan worldview. Most education systems in Western European countries are based on liberal norms and values such as individual freedom, open-mindedness and tolerance of non-conformity (Coenders and Scheepers, 2003; Phelan et al., 1995; Thomsen and Olsen, 2017). Furthermore, it is the outspoken aim of many current national and European education policies

to promote a European, post-national model of citizenship through which people across Europe are *united* by a common framework of universal shared values, such as respect for human rights, democracy and multiculturalism (Keating, 2009; Rohde-Liebenau, 2020). Consequently, it is expected that longer exposure to- and internalization of these ‘cosmopolitan’ values while in education will lead to stronger cosmopolitan orientations.

According to the socialization model, the changes that education brings about are durable (Hyman and Wright, 1979; Thomsen and Olsen, 2017). The lasting impact of education arises, as it is part of people’s broader socialization experience in life. Research indicates that political attitudes tend to develop during people’s ‘impressionable years’, between the ages of 13 and 25, and to remain fairly stable after this period (Kiley and Vaisey, 2019; Neundorff and Smets, 2017). As most people spend this phase of their life in school, education is presumed to have a profound and lasting influence on the contents of students’ socio-political orientations.

However, recent studies have questioned the importance of the socialization model for understanding educational differences in cosmopolitan orientations. Quasi-experimental studies show that once controlling for unobserved factors, such as family background and political socialization in the home environment, the relationship between education and cosmopolitan orientations disappears (Finseraas et al., 2018; Kunst et al., 2020; Lancee and Sarrasin, 2015). These studies argue that education does not change the socio-political orientations of students, but suggests that people with cosmopolitan orientations are more likely to select into particular educational trajectories. To illustrate, it is well-established that children from higher educated parents are also more likely to end up at higher education levels themselves (Persson, 2012). Moreover, among other factors, there is evidence for intergenerational transmission of cosmopolitan orientations. As higher educated are more likely to be cosmopolitan, it is likely that also their off-spring is exposed to these orientations. For

example, European identity (Quintelier et al., 2014), Euroscepticism (Fox et al., 2019) and anti-immigrant sentiments (Meeusen, 2014) have been found to be transmitted from parent to child.

Field of study and cosmopolitan orientations

These contrasting perspectives indicate that whether students are socialized into cosmopolitan orientations is very much a topic of debate. To address this caveat, I put forward the argument that in order to test the socialization model of education for cosmopolitanism it is worthwhile to take into account field of study. There is a long tradition in the literature that shows how graduates from different fields of study also differ substantially in their socio-political orientations, e.g. left-right placement (Chatard and Selimbegovic, 2007; Guimond et al., 1989; Guimond and Palmer, 1990, 1996; Hastie, 2007; Van de Werfhorst and Kraaykamp, 2001). This has been attributed to the fact that fields of study train students for different types of occupations (Van de Werfhorst and De Graaf, 2004; Van de Werfhorst and Kraaykamp, 2001). While some fields prepare students for more socially oriented professions, others prepare students for jobs in the technical or service sector. As such, fields of study have curricula that teach different types of knowledge and skills (Van de Werfhorst and Kraaykamp, 2001). Following this argument, it is suggested socio-political socialization may take place within fields of study when the contents of the curriculum overlap with social and political values (Hainmueller and Hiscox, 2006; Stubager, 2008; Van de Werfhorst and De Graaf, 2004).

The theory that due to the focus on different types of resources, fields of study also differ in the social and political values that are emphasized is useful, as it allows to tap into the possible socialization role of education for cosmopolitan orientations. It gives the opportunity to discriminate between fields of study in emphasizing the values important for developing a cosmopolitan worldview. Specifically, previous work has established that students from fields that focus on preparing people for occupations with an ‘interpersonal work logic’ are more

likely to ascribe to important values underpinning cosmopolitanism, namely egalitarianism and tolerance for diversity (Stubager, 2008; Surridge, 2016; Van de Werfhorst and De Graaf, 2004; Van de Werfhorst and Kraaykamp, 2001). The argument goes that within these ‘human-centered’ fields, such as care, education and social studies, people are socialized into egalitarian and tolerant thinking, as there is a strong emphasis on the ability for students to imagine and/or understand the needs and experiences of other people.

The central element is therefore that these fields address communicative skills, “which makes students aware of other people's standpoints and motives, thereby broadening students' horizons and socializing them to value and accept divergent standpoints” (Van de Werfhorst and Kraaykamp, 2001: 313). Consequently, the authors in this tradition expect that due to its focus on human understanding and communicative competencies, fields concerning the welfare and arguments of other people feature a stronger presence of values such as egalitarianism and tolerance for people who have a different way of life (Stubager, 2008; Surridge, 2016; Van de Werfhorst and De Graaf, 2004). This is in contrast to other fields, such as STEM or economics. In these fields the focus is on manipulating objects or to promote one’s own self-interest, not on furthering human understanding (Pascarella and Terenzini, 1991: 310–313).

The consequences of ‘human-centered’ fields of study for fostering egalitarian and tolerant values has found broad cross-sectional support in the literature. For example, graduates from ‘human-centered’ fields of study are found to be more likely to be left-wing (Van de Werfhorst and De Graaf, 2004; Van de Werfhorst and Kraaykamp, 2001), more accepting of immigrants (Stubager, 2008) and more likely to vote for ‘cosmopolitan’ social-liberal and Green parties (Oesch and Rennwald, 2010). Taken together, as ‘human-centered’ fields of study are likely to feature a stronger presence of egalitarian and tolerant values, the exposure to- and internalization of these values is expected to lead to *durable* differences in cosmopolitan

orientations between graduates from ‘human-centered’ and other fields of study. This leads to the first hypothesis:

H1: People with an educational background in a ‘human-centered’ field of study are more likely to report cosmopolitan orientations than people with a specialization in other fields.

A critical aspect of the socialization model is that it assumes that these differences in cosmopolitan orientations between fields of study crystallize as students move through education. In this instance, it would entail that as students move through a ‘human-centered’ field of study their orientations should grow faster towards cosmopolitanism than do students in other fields of study. It is unlikely, however, that students from different fields of study are similar in cosmopolitan orientations at the start of each specialization. There exists a large literature which suggests people are prone to self-select into fields of study that match pre-existing values, beliefs and attitudes (Chatard and Selimbegovic, 2007; Hastie, 2007). Therefore it is probable that students with stronger cosmopolitan orientations are already more likely to attend ‘human-centered’ fields of study. Although there might exist initial differences between fields of study, the socialization model would argue that these disparities are further exacerbated over the course of study due to the different value emphasis. Therefore, if socialization towards cosmopolitan orientations is taking place, we should observe a change towards cosmopolitanism over time when attending ‘human-centered’ fields of study, and to a larger extent than in other fields of study. This leads to the second hypothesis:

H2: The gap in cosmopolitan orientations between students attending ‘human-centered’ fields and other fields of study widens over time.

Data, methods and operationalization

Data

To test the hypotheses, I use the 11 available waves of the LISS (Longitudinal Internet Studies for the Social sciences) panel administered between 2007 and 2019 by CentERdata (Tilburg University, The Netherlands). The LISS panel is a representative sample of Dutch individuals who participate in monthly Internet surveys. The panel is based on a true probability sample of 5000 households drawn from the population register of Statistics Netherlands (Scherpenzeel, 2011). A longitudinal survey is fielded in the panel every year, covering a large variety of domains including work, education, income, housing, time use, political views, values and personality. Extra attention is given to boosting participation in the panel, including providing a computer and internet connection if necessary and a 10 Euro payment as a reward.

According to the LISS administrators, the response rate in 2019 was on average 80%, while the respondent attrition is on average 12% every wave. The most recent assessment of the representativeness of the LISS panel compared to the Dutch population shows that certain demographic groups, for example younger adults, minorities, single-person households and those with less education are slightly underrepresented (LISS, 2015). However, Scherpenzeel and Bethlehem (2011) find that the composition of the panel is mirroring the Dutch population equally as well as other national face-to-face surveys and closer than non-probability online surveys. I combine data from the ‘Politics and Values’ surveys with the ‘Work and Schooling’ questionnaires to obtain a complete overview of the educational attainment, field of study and political attitudes of respondents. I drop respondents that do not give a consistent answer about their sex (N= 141), year of birth (N= 38) or immigration background (N = 15).

Empirical strategy

I test the outlined hypotheses using two separate analyses. For all analyses, cosmopolitan orientations is the main outcome of interest. Scholars agree that current debate over cosmopolitanism primarily revolves around the issues of immigration and European unification (De Wilde et al., 2019; Hooghe and Marks, 2018; Kriesi et al., 2008). This is also very much the case in the Netherlands (De Vries, 2018). I measure cosmopolitan orientations on the basis of a composite measure of seven questions about the EU, immigrants, asylum seekers, and national outgroups more generally. The usefulness of such a scale has been demonstrated in previous studies (De Vries, 2018; Maxwell, 2020). For an overview of the included items see Appendix A. The combined scale has a Cronbach's alpha of 0.81 across all eleven waves, indicating a reliable measure. Moreover, principle factor analyses retains one factor with an Eigenvalue higher than 1. The scale has been recoded to run from one to five, with a higher value indicating stronger cosmopolitan orientations.

For both analyses I use multilevel (random-effects) models with responses in different waves (Level 1) nested in respondents (Level 2). To test the first hypothesis, the sample is restricted to respondents between 25 and 70. After 25, respondents are less likely to change in their education. In addition, after 70, non-random panel attrition becomes an issues (Vossen, 2009). In total for this analysis there are 29,682 observations from 7,402 unique respondents. The following equation is estimated:

$$\begin{aligned} Y_{ij} = & \beta_0 + \beta_{1.2-1.3} \text{field of study}_{ij} + \beta_{2.2-2.6} \text{education}_{ij} + \beta_{3.2-3.9} \text{occupation}_{ij} \\ & + \beta_{4.2-4.5} \text{urban residency}_{ij} + \beta_5 \text{female}_j + \beta_6 \text{year of birth}_j \\ & + \beta_{7.2-7.6} \text{immigration background}_j + \beta_{8.2-8.11} \text{wave}_{ij} + u_{0j} \\ & + \varepsilon_{ij} \end{aligned} \quad (1)$$

Y_{ij} are the cosmopolitan orientations for observation i of respondent j . Following Stubager (2008), field of study is a variable differentiating between three broad fields that have distinct foci. First, the Care, Teaching and Social Studies (CTSS) are the ‘human-centered’ fields of study that focus on the welfare and arguments of other people. Second, the Business, Law and Services (BLS) are fields of study that are focused on further profit maximization or own self-interest. Finally, the Science, Technology, Engineering and Mathematics (STEM) category contains fields of study that put an emphasis on the manipulation of objects. See Table 1 for an overview of the included fields of study in each category.

Table 1. Categorization fields of study

Care, Education, and Social Studies (CTSS)	Education and Teacher training
	Arts and Humanities
	Social and Behavioral studies
	Health and Welfare
Business, Law, and Services (BLS)	Business and Law
	Services
Science, Technology, Engineering, and Mathematics (STEM)	Engineering, Manufacturing and
	Construction
	Agriculture
	Science

Note: Classification based on Stubager (2008) and ISCED-F (2013).

Finally, I control for sex, year of birth, immigration background, education level, occupation, urban residency and time. Sex is a dummy variable with male (0) and female (1). Immigration background consists of six categories, namely Dutch background (1), first generation, western (2), first generation, non-western (3), second generation, western (4), second-generation, non-western (5) and unknown¹ (6). Level of highest completed education is measured using six answering categories, (1) primary school (PO), (2) intermediate secondary education (VMBO), (3) higher secondary education (HAVO/VWO), (4) intermediate vocational education (MBO), (5) higher vocational education (HBO) or (6) university education (WO). Occupation is divided into nine categories: (1) higher academic or independent profession, (2) higher supervisory profession, (3) intermediate academic or independent profession, (4) intermediate supervisory profession, (5) other mental work, (6) skilled and supervisory manual work, (7) semi-skilled manual work, (8) unskilled and trained manual work and (9) agrarian profession. For urban residency I use a variable with five answering option; (1) extremely urban, (2) very urban, (3) moderately urban, (4) slightly urban and (5) not urban. To control for time trends, I include survey-wave dummies.

Next, I test whether these differences crystallize as a consequence of field of study. An issue with the LISS panel is that people's field of study refers to the field they have *completed* a degree in. Therefore, for students still in school, only after they have completed a specific degree is it clear in which field of study this degree was obtained in. Related to this issue is that it is impossible to know when students have started with their specialization. I deal with these issues as follows. First, due to the panel structure of the data, I do know when people complete

¹ Since LISS only started administering respondents' immigration background as of wave 4, this would exclude people that only participated in previous waves. Therefore we include a separate option 'unknown'.

a level of education. I make use of this knowledge and calculate the years before completing the specific degree. I only select respondents that completed a degree before the age of 30, as to only include ‘impressionable’ adolescents in the analytical sample. If a respondent has multiple ‘steps’ in their education, I select the most recent one. Second, most educational programs in the Netherlands take on average 4 to 5 years (See for detailed description of Dutch education system Eurydice, 2007). Therefore, I set the ‘starting point’ *five* years prior to completing a degree (i.e. $T-5 = 0$). This leaves a sample of 1820 observations from 638 respondents. I apply multilevel (random-effects) models to test whether (1) there are already differences between CTSS and the other fields of study in cosmopolitan orientations at the start of the different specializations and (2) to examine whether the gap in cosmopolitan orientations between CTSS and the other fields of study widens over the time as expected by the socialization model of education. The following equation is estimated,

$$Y_{ij} = \beta_0 + \beta_1 time_{ij} + \beta_2 field\ of\ study_j + \beta_3 time_{ij} \times field\ of\ study_j + \beta_4 \delta_{ij} \quad (2)$$

$$+ u_{0j} + u_1 time_{ij} + \varepsilon_{ij}$$

in this equation, $time_{ij}$ is the number of year of enrolled in the specific field of study. As explained above, this variable runs from zero to five. In addition, $field\ of\ study_j$ has been simplified to create a dichotomous variable differentiating between (1) CTSS and (2) BLS or STEM. This variable has been interacted with the variable for time to examine whether the gap between the two categories in cosmopolitan orientations widens over time. For this cross-level interaction, I follow standard practice and incorporate a random slope for time ($u_1 time_{ij}$) (Heisig and Schaeffer, 2019). Finally, δ_{ij} entails a vector of control variables, namely sex, year of birth, immigration background, highest *attended* level of education, urban residency and survey-wave dummies. Clustered robust standard errors are used.

Results

Lasting differences between fields of study in cosmopolitan orientations?

The first step is to examine whether there are differences between graduates from ‘human-centered’ and ‘other’ fields of study in cosmopolitan orientations. Based on socialization theory, it is expected that people with a background in a ‘human-centered’ field of study are more likely to report cosmopolitan orientations. The basic model includes controls for year of birth, sex, immigration background, highest completed level of education, urban residency and time. We do not immediately also include occupation, as this could potentially be a collider variable; (1) people’s field of study influences their choice of occupation, and at the same time, (2) people with particular social and political attitudes are more likely to select into certain occupations. Therefore, we include occupation in a second, separate model. However, the results do not substantively change for either outcome once included in the models. The results can be found in Figure 2. For the full results see Appendix C.

The results demonstrate the expected pattern for level of education: spending a shorter time in education is associated with weaker cosmopolitan orientations. However, this relationship is not linear. Especially university education stands out as being associated with far stronger cosmopolitan orientations. This is consistent with previous research (Bovens and Wille, 2017). Most importantly, controlling for a wide range of demographic background variables, it becomes clear that compared to people with a background in ‘human-centered’ CTSS fields, graduating in BLS or STEM is associated with significantly weaker cosmopolitan orientations. In sum, we find some tentative evidence of the socialization influence of ‘human-centered’ fields of study for fostering cosmopolitan orientations. Considering that education level is still strongly correlated with cosmopolitan orientations, other attributes of education, such as enhancing cognitive skills, strengthening the position on the labor market or the normative influences of the school environment, could also still be important here

Figure 1. Random-effects regression estimates for cosmopolitan orientations.²

Note: Bars indicate 95% confidence intervals. All models include controls for sex, year of birth, immigration background, urban residency and survey-wave fixed-effects.

Cosmopolitan orientations as a consequence of (field) socialization?

A critical aspect of the socialization model is that it argues that these observed differences in cosmopolitan orientations between fields of study crystallize as students move through education. Specifically, this means we should observe students *change* in their cosmopolitan orientations over time while attending education. I estimate random-effects models to examine how the gap in cosmopolitan orientations between CTSS and BLS/STEM fields develops over time while in education. The models are estimated for three different samples, namely (1) for all type of degrees, (2) post-secondary degrees (MBO, HBO, WO) and (3) for degrees in higher education (HBO, WO). The results can be found in Table 2.

² All graphs use the 538 scheme for Stata by Bischof (2017).

Table 2. Results random-effects models for cosmopolitan orientations

	(1)	(2)	(3)
	All degrees	Post-secondary	Higher education
Time	-0.01 (0.01)	-0.02 (0.02)	0.01 (0.02)
<i>CTSS (Ref.)</i>			
BLS/STEM	-0.26*** (0.07)	-0.30*** (0.09)	-0.27** (0.09)
BLS/STEM x Time	0.02 (0.01)	0.02 (0.02)	0.01 (0.02)
Control variables	Yes	Yes	Yes
Observations	1820	1249	1086
Respondents	638	386	321
Log Likelihood	-1216.07	-807.18	-652.04

Note: Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models include controls for sex, year of birth, immigration background, highest attended level of education, urban residency and survey-wave.

The results in Table 2 indicate that there is no significant time trend visible. Thus, for CTSS fields of study there is no shift towards cosmopolitanism between $T = 0$ and $T = 5$. Furthermore, mirroring the results found for the general adult Dutch population, at $T = 0$ students in BLS and STEM fields of study are significantly less cosmopolitan than students in CTSS fields. This demonstrates that already prior, or at the very beginning of each specialization, there is a considerable difference in cosmopolitan orientations between the two groups. This is the case for all three subsamples that are analyzed. Furthermore, based on the socialization model we would expect the gap between BLS/STEM and CTSS fields of study to

further widen over time. Therefore, based on these expectations, the interaction term should be negative and statistically significant. However, the interaction term does not reach conventional levels of statistical significance and is close to zero. In addition, the coefficient is positive, which would mean a small convergence between BLS/STEM and CTSS fields in cosmopolitan orientations is taking place rather than a divergence. The marginal effects graphs of all three analyses can be found in Figure 2.

Figure 2. Marginal effect of CTSS and BLS/STEM fields of study on cosmopolitan orientations by different type of degrees.

Note: Shaded areas indicate 95% confidence intervals. All models include controls for sex, year of birth, immigration background, highest attend level of education, urban residency and survey-wave.

I perform two sensitivity checks to test the robustness of the results. First, I change the time window to four years instead of five. However, this does not substantially change the results. Second, I use the original three categories – instead of two – field of study variable. Also in these analyses, we find the same patterns as described here (see Appendix D). Taken together, I conclude that (1) already prior to, or at the very beginning of the different specializations, students in CTSS fields are more cosmopolitan than their peers in BLS/STEM fields and (2) contrary to the expectations based on the socialization model, no divergence is taking place in cosmopolitan orientations between BLS/STEM and CTSS fields of study.

Conclusion and discussion

One of the most consisting findings within the literature is that education is strongly associated with cosmopolitanism (De Wilde et al., 2019; Hooghe and Marks, 2018; Kriesi et al., 2008). Considering the strong relationship between education and cosmopolitan orientations, there is an ongoing scholarly debate about the question if this association can be attributed to education itself, or whether it reflects the self-selection of people into different educational trajectories that match pre-existing values, beliefs and attitudes (Cavaille and Marshall, 2019; Kunst et al., 2020; Lancee and Sarrasin, 2015). One of the most influential explanations for education differences in socio-political orientations is socialization theory. According to the socialization model of education, schooling exposes students to ‘cosmopolitan’ values such as tolerance, egalitarianism and multiculturalism (Coenders and Scheepers, 2003; Keating, 2009; Thomsen and Olsen, 2017). Consequently, longer exposure to- and internalization of these values is argued to translate itself into stronger, *durable* cosmopolitan orientations.

Based on the socialization model, I argued that if socialization in education towards cosmopolitanism is to take place, this should especially occur in ‘human-centered’ fields of study, i.e. care, education and social studies. According to the existing literature, within these

fields there is an emphasis on the ability for students to imagine or understand the needs and experiences of other people. Students within these field are taught communicative competencies, “which makes students aware of other people's standpoints and motives, thereby broadening students' horizons and socializing them to value and accept divergent standpoints” (Van de Werfhorst and Kraaykamp, 2001: 313). Consequently, the authors in this tradition expect that due to its focus on human understanding, fields concerning the welfare and arguments of other people feature a stronger presence of values important to a cosmopolitan worldview, such as egalitarianism and tolerance for people who have a different way of life (Stubager, 2008; Surridge, 2016; Van de Werfhorst and De Graaf, 2004).

Using the Dutch LISS panel between 2007 and 2019, I studied the consequences of different fields of study for cosmopolitan orientations. The results provide cross-sectional evidence that among the Dutch population a background in a ‘human-centered’ field of study i.e. care, education and social studies, is associated with stronger cosmopolitan orientations than a specialization in business- or STEM related fields. However, once taking a longitudinal approach and zooming in on the dynamics of cosmopolitan orientations while in education it becomes clear that already prior to, or at the very beginning of the different specializations, students in ‘human-centered’ fields are more cosmopolitan than their peers in other fields of study. More importantly, contrary to the expectations based on the socialization model, no divergence is taking place in cosmopolitan orientations between ‘human-centered’ and other fields of study. Taken together, although I find support for H1, I fail to find support for H2.

Contrary to the expectations based on the socialization model of education, the results of this examination are more in line with the idea that the effects of education on cosmopolitan orientations primarily reflect the selection of people into trajectories that match pre-existing values, beliefs and attitudes (Finseraas et al., 2018; Kunst et al., 2020; Lancee and Sarrasin, 2015; Weber, 2020). Although I find descriptive differences between fields of study in

cosmopolitan orientations among the general Dutch population, these disparities already exist at the very beginning of each specialization and remain relatively stable over the course of study. Hence, the results of this study provide no conclusive evidence that these differences crystallize as a consequence of different socialization experiences while in education. Consequently, the results point to the importance of taking into account the role of pre-adult experiences, such as socialization in the home environment, to study educational differences in cosmopolitan orientations (Fox et al., 2019; Kuhn et al., 2018).

We should, however, be careful with completely rejecting the socialization model of education to understand differences in cosmopolitan orientations. First of all, even though panel data is employed, the results in this paper are still correlational. Therefore it is possible that random assignment to a ‘human-centered’ field of study would yield very different results. Second, in this study the informational aspects of socialization are especially emphasized, i.e. students are ‘taught’ cosmopolitan values that continue to influence their thinking over the life course. However, other research singles out the normative aspects of education when discussing socialization, such as the formation of ‘cosmopolitan’ peer networks and the influence these networks have on the values and attitudes of students (Hainmueller and Hopkins, 2014). Using field of study to tap into the informational aspects of socialization is unlikely to fully capture the normative process that occur within the school environment. Consequently, although the results challenge the ability of the education system to teach students cosmopolitan values, it is still a possibility that socialization towards cosmopolitanism takes place via interactions with peers. Future research could explore this mechanism further.

Finally, the results in this study are based solely on the Netherlands. The Netherlands is an exemplary case of the current educational divide over cosmopolitanism in Western Europe (Bovens and Wille, 2017; De Vries, 2018). Therefore I am confident that the results should be able to travel across borders to other Western European countries. However, future research

should examine whether these findings hold in other contexts as well. Concluding, this study hopes to stimulate future research into the mechanisms driving the educational divide over cosmopolitanism.

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Learning to love cosmopolitanism? Testing the socialization effect of educational field of study on cosmopolitan orientations in the Netherlands.

APPENDIX

APPENDIX A: Dependent variable

APPENDIX B: Descriptive statistics LISS

APPENDIX C: Full results underlying Figure 1

APPENDIX D: Sensitivity checks

APPENDIX A

Table A1. List of items to measure cosmopolitan orientations.

1	Some people believe that immigrants are entitled to live here while retaining their culture. Others feel that they should adapt entirely to Dutch culture. Where would you place yourself on a scale of 1 to 5, where 1 means that immigrants can retain their own culture and 5 means that they should adapt entirely? (reverse-coded).
2	It is good if society consists of people from different cultures.
3	It should be made easier to obtain asylum in the Netherlands.
4	Legally residing foreigners should be entitled to the same social security as Dutch citizens.
5	There are too many people of foreign origin or descent in the Netherlands. (reverse-coded).
6	It does not help a neighborhood if many people of foreign origin or descent move in (reverse-coded).
7	Some people and political parties feel that European unification should go a step further. Others think that European unification has already gone too far. Where would you place yourself on a scale from 1 to 5, where 1 means that European unification should go further and 5 means that it has already gone too far? (reverse-coded)

All items have an answering scale from 1 to 5. Across all eleven waves the Cronbach's alpha of the scale is 0.81. Analyzed for each wave independently, the Cronbach's alpha ranges from 0.78 to 0.83. Principal factor analysis retained one factor that has an Eigenvalue larger than 1. Taken together, this indicates a reliable scale.

APPENDIX B

Table B1: Descriptive statistics for sample ≥ 25 and ≤ 70

	Mean	St. Dev
Cosmopolitanism	2.774	.686
CTSS	.355	
BLS	.371	
STEM	.274	
Male	.504	
Female	.496	
Year of Birth	1962.413	12.611
Dutch	.832	
First generation – non-Western	.03	
First generation – Western	.03	
Second generation – non-Western	.043	
Second generation – Western	.013	
Unknown	.052	
Primary school	.032	
Intermediate secondary education	.177	
Higher secondary education	.059	
Intermediate vocational education	.293	
Higher vocational education	.315	
University	.124	
Higher academic or independent	.089	
Higher supervisory	.095	
Intermediate academic or independent	.281	
Intermediate supervisory	.132	
Other mental work	.213	
Skilled and supervisory manual	.076	
Semi-skilled manual	.061	
Unskilled and trained manual	.04	
Agrarian	.014	

Note: 29,682 observations from 7,402 unique respondents

Table B2: Descriptive statistics for sample ≤ 30

	Mean	St. Dev
Cosmopolitanism	2.858	.706
CTSS	.458	
BLS	.333	
STEM	.209	
Male	.434	
Female	.566	
Year of birth	1990.873	4.041
Dutch	.749	
First generation – non-Western	.016	
First generation – Western	.027	
Second generation – non-Western	.027	
Second generation – Western	.059	
Unknown	.122	
Primary school	.013	
Intermediate secondary education	.075	
Higher secondary education	.196	
Intermediate vocational education	.13	
Higher vocational education	.288	
University	.299	

Note: 1820 observations from 638 unique respondents.

APPENDIX C

Table C1: Results random-effects models for cosmopolitan orientations.

	(1) Cosmopolitan orientations	(2) Cosmopolitan orientations
Year of birth	-0.00*** (0.00)	-0.00*** (0.00)
Male (Ref.)		
Female	0.09*** (0.02)	0.07*** (0.02)
CTSS (Ref.)		
BLS	-0.12*** (0.01)	-0.12*** (0.01)
STEM	-0.13*** (0.02)	-0.12*** (0.02)
Primary school (Ref.)		
Intermediate secondary education	-0.11*** (0.03)	-0.10** (0.03)
Higher secondary education	0.15*** (0.04)	0.14*** (0.04)
Intermediate vocational education	-0.01 (0.03)	-0.01 (0.03)
Higher vocational education	0.22*** (0.03)	0.20*** (0.03)
University	0.40*** (0.03)	0.36*** (0.04)
Extremely urban (Ref.)		
Very urban	-0.03 (0.02)	-0.03 (0.02)
Moderately urban	-0.05* (0.02)	-0.05* (0.02)
Slightly urban	-0.08*** (0.02)	-0.07** (0.02)
Not urban	-0.08** (0.03)	-0.07** (0.03)
Constant	6.67*** (1.05)	7.10*** (1.07)
Immigration background	Yes	Yes
Occupation	No	Yes
Time FE	Yes	Yes
Observations	30470	29682
Respondents		7402
Log Likelihood	-1.4e+04	-1.4e+04

Robust standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

APPENDIX D

Table D1. Results random-effects models with original field of study variable.

	(1)	(2)	(3)
	All degrees	Post-secondary	Higher education
Time	-0.01 (0.01)	-0.02 (0.02)	0.01 (0.02)
<i>CTSS (Ref.)</i>			
BLS	-0.31*** (0.08)	-0.32** (0.10)	-0.30** (0.11)
STEM	-0.17 (0.09)	-0.26* (0.11)	-0.18 (0.12)
BLS x Time	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)
STEM x Time	0.00 (0.02)	0.03 (0.02)	0.02 (0.02)
Control variables	Yes	Yes	Yes
Observations	1820	1249	1086
Respondents	638	386	321
Log Likelihood	-1214.89	-806.78	-650.82

Note: Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. All models include controls for sex, year of birth, immigration background, highest attended level of education, urban residency and survey-wave.