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How teachers form educational expectations for students: A comparative factorial survey experiment in three institutional contexts

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ABSTRACT

While schools are thought to use meritocratic criteria when evaluating students, research indicates that teachers hold lower expectations for students from disadvantaged backgrounds. However, it is unclear what the unique impact is of specific student traits on teacher expectations, as different traits are often correlated to one another in real life. Moreover, research has neglected the role of the institutional context, yet tracking procedures, financial barriers to education, and institutionalized cultural beliefs may influence how teachers form expectations. We conducted a factorial survey experiment in three contexts that vary with respect to these institutional characteristics (The United States, New York City; Norway, Oslo; the Netherlands, Amsterdam). We asked elementary school teachers to express expectations for hypothetical students whose characteristics were experimentally manipulated. Teachers in the different contexts used the same student traits when forming expectations, yet varied in the importance they attached to these traits. In Amsterdam – where teachers track students on the basis of their performance and tracking bears significant consequences for educational careers – we found a large impact of student performance. In Oslo – where institutions show an explicit commitment to equality of educational opportunity – teachers based their expectations less on student effort, and seemed to make more inferences about student performance by a student's socio-economic background. New York teachers seemed to make few inferences about student performance based on their socio-economic background.

1. Introduction

In many Western societies, teachers are not only educators but also gatekeepers who, as part of their job, have to evaluate students' projected ability to succeed academically (e.g., which students will be future high- or low-achievers) (Domina et al. 2017; Lamont 2012). As gatekeepers, teachers play an important role in determining students' future school outcomes; either directly, by influencing the allocation of students to educational programs, or indirectly, as their evaluations can produce self-fulfilling prophecies (Wang et al., 2018).

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Teachers' gatekeeping role aligns with the meritocratic ideal that intellectual ability and effort (i.e., 'merit') determine one's position and success in society (Batruch et al., 2019). Relatedly, there is a widespread belief among both educators and the general public that success in the educational system depends on individual merit (Bartolomé 2008; Mijs 2019). Hence, we may presume that teachers' future expectations of students align with students' demonstrated academic ability and/or effort, and that there is universalism in how teachers in different Western societies form expectations.

Contrary to this universalistic idea, other scholars propose that the evaluative processes that teachers engage in to form expectations are *cultural processes,* involving (1) the *categorization* of a student as a member of a larger group, (2) the determination and recognition of the value or ranking of this student or group (*legitimation*), and sometimes also (3) other cultural processes like stigmatization and racialization (Lamont 2012; Lamont et al. 2014). According to this perspective, teacher expectations are not always purely based on 'merit', but are also influenced by a student's ascribed characteristics that invoke culturally and/or institutionally bound preconceptions and categories. In line with this, studies show that teacher expectations for similarly achieving students are lower for students from disadvantaged groups (Wang et al., 2018).

Moreover, even if expectations are (largely) based on 'merit', they are likely to vary across institutional contexts (Lamont et al., 2014). Here, we define institutions as (in)formal rules, norms, values, and cultural-cognitive beliefs that guide social action (c.f. Scott, 2013). The institutional context shapes teachers' engagement with the cultural process of forming expectations in a myriad of ways. For example, contexts that are characterized by a higher level of ability tracking may put more pressure on teachers to engage in rigid or extensive categorization processes (c.f., Domina et al., 2017). Furthermore, the institutional context may impact the extent to which stigmatization and racialization processes play a role in teacher expectations (c.f. Lamont et al., 2014), thereby affecting the influence of ascribed student characteristics.

The abovementioned theoretical considerations provide two interesting puzzles: How do teachers form expectations for students? And, to what extent does the formation of these expectations vary across institutional contexts?

This study contributes to past research by being the first cross-nationally comparative study on how elementary school teachers are impacted by different student traits when forming expectations. Specifically, we examine teacher expectations in three different institutional contexts, i.e., The Netherlands (Amsterdam), the United States (New York City, Manhattan) and Norway (Oslo). Past studies have neglected contextual variations in teacher expectations, and merely tried to explain teacher expectations by student (Klapproth et al. 2018; Timmermans, Boer, and van der Werf 2016) or teacher characteristics (Van den Bergh et al., 2010).

The educational institutional contexts of the Netherlands, the United States and Norway differ in various ways, including three aspects that we argue are particularly important in the formation of teacher expectations, i.e.: ability tracking procedures, financial barriers to the accessibility of (higher) education, and institutionalized cultural beliefs about educational success. First, ability tracking procedures are important, because teachers often play a pivotal role in students' track allocation. Ability tracking procedures may therefore induce or institutionalize the formation of teacher expectations (Dumont et al. 2019; Esser 2016). Second, financial barriers to education have a large impact on the factual educational opportunities of students from different socio-economic groups (OECD 2019), and may accordingly impact (teacher) expectations about students' future educational success. Finally, instutionalized cultural beliefs are generally argued to be important in evaluation and categorization processes (Lamont et al., 2014; Lamont and Thévenot

Table 1
City selection.

	Tracking model (country)	Average tuition fee for national students for a Bachelor's programme from a public (or government-dependent) institute in USD (country)	BA-degree attainment or higher, 25-34 year old population (country)	Socio-economic inequality in BA-degree attainment[1] (country)	% migration background (city)[2]
Amsterdam, The Netherlands	Formal between-school tracking at age 12; standardized student assessments to allocate students to tracks	2,537	47%	2.42	32%
Oslo, Norway	Comprehensive education until the age of 16; tracking is prohibited by law in elementary school	0	36%	2.21	25%
New York, The United States	Informal within-school tracking generally from age 12 onwards; procedures vary across schools	8,804	39%	7.75	38%

Notes: [1] Percentage of tertiary degree attainment among students with at least one parent with a tertiary degree divided by the percentage of tertiary degree attainment among students whose parents did not attain an upper secondary degree; [2] Population born in foreign country.
Statistics at the country-level are obtained from https://stats.oecd.org/, except for the statistics about higher education tuition fees which are obtained from Education at a Glance 2019 (OECD 2019). We used the most recent statistics available at the time. Statistics at the city-level are obtained from https://www.ssb.no/en for Oslo, from opendata.cbs.nl for Amsterdam, and from 'State of our immigrant city, 2018' from www1.nyc.gov for New York

2000).

We study teacher expectations for one specific level of attainment students may achieve in their future school career: completing a Bachelor's degree. We focus on this specific outcome, as Bachelor's degrees can be obtained in all three countries, and Bachelor's completion rates are highly similar across the three countries (OECD 2019; see Table 1).

To better isolate the causal impact of different student traits, we use a novel factorial survey experiment in which we ask teachers to formulate expectations for hypothetical students whose characteristics are experimentally manipulated. Prior research using observational data from single-countries has found *associations* between student ability, background characteristics and other student attributes, and teacher expectations (see Wang et al., 2018). However, observational studies do not necessarily reveal the true *impact* of different student traits, as the found relationships may be confounded by unobserved student traits (Fish, 2017). Moreover, different student traits are likely to be correlated with one another in observational data (e.g., socio-economic status and ethnicity) (Auspurg and Hinz 2014), making it impossible to disentangle the relative importance of each specific trait. While a few past studies have used a similar experimental set-up as the one we use in this study, these studies usually manipulate a limited number (1–3) of student characteristics, whilst keeping other characteristics constant (e.g., Auwarter and Aruguete 2008; Klapproth et al. 2018; Tobisch and Dresel 2017). This limits the generalizability of these findings (e.g., studies only included hypothetical male students), and most studies do not manipulate student traits that are typically considered to be meritocratic. We aim to provide a more comprehensive picture by varying two "meritocratic" (i.e., student performance and effort) and four "non-meritocratic" traits (ethnicity, gender, socio-economic status and parental help/interest) that have been found to be related to teacher expectations in previous research.

Our factorial survey experiment is ideal to compare teacher expectations across different contexts: by letting different teachers form expectations for the *same* students, contextual variations in teacher expectations will not be due to unobserved differences in the student population that teachers evaluate. Although our design does not allow us to examine the causal impact of institutional-level variables, we aim to shed more light on possible mechanisms driving contextual variations by taking into account teachers' (institutionalized) cultural beliefs about educational success and by addressing the inferences about student performance that teachers in different institutional contexts tend to make on the basis of student background traits.

1.1. Expectations based on 'merit'

When teachers form future expectations for a student they engage in a process of evaluation. Based on the sociology of evaluation, this process involves teachers (1) *categorizing* a student as a member of a larger group, and (2) determining and recognizing the value of this student or group (*legitimation*) (Lamont 2012; Lamont et al., 2014). In both Europe and the United States, the merit principle is commonly applied to categorize which students are 'deserving' and worthy of the best education (Mijs 2016). The merit principle implies that people's innate ability and effort determine their educational performance, opportunities, and eventually their attainment. In fact, studies find that teachers base their expectations for students predominantly on 'meritocratic' factors (Driessen et al. 2008; Jussim et al. 1996; Jussim and Harber 2005).

The meritocratic principle is popular in categorization processes in part because people believe it is a just and efficient way of allocating rewards (e.g., grades; educational opportunities) – one that ensures that talents will not go to waste (Mijs 2016). Moreover, meritocratic categorization is assumed to be functional, by stimulating people to maximize their efforts. In other words, when meritocratic practices lead to hierarchies and inequalities between *categories* of people, this is usually considered to be *legitimate*.

Given that (1) American and European educational institutions tend to rely on the merit principle when selecting students for educational programs (Batruch et al., 2019; Mijs 2016), and (2) its citizens (and educators) commonly believe that educational success is, and should be, based on merit (Bartolomé 2008; Mijs 2019), we expect teachers to hold higher future expectations for students with higher academic performance levels and effort.

1.2. Expectations based on demographic traits

Various studies show that, in practice, teachers do not base their expectations for students on 'meritocratic' factors alone (Wang et al., 2018). In fact, teachers generally hold lower expectations for students from typically disadvantaged groups, even if their performance-levels (and effort) are the same to those of their peers from advantaged groups. For example, American teachers are less positive about the educational future of students from disadvantaged socio-economic backgrounds (Auwarter and Aruguete 2008), and Dutch teachers give lower track recommendations to this group of students (Timmermans et al, 2016, 2018). A meta-analysis on teachers' racial/ethnic biases indicates that American teachers hold lower expectations for Black or Latino/a students than for White students (Tenenbaum and Ruck 2007). Research in the Netherlands does not find similar racial/ethnic differences in teacher perceptions (Geven, Batruch, and van de Werfhorst 2018). We are not aware of any studies on how ascribed student attributes relate to teacher expectations in Norway (see also Wang et al., 2018).

Several factors may explain why teachers hold lower expectations for students from disadvantaged groups, even if these students do not underperform in terms of their school performance and effort. First, evaluative processes may include processes of racialization and stigmatization (Lamont et al., 2014), implying that teacher expectations will be influenced by (implicit) prejudices or stereotypes attached to students from (dis)advantaged groups (Van den Bergh et al., 2010). Teachers may be prejudiced or hold stereotypes about students' intellectual competence and school performance, as well as the their behavioral and attitudinal 'aptness' for school. Regarding the latter, students from advantaged backgrounds are generally more likely to display behaviors and attitudes that align with teacher expectations and/or that teachers reward (Calarco, 2014; Lareau 2015). Accordingly, teachers may use student background traits to make assumptions about school behaviors and attitudes that remain covert to them. For example, they cannot directly

observe a student's emotional school engagement (e.g., value of education, school interest) (Fredricks and McColskey 2012) or involvement on tasks that are completed at home (Hong et al. 2011), and may 'fill in the blanks' by (unconsciously) relying on stereotypes and prejudicial attitudes.

Some studies indeed find that teachers hold *explicit* negative stereotypes and/or prejudicial attitudes about the school performance, attitudes, and/or behavior of students from disadvantaged socio-economic or ethnic minority backgrounds (e.g., Dunkake and Schuchart 2015), yet other studies do not find support for this (Pit-ten Cate and Glock, 2018). Nevertheless, teachers do seem to hold *implicit* attitudes that are in favor of students from advantaged backgrounds and/or against students from disadvantaged backgrounds (Pit-ten Cate and Glock, 2019). One study indicates that these implicit attitudes translate into differential expectations: Dutch teachers who hold more negative implicit attitudes against Moroccan and Turkish students hold lower expectations for these students than for students from the native majority (Van den Bergh et al., 2010).

Aside from stereotypes and/or prejudiced attitudes or beliefs, teachers may hold higher expectations for students from advantaged background due to a sense of 'realism' (Ferguson 2003). In many societies, the educational attainment of students from disadvantaged backgrounds is lower than that of students from advantaged backgrounds, even when accounting for measures of academic ability. Consequently, teachers may learn from experience that the educational chances of certain groups in society are socially stratified, and adjust their expectations accordingly. Teachers may thus deliberately categorize students on the basis of the larger social group(s) to which students belong, and legitimize this through rational arguments (e.g., certain students prove to be more successful in school) (c.f. Lamont et al., 2014).

1.3. Contextual variations in educational institutions

The (educational) institutional context may influence the extent to which teachers engage in evaluative processes (Domina et al., 2017; Lamont et al., 2014), and could impact the student characteristic that teachers rely on when they evaluate students (c.f., Lamont and Thévenot 2000). We define institutions in a broad sense, such that they include (in)formal rules, norms, values, and cultural-cognitive beliefs that guide and constrain social action (Scott, 2013). In other words, institutions shape behavior by defining which actions are legally, morally or culturally (in)admissible.

Through national institutions and through historical national identity, nations make cultural tools available to its members to make sense of the world (i.e., 'national cultural repertoires of evaluation', Lamont and Thévenot (2000)). Consequently, members of different societies differ in the cultural tools they have readily at their disposal to make sense of their environment, and will therefore also vary in the differences between individuals that they prioritize when assessing individuals.

In this paper, we examine teacher expectations in three different educational contexts: The United States, New York City; the Netherlands, Amsterdam; and Norway, Oslo. These contexts differ in various ways, including three institutional aspects that we deem to be particularly important in the formation of teacher expectations: tracking institutions, financial barriers to the accessibility of (higher) education, and institutionalized cultural beliefs about educational success.

Tracking or streaming of students into different educational programs on the basis of academic ability is common in many educational systems, yet systems vary in how early and rigidly students are tracked. In the Netherlands, students are separated into different educational programs for their entire curriculum when they are 12 years old (Van de Werfhorst, 2019). While students from different tracks may sometimes attend the same school, the Dutch tracking system is generally referred to as a 'between-school' tracking system (Chmielewski 2014), as students from different tracks attend separate classes for all their courses. Students in different tracks are offered different educational materials and are prepared for different future programs, implying that students need to complete a certain track-level to be allowed to University.

The Dutch tracking system is also characterized by intense standardized testing to assess student ability levels (Eurydice, 2020). In the upper grades of primary school, students are tested on a yearly basis, and teachers are required to rely on these tests to recommend tracks. A student's score on the final test in elementary school can also be translated into a track recommendation. Dutch elementary school teachers thus play an important role in the (initial) track allocation of students (Driessen et al., 2008; Timmermans et al., 2018); they are forced to evaluate students and to form clear ideas about their future chances.

In the United States, students also tend to be grouped on the basis of their ability, yet this generally occurs on a course-by-course basis *within* schools (Kelly 2019).[1] Compared to the Netherlands, this type of tracking is less formalized, and schools vary in their tracking policies. Tracking practices often start in elementary school, particularly for reading, allowing teachers to adjust their level of instruction to students' needs (Kelly 2019). From middle school on (at age 12), tracking becomes more ubiquitous on a course-by-course basis, determined by varying combinations of prior grades, prerequisite courses, educator recommendations, and student choice. Even though course-by-course tracking may extend to a wide range of courses, it generally leads to student categorizations of a lower 'scope' than between-school-type tracking (Domina et al., 2017). That is, students are not placed into one homogeneous category for all their courses, and can occupy multiple category positions at once. Compared to the Dutch system, category positions are thus assumed to have a weaker influence on students' daily school experiences (Domina et al., 2017); especially in elementary school, teachers may be less likely to think of a student as a future high or low achiever. While students are administered standardized tests in elementary school, these tests are generally intended to assess school quality rather than students' academic

potential.

In Norway, students attend comprehensive school until the age of 16. Course-by-course tracking based on prior academic performance is forbidden by law (Education Act, 1998; §8–2),[2] and students are not graded in primary and most of lower secondary school. Standardized tests (5th, 8th and 9th grades) in Norway are used to assess the quality of schools and education more broadly, rather than students' individual performance. At the end of secondary school, when students are 16 years old, students choose between a vocational or an academic track, yet teachers do not make any explicit track recommendations. All students have the right to access the academic track, but the admission to different schools depends on a student's attained school marks in 10th grade.

Research suggests that institutional tracking practices influence the level of inequality in educational attainment. In countries where students are tracked into different educational programs at a younger age (i.e., between-school tracking), educational outcomes are more strongly stratified by students' socio-economic and ethnic background (Griga and Hadjar 2014; Van de Werfhorst, 2019). Moreover, extensive course-by-course tracking predicts a stronger impact of a student's social background on educational outcomes (Chmielewski 2014).

In addition to tracking, countries differ in their financial barriers to (higher) education. Such barriers may also influence inequality in educational attainment through their impact on the accessibility of (higher) education. In Norway and the Netherlands, (higher) education is dominated by public institutions (OECD 2019), with 85% of all Bachelor's students enrolled in a program offered by a public or government-dependent private institution – as opposed to only 63% in the United States. Tuition fees for these programs are typically lower than those for programs offered by private institutions. Moreover, the average fees for Bachelor's programs from public and government-dependent private institutions are much lower in Norway and the Netherlands than in the United States (Table 1). Bachelor's programs tend to be free of costs in Norway and comparatively affordable in the Netherlands (i.e., less than 2600 USD a year), whereas in-state students pay on average almost 9000 USD a year in the United States.

Finally, societies differ in their institutionalized cultural beliefs about (educational) success. While the belief in meritocracy is prominent in both Europe and the United States, American citizens tend to be socialized with the idea of the "American Dream", a belief that success is an outcome of effort and perseverance (Alvarado, 2010; Hochschild, 1996; Mijs, 2016). Research shows that, compared to various European countries, including Norway and the Netherlands, the idea that hard work determines success is more widespread in the United States (Mijs 2018).

These cultural beliefs are likely to be intertwined with other aspects of a society's institutional context. Research shows that in societies characterized by higher levels of inequality, citizens are more likely to believe that inequalities are the outcome of meritocratic processes (Mijs 2019). Relatedly, there seems to be a more explicit political commitment to educational equality in Norway and the Netherlands than in the United States (Busemeyer 2014), and a stronger belief in meritocracy in the United States (Mijs 2018). As described above, the Norwegian educational system is characterized by 'detracking' and cheap education. While the Dutch system is characterized by extensive ability tracking, there are formal procedures that try to ensure that track allocation is based on meritocratic principles (e.g., standardized tests). Both the Norwegian and the Dutch educational system thereby reflect the idea that meritocracy does not come about automatically. Contrarily to this, the U.S. educational system seems to reflect a belief in the *inherent* meritocracy of the educational system: no external forces are in place to ensure equality of opportunity. While in the public debate the educational system is often presented as 'detracked' and offering equal opportunities; curriculums are tracked informally, and there are no procedures that foster track allocation based on meritocratic criteria.

1.4. Institutional contexts and the impact of 'merit'

Institutional contexts may vary in the extent to which student performance in elementary school impacts teachers' future expectations. More specifically, we expect this impact to be particularly strong in the Dutch early between-school tracking context in which elementary school teachers are forced to categorize students into homogeneous groups. Here, a student's performance in elementary school largely determines a student's track allocation (Driessen et al., 2008), and teachers are trained to translate this performance into future expectations for students (i.e., track recommendations). Moreover, track allocations bear important consequences for educational careers, implying that student performance in elementary school has significant implications for future educational opportunities. This relatively large impact of early performance is further magnified by the fact that track mobility is generally difficult in the Dutch system.

In Norway, and to a lesser extent the United States, teachers may attach fewer consequences to students' performance in elementary school. Instead, they may be more likely to hold similar future expectations for students with different performance levels. Since Norwegian elementary school teachers are not required to allocate students to tracks, students still have a lot of time to bloom before the moment of selection. In the United States, elementary school teachers may have to categorize students for some ability grouping, yet not into homogeneous groups. Moreover, compared to the Netherlands, students generally have more opportunities to change their track-level (c.f., Domina et al., 2017); thus, students' elementary school performance bears less consequences for their future educational outcomes. Moreover, in Norway and the United States, elementary school teachers are not trained to translate students' elementary school performance into future educational outcomes.

Most of the abovementioned arguments about how tracking institutions may influence the impact of student performance on

[2] As of 2008 small deviations are allowed, and there is some opening for accelerated learning in specific classes (e.g., mathematics and English; Education Act, §1–15). However, this is entirely voluntarily both on the school and individual level. Very few schools and students make use of this opportunity.

teacher expectations also apply to the impact of student effort, as student effort is another aspect that Dutch teachers will deliberately take into account in their track recommendations (Driessen et al., 2008). However, when considering contextual differences in cultural beliefs about educational success, we may expect a similarly large impact of student effort on teacher expectations in the United States. As outlined above, U.S. citizens are more likely to subscribe to the belief that effort and perseverance determine success than European citizens (Alvarado, 2010; Hochschild, 1996; Mijs, 2016). The significance of the American Dream throughout American history may cause teachers to put more weight on individual effort when drawing boundaries between students. In other words, American teachers may be more likely to have a growth mindset instead of a fixed mindset. Rather than thinking that academic ability and talent are innate, they believe that they are malleable and can be improved through effort (Claro et al. 2016; DeLuca, Coombs, and LaPointe-McEwan 2019). This may enhance the impact of student effort in the formation of teacher expectations.

1.5. Contexts and the impact of demographic student traits

The institutional context may also influence the impact of demographic student traits on teacher expectations. Early between-school tracking or course-by-course tracking (in respectively the Netherlands and the United States), may put elementary school teachers in a "selection gear" and could enhance the salience of the "selection function" of schools among teachers (Batruch et al., 2019). The selection function refers to the task of schools to decide which students are "deserving" of the best future educational opportunities, and strongly aligns with the meritocratic principle. This function may at times compete with a second function of schools, the educational function, which refers to the task of schools to provide all students with equal opportunities for learning.

While teachers may be thought to form their expectations for students on the basis of meritocratic criteria, the emphasis on meritocratic selection (in the selection function) can have paradoxical effects on inequality (Batruch et al., 2019). According to theories of how cognition interplays with contexts, people tend to believe that contexts emphasizing meritocratic principles are more just. Yet such beliefs may make people feel more fair and less conscious of biases, causing them to display more in-group favoritism and biases against disadvantaged groups (Castilla and Benard 2010). Experimental research suggests that in organizations that explicitly endorse meritocratic values, people in managerial positions tend to give higher financial rewards to male employees than to equally qualified female employees (Castilla and Benard 2010). Moreover, a recent experimental study indicates that socio-economic inequality in track recommendations for hypothetical students is larger in a condition in which a school's *selection* function is salient than when a school's *educational* function is salient (Batruch et al., 2019).

Finally, tracking institutions and financial barriers to higher education may enhance the *actual* level of inequality in educational attainment. Student background traits typically have a smaller impact on educational attainment in Norway (largely comprehensive education; low tuition fees) than in the Netherlands (between-school tracking; slightly higher tuition fees) and the United States (course-by-course tracking; relatively high tuition fees). In 2012, socio-economic inequality in tertiary degree attainment was considerably higher in the United States than in Norway and the Netherlands (see Table 1), and differences in tertiary attainment between members of the native-born population and those with a migration background were larger in the Netherlands than in the United States and Norway (OECD 2019). If teachers base their expectations for students on the average educational success of the demographic groups to which they belong (i.e., teacher realism), we expect teachers to rely more on demographic traits in countries in which these traits are more strongly correlated with educational success (i.e., the United States and the Netherlands).

However, institutionalized cultural beliefs could also influence the impact of a student's social background on teacher expectations, leading us to expect different country patterns. The American dream does not only convey the belief that hard work will pay off, but also that *anyone* can get ahead, independent of their family background (Hochschild 1996). These beliefs are deep-rooted in American society, and sharply contrast with the more pessimistic beliefs on intergenerational mobility in European countries (Alesina et al. 2018).

Relatedly, some scholars suggest that the influence of a student's social background on educational outcomes is weaker in cultures in which people think that educational success is primarily dependent on effort rather than innate ability (Liu and Xie 2016). In such "growth mindset" cultures, teachers may be more likely think that effort can trump initial educational disadvantages (i.e., "with hard work anyone can make it"), and less likely to assume that academic potential is dependent on a student's socio-economic background. This may translate into higher expectations for socio-economically disadvantaged groups. Since this 'growth mindset' culture aligns more with the ideology of the 'American Dream' than with European cultural beliefs about educational success, student socio-economic background may have a weaker impact on teacher expectations in the United States than in the Netherlands and Norway.

1.6. The current study

In this paper we address the following research questions: How do upper grade primary school teachers weigh meritocratic (i.e., student performance and effort) and demographic student traits (i.e., ethnic background and SES) when forming expectations about students' ultimate academic success, and how does this vary across three institutional settings (i.e., New York City, Amsterdam, and Oslo)? Moreover, to what extent can institutional differences in teacher expectations be understood by differences in teachers' growth mindset and the (related) inferences that teachers make about student performance on the basis of demographic student traits?

We hypothesize that teachers hold higher expectations for students who show higher levels of performance and effort (H1). However, we expect the impact of student performance to be stronger in Amsterdam (characterized by early between-school tracking) than in New York City (characterized by course-by-course tracking) and Oslo (characterized by comprehensive education) (H2); and the impact of student effort to be stronger in Amsterdam and New York City than in Oslo (H3a). This stronger impact of student effort in

New York City is expected to be (partly) explained by the fact that teachers in New York City are more likely to have a "growth mindset", which will amplify the impact of student effort on teacher expectations (H3b).

With respect to demographic student traits, we hypothesize that teachers will hold lower expectations for students from disadvantaged social groups than for students from advantaged social groups who show similar levels of academic performance and effort (H4). On the one hand, we hypothesize that the impact of student background will be stronger in Amsterdam (characterized by early between-school tracking and medium financial barriers to education) and New York City (characterized by course-by-course tracking and high financial barriers to education) than in Oslo (characterized by comprehensive education and low financial barriers to education) (H5). On the other hand, this impact may be weaker in New York City than in Oslo and Amsterdam (H6a), (partly) because teachers in New York City are expected to be more likely to have a 'growth mindset' (H6b) and to (relatedly) make less inferences about students' academic competencies on the basis of their background traits (H6c).

1.7. Research design, data, and analytical strategy

1.7.1. Research design

We collected cross-nationally comparative data among elementary school teachers in New York City (Manhattan), Amsterdam, and Oslo, the three largest cities in the United States, the Netherlands and Norway, respectively. We focus on cities because inequalities tend to present themselves clearly in cities in all countries, and teachers are confronted with students from diverse ethnic/racial and socio-economic backgrounds. All three cities are characterized by a sizeable population with a migration background (Table 1). We focus on elementary school teachers, as elementary schools are comprehensive in all cities. After elementary school, Dutch students are tracked between schools, and teacher expectations will then highly correspond to the track that students attend, because the tracks channel students into different tertiary programs. Moreover, this study aims to compare the expectations of teachers who are forced to make tracking decisions for students (i.e., Dutch elementary school teachers) to the expectations of teachers who do not have to engage in this task (e.g. Norwegian teachers).

We conduct a factorial survey experiment, also known as a vignette experiment, to examine how teachers form expectations for students (Geven et al., 2020). Teachers were asked to formulate expectations for hypothetical fifth-grade students whose characteristics had been experimentally manipulated. Because of the experimental manipulation, different student traits are uncorrelated to one another, which allows us to disentangle their impact. Moreover, we know on the basis of which information teachers evaluated the hypothetical students. This is an advantage over studies based on observational data, since teacher expectations for these hypothetical students cannot be based on student traits that teachers observe, but that are unobservable to the researcher. A possible downside of factorial survey experiments is that teacher responses to hypothetical students may not correspond to their real-world behavior. However, a study on teacher track recommendations has demonstrated the ecological validity of vignettes (Krolak-Schwerdt et al., 2018).

Teachers were asked to imagine that they were teaching each of the hypothetical students, and to assume that none of them ever repeated a grade and that all were born in the survey country. This last point was added to ensure that differences in teacher evaluation by a student's ethnic background were not due to nativity (Fish, 2017). For each hypothetical student, teachers had to indicate the chance that (s)he will complete a bachelor's degree from a college or university program on a ten-point scale from "0–10%" to "91–100%". While the completion of a Bachelor's degree is still far ahead, this outcome variable is most appropriate for our cross-national comparison (i.e., in all countries there are Bachelor's programs; and Bachelor's completion rates are quite comparable across the countries, see Table 1). There were no missing observations on the dependent variable.

In the vignettes, we varied six student characteristics: school performance, school effort, ethnic background, gender, parental school help/interest, and parents' socio-economic status (SES). We selected these characteristics because of their theoretical relevance

Table 2
Overview of vignette characteristics.

Student characteristic	Measure	Levels
SES	Parental occupation	1. Low: ISEI ±30 (e.g. hairdresser, delivery) 2. High: ISEI ±80 (e.g. architect, G.P.)
Ethnic background	Names	1. Native Majority: frequently used names (e.g., NL: Lotte, Milan; US: Liam, Charlotte; NO: Kristian Thea) 2. Minority: NL Turkish/Arabic (e.g., Yusuf, Zeynep); US Hispanic (e.g., Miguel, Juanita); NO Arabic (e.g., Tariq, Yasmeen)
Gender	Names; She/he	1. Girl 2. Boy
Effort	Description	1. Puts little effort into school 2. Puts a lot of effort into school
School performance	Description	1. Bottom 25% performer 2. Average performer 3. Top 25% performer 4. Missing
Parental help/interest	Description of interest and help	1. Parents show little interest in school performance and behavior; do not help with schoolwork. 2. Parents show great interest in school performance and behavior; help with schoolwork.

and/or because they appeared to relate to teacher expectations in previous studies. More specifically, a student's school effort and performance are prime indicators of student merit (Mijs 2016) and are key predictors of teacher expectations (Driessen et al., 2008). In terms of ascribed student traits, past studies show that teacher expectations vary by a student's SES, ethnicity/race, and gender (Wang et al., 2018). Teachers also tend to hold higher future expectations for students whose parents are more involved in school (Barg 2013; Driessen et al., 2008), and differences in parental help/interest have been put forward as a possible explanation for why teachers hold higher expectations for students from advantaged backgrounds (Barg 2013).

Table 2 provides an overview of the student characteristics that were varied in the vignettes, their measurement, and their levels. All characteristics, except for student performance, had two levels (e.g., high or low parental help/interest). For student performance, we distinguished between students who are in the bottom 25% of all 5th grade students, average performers, top 25% performers, and students whose performance is missing. This missing category allowed us to shed light on teachers' assumed academic potential for students of different demographic groups. If inequality in teacher expectations is especially pronounced when information about student performance is missing, it suggests that teachers make inferences about students' academic potential based on students' demographic traits. The total vignette population comprised of 128 vignettes (i.e., the Cartesian product of all vignette levels).

Teachers were asked to evaluate a set of eight vignettes. These sets were created by dividing the total vignette population into sixteen sets of eight vignettes on the basis of a d-efficient design. D-efficient designs maximize statistical power, and are the state-of-the-art technique for selecting vignettes for respondents (see Auspurg and Hinz 2014). More specifically, we used a computer algorithm that (1) minimized the correlations between different vignette characteristics and their two-way interactions within each set (or respondent), and (2) maximized the variance in the different levels of the characteristics in each set. Across respondents, the vignette characteristics and interaction terms were uncorrelated, as is typical in experimental designs.

To ensure cross-national comparability of the survey, we used the same online interface in all countries, and translated the English survey by two independent researchers in the Netherlands and Norway. Translations were compared, and differences were discussed until a satisfactory conclusion was reached. The vignettes were kept as similar as possible across the different contexts. However, in Oslo, we used different parental occupations to signal parental SES in two of the eight vignettes. One of the occupations was changed as it was uncommon in Oslo (i.e., Butcher), and the other one was changed because it had the same name in Norwegian as another occupation that was used in a different vignette. We made sure that the 'new' occupations had a similar occupational status as the ones that were used in Amsterdam and New York.

Student names also varied across the three cities. To signal an ethnic majority background, we used names that are commonly used in each country (see Table 2). The names we used to signal an ethnic minority background signaled ethnic minority groups that were deemed to be salient in that specific context (i.e., Hispanic-signaling names in New York, Arabic-signaling names in Oslo, and Arabic/Turkish-signaling names in the Netherlands). However, in all cities, we chose ethnic groups that can be signaled relatively unambiguously by means of a name (e.g., see the perception of typical Latino/a names as compared to African-American names (Gaddis, 2017b, 2017a)).

Names are commonly used to signal an ethnic minority background in experiments on ethnic/racial biases and discrimination (Anderson-Clark et al. 2008; Fish, 2017). This approach has advantages over explicitly mentioning a student's race or ethnicity, as it will likely reduce social desiriability biases. Accordingly, a prior vignette study found teachers to hold lower perceptions of the academic achievement of students with African-American sounding names than that of students with White-sounding names (Anderson-Clark et al., 2008), yet found no effect of an explicit statement about a student's race/ethnicity on teacher perceptions.

1.8. Data

In 2017 we approached all public elementary schools in Manhattan (New York City) via e-mail and telephone to participate in our survey (n = 130) (Geven et al., 2020). By means of a stratified random sample based on average student test scores, we selected 64 of these schools for visits. When schools agreed to participate, we approached all fifth-grade teachers (i.e., the final grade of elementary school; ± 4 per school) to partake in the survey. In total 65 teachers from 24 schools participated. In the school year of 2017–2018 we approached all public elementary schools in Amsterdam by telephone and e-mail (n = 97). In each participating school, we invited all upper grade teachers for the survey (i.e., grade 4–6; ±7 per school). We decided not to solely focus on fifth grade Amsterdam teachers, as all upper grade teachers, and especially sixth grade teachers are (likely to be) involved in the track recommendation procedure. In total, 71 teachers from 24 schools participated in the survey. In 2018, we e-mailed and called all public elementary schools in Oslo (n = 105). Similar to Amsterdam, we approached all 4–6 grade teachers in each partaking school (i.e., ±17 teachers per school), and 49 teachers from 19 schools participated.

Besides evaluating hypothetical students, teachers were asked to respond to questions about their educational beliefs and attitudes. To avoid priming effects in the vignettes, these questions were asked after the vignette questions. One question tapped into teachers' educational growth mindset by asking whether respondents thought a student's school success was more dependent on (1) a student's effort or (2) his/her innate ability. The data also included information on teacher gender, ethnic background, and parental educational level. Eight teachers were excluded from the analyses, because they did not provide information on either their educational growth mindset (3), ethnic background (2), or parents' educational attainment (3). Hence, the final sample includes 177 teachers who each evaluated 8 vignettes (i.e., 1416 evaluations nested in 177 teachers).

Table 3 shows the characteristics of the responding teachers and their schools in the three cities. The Dutch and the American sample are highly comparable with respect to teachers' gender, work experience, parental educational attainment, and being from an ethnic minority group (that is similar to the ethnic background of the minority students in the vignettes). Table 3 also sheds some light on the composition of participating schools in comparison to non-participating schools. While in all cities teachers from high as well as

Table 3
Sample characteristics (percentages/mean).

	Amsterdam	Oslo	New York
Teacher characteristics (n = 177)	(n = 68)	(n = 48)	(n = 61)
Male	22%	40%	21%
Hispanic (NYC)/non-Western background (Oslo, A'dam)	13%	10%	13%
Parental education (ISCED)	4.24	4.67	4.56
Teacher work experience (years)	11.94	10.24	10.69
Descriptions of students were realistic			
Strongly agree	4%	10%	13%
Agree	54%	67%	64%
Neither agree, nor disagree	32%	23%	16%
Disagree	9%	0%	3%
Strongly disagree	0%	0%	3%
Success in school is mainly dependent on a student's effort (i.e., teacher growth mind-set)	88%	77%	92%
School characteristics (n=67)	**(n=24)**	**(n=19)**	**(n=24)**
Average performance in standardized tests[1]			
Bottom third	17%	32%	21%
Middle	38%	16%	38%
Top third	46%	53%	42%
School size			
Bottom quarter	21%	11%	29%
Second quarter	17%	42%	25%
Third quarter	33%	32%	8%
Fourth quarter	29%	16%	38%

[1] For Amsterdam we use the average score on the CITO school leavers' test in the school year of 2014–2015. The CITO school leavers' test is a standardized test that is administered to pupils in their final year of primary school. Teachers use this test to formulate track recommendations. For New York City, we use a schools' average score on the NY State English Language Arts Test 2016 and NY State Math test 2016 across all grades. For Oslo, we use a schools' average score on the national assessment tests (nasjonale prøver) in 5th grade in reading and math.

low performing schools participated, teachers from bottom performing schools are underrepresented in the data, while teachers from top performing schools are overrepresented.[3]

Teachers generally thought that the descriptions of the hypothetical students were realistic (Table 3). In line with the arguments laid out in the theory section, teachers in New York were more likely to think that school success is more dependent on school effort than innate ability than teachers in Oslo and Amsterdam.

1.9. Analytical strategy

We start with a descriptive examination of teacher expectations in the three cities. Subsequently, we perform teacher fixed effect models separately for each city in Stata 15. Fixed effect models account for all (un)observed factors that vary between, but not within, teachers (Allison 2009).[4] To shed more light on the city differences in how teachers form expectations, we estimate fixed effect models on the pooled data, and include interaction terms between student traits and the three cities.[5] We first estimate separate models for each interaction between a specific student trait and the three cities (results not shown here). Based on these findings, we estimate a model with all statistically significant interaction terms. In this model we also control for interactions between the gender, non-native background, and SES of the hypothetical student and that of the teacher. In this way we try to account for city differences in teacher composition that may lead to differential teacher responses to student gender, ethnic background, and SES.

In a subsequent model using the pooled data, we include two-way interactions between the growth mindset of the teacher and the hypothetical student's SES, effort and performance level. Here we examine whether city differences in the impact of student effort or SES may be due to the fact that New York teachers are more likely to have a growth mindset.

Finally, we estimate a model with the pooled data in which we include interactions between the performance-level, SES of a

[1] In some systems within the United States, a proportion of students are also tracked between schools; in the case of New York City, 21% of public middle schools use various screened admissions processes, such as attendance records, grades or test scores, interviews, and auditions – but do not generally rely on teacher recommendations (New York Appleseed, 2019). Hence, compared to teachers in the Dutch system, teachers will experience less pressure to categorize students as future high or low achievers.

[3] We tested whether the effect of student traits on teacher expectations varied by a school's average student performance level. We found no support for this in any of the cities.

[4] Using the pooled data, we also estimated random effect models (see footnote 5) and examined whether accounting for the nesting of teachers in schools would improve the model. This was not the case.

[5] The interactions between student traits and cities are cross-level interactions. In the fixed effect models we cannot include random slopes for the student traits, and this may lead to biases in the estimates of the interactions. Hence, we also estimated six random effect models (vignettes nested in teachers). In each model, we included a random slope for one of the six student traits, and added a cross-level interaction between that student trait and the cities. This led to highly similar conclusions as the ones discussed in the paper.

student, and the three cities. Here we examine how inequality in teacher expectations varies by information about a student's performance in the three cities. We are especially interested in how inequality in teacher expectations varies between situations in which teachers have or do not have information about student performance.

In all models we apply an alpha of 0.05 for assessing statistical significance.

2. Results

2.1. Descriptive findings

Fig. 1 shows the distribution of teacher expectations in New York City, Oslo, and Amsterdam. We find statistically significant differences across cities in teachers' average expectations for students. Teacher expectations are lowest in Amsterdam and highest in New York, yet followed closely by Oslo. While New York and Oslo teachers think that the average chance that a hypothetical student will obtain a Bachelor's degree is about 70% (between the 61–70% and the 71–80% category), Amsterdam teachers think this chance is about 60% (between the 51–60% and the 61–70% category). This is surprising, since the share of 25–34-year-olds with a Bachelor's degree or higher is slightly higher in the Netherlands than in the United States or Norway (Table 1).

The impact of different student traits on teacher expectations in New York, Amsterdam, and Oslo.

Fig. 2 summarizes the results of the teacher fixed effect models, estimated separately for each city. Table A1 (Appendix) shows the underlying regression models of this figure, as well as the results of an analysis based on the pooled data with city interaction effects.

In line with our expectations, student performance and effort positively impact teacher expectations in all cities (hypothesis 1), and teachers in different cities vary in the importance they attach to these student characteristics (hypothesis 2 and 3). As hypothesized, student performance has a stronger impact on teacher expectations in Amsterdam (early between-school-tracking) than in New York City (within-school-tracking) and Oslo (late tracking) (hypothesis 2; see Fig. 2 and table A1). There are no differences between teachers in Oslo and New York with respect to the impact of student performance. Among teachers in Amsterdam, the expected chance that a student in the top 25% will obtain a Bachelor's degree is on average 3.6 points higher than the expected chance that a student in the bottom 25% will obtain a Bachelor's degree (i.e., 36 percentage points or 1.6 (3.6/2.31)[6] of a standard deviation in expectations). In Oslo and New York this difference is respectively 1.9 and 1.5 points.

In line with hypothesis 3a, student effort has a slightly stronger impact on teacher expectations in Amsterdam and New York than in Oslo. Amsterdam and New York teachers rate the chances of a student who does not put effort into school about 1.3–1.4 points lower than the chances of a student who does put effort into school (±13–14 percentage points; (1.3/2.31 and 1.4/2.15 ~ 0.6 of a standard deviation[vii] in teacher expectations). In Oslo, this difference is about 1 point. These city differences are statistically significant (table A1).

We find mixed support for our hypothesis that teachers hold lower expectations for students from disadvantaged social groups. While in all cities teachers hold lower expectations for students from disadvantaged SES backgrounds, in none of the cities they base their expectations on students' ethnic background (hypothesis 4). Our findings also show that teachers hold similar expectations for boys and girls.

Moreover, and contrary to our hypotheses (hypothesis 5 and 6a), student SES has the strongest impact on teacher expectations in Oslo, the most egalitarian context in our study.[7] In Oslo there is a 1.2-point difference in teacher expectations for students from advantaged and disadvantaged SES backgrounds, while this difference is about 0.6 points in Amsterdam and New York (table A1). In Oslo, the difference between teacher expectations for students from working class backgrounds (i.e., ISEI of ±30) and those for students from upper class backgrounds (i.e., ISEI of ±80) is similar to the difference between teacher expectations for students whose performance levels are in the bottom 25% and students with average performance levels.

Interestingly, our findings also show that socio-economic disparities in teacher expectations are more pronounced when teachers are from advantaged backgrounds (i.e., we find a statistically significant interaction between teacher socio-economic status and being a high SES student, see table A1). We do not find that the impact of student ethnic background or gender varies by, respectively, a teacher's ethnic background or gender.

Although we did not formulate hypotheses on the impact of parental help/interest, we find that teachers in all cities are more likely to expect that a student will obtain a Bachelor's degree when parents are more interested and involved in school. This effect is stronger in New York and Oslo than in Amsterdam.

With respect to our first research question - "How do upper grade primary school teachers weigh meritocratic and demographic student traits when forming expectations for students, and how does this vary across three different institutional settings" – we thus find that the same student traits boost or dampen teacher expectations in the three different contexts (i.e., New York City, Oslo, Amsterdam). All teachers base their expectations on both "meritocratic" traits (i.e., student effort and performance), as well as student socio-economic background and parental interest and involvement. However, there are differences in the magnitude of these effects across the contexts. Amsterdam teachers seem to rely more heavily on traits that are typically considered to be meritocratic.

[6] Fig. 1 shows the standard deviation in teacher expectations.

[7] Compared to the other two cities, there was a lower share of schools with an average standardized test performance in Oslo (Table 3). We examined whether city differences disappeared when accounting for an interaction between a school's standardized test performance and student SES. City differences remained after accounting for this interaction.

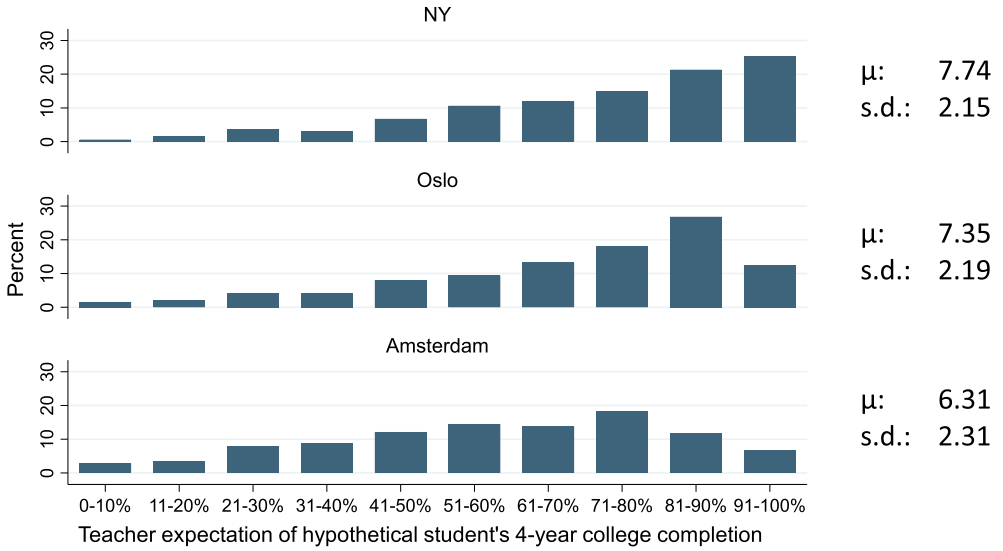

Fig. 1. Distribution of teacher expectations in New York, Oslo, and Amsterdam.

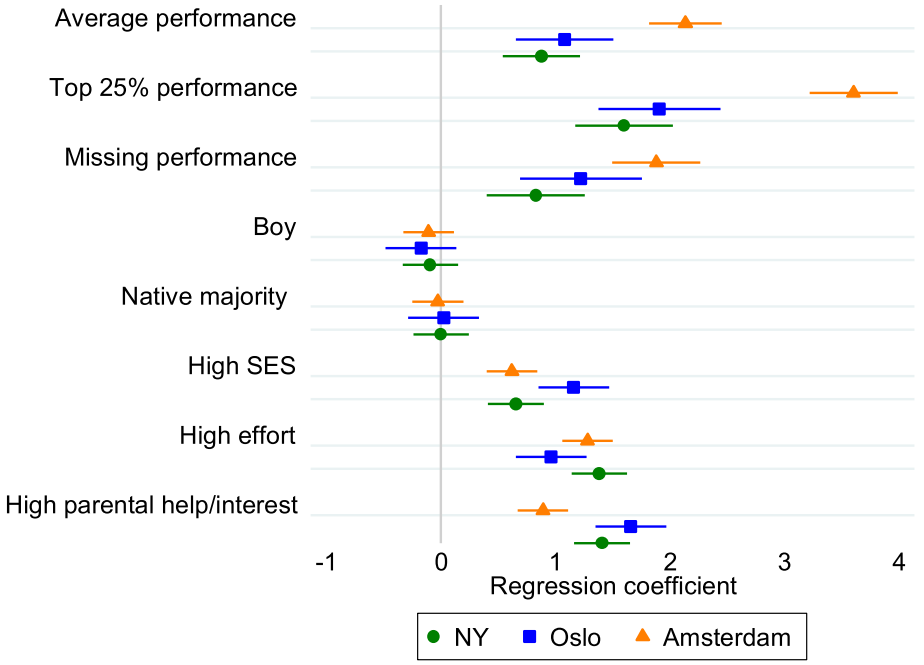

Fig. 2. Teacher fixed effect models, separately for each country.

2.2. *Teachers' growth mindset and contextual differences in teacher expectations*

Contextual differences in the impact of student effort and SES on teacher expectations may be explained by contextual differences in teachers' growth mindset (hypothesis 3b and 6b), as teachers with a growth mindset may rely more on effort and less on student SES. To examine this, we estimate models on the pooled data in which we include interactions between a teacher's growth mindset and student effort, SES, and performance (table A2 in the Appendix). We inspect whether the inclusion of these interaction effects reduces the city differences in the impact of student effort and SES (i.e., the interactions between city and SES and city and effort).

The findings suggest that city differences in the impact of student effort cannot be explained by city differences in teachers' growth mindset (hypothesis 3b). More specifically, we do not find that teachers base their expectations more on student effort when they think that school success is more determined by effort than innate ability (i.e., no statistically significant interaction between a teacher's growth mindset and student effort). Moreover, city differences in the impact of student effort remain unaltered after the inclusion of

this interaction (Table 4).

We do find that teachers with a growth mindset rely less on student SES when forming expectations (table A2; $p < 0.001$). Teachers who believe that success in school is mainly determined by effort (rather than innate ability) estimate the chance that a student from an advantaged socio-economic background will obtain a Bachelor's degree about 6 percentage points higher than that of a student from a disadvantaged socio-economic background (1.48–0.91 = 0.6). This difference is 15 percentage points among teachers who believe that success in school is mainly dependent on innate ability (rather than effort).

Moreover, when we account for the fact that teachers with a growth mindset rely less on student SES, the difference between Oslo and New York teachers in the impact of student SES is reduced (i.e., from 0.49 points to 0.36 points; Table 4, A1 and A2). This finding suggests that teachers with a growth mindset base their expectations for students less on student SES, and that this partly explains why New York teachers rely less on student SES when forming expectations than Oslo teachers (i.e., the former are more likely to have a growth mindset; hypothesis 6b).

2.3. *Inferences about academic performance on the basis of student SES across contexts*

Finally, we examine whether city differences in the SES inequality in teacher expectations depend on the information teachers have at their disposal about student performance. When there is little or no information about a student's school performance, teachers may use student SES to make inferences about student performance. We argued that teachers in New York may be less likely to make such inferences, as they are more likely to believe that – with good effort – all students can do well in school (hypothesis 6c).

Fig. 3 plots the average marginal effects of a student's socio-economic status for the different student performance conditions in the three cities (table A3 in the Appendix shows the underlying model). When student performance is missing, socio-economic inequality in teacher expectations is more pronounced in Oslo than in Amsterdam and New York. In fact, only for this condition of student performance, we find city differences in the impact of SES on teacher expectations.

Interestingly, Fig. 3 also shows that SES disparities in teacher expectations are largest among students whose academic performance is low, and statistically insignificant among average performing students in Amsterdam and high performing students in all cities.

To shed more light on the inferences about student performance that teachers in different cities seem to make when information about student performance is missing, we compare the average teacher expectations for students from high and low-SES backgrounds with missing performance information to the average teacher expectations for students with low, average and high performance levels in all three cities (figure A1 in the Appendix). In line with our expectations, we find greater SES disparities in teacher expectations when student performance is missing in Oslo than in New York City (hypothesis 6c). In Oslo, the average teacher expectation for students from high-SES backgrounds whose performance information is missing is similar to the average teacher expectations for top 25% performing students (8.23 versus 7.83). The average teacher expectation for students from low-SES backgrounds whose performance information is missing is similar to the average teacher expectation for the bottom 25% performing students (6.11 versus 5.94). Contrarily to this, in New York, there are no SES disparities in teacher expectations when student performance is missing: the average teacher expectation for students from high as well as low-SES backgrounds whose performance is missing is similar to the

Table 4
Impact of socio-economic background and effort in the three cities, before and after accounting for interactions with teachers' growth mind-set.

	Average Marginal Effects of student SES		Average Marginal Effects of student effort		Average Marginal Effects of student school performance	
	Baseline model	Model with teacher growth mindset interaction[1]	Baseline model	Model with teacher growth mindset interaction[1]	Baseline model	Model with teacher growth mindset interaction[1]
New York (ref. = low)	0.65*** (0.13)	0.70*** (0.13)	1.38*** (0.13)	1.36*** (0.13)	0.88*** (0.18)	0.89*** (0.17)
Average					1.08*** (0.20)	1.06*** (0.20)
High					2.14*** (0.17)	2.15*** (0.17)
Missing						
Oslo (ref. = low)	1.14 (0.14)	1.06*** (0.14)	0.95*** (0.14)	0.99*** (0.14)		
Average					1.61*** (0.22)	1.65*** (0.22)
High					1.91*** (0.25)	1.84*** (0.25)
Missing					3.61*** (0.21)	3.63*** (0.21)
A'dam (ref. = low)	0.64 (0.12)	0.66*** (0.12)	1.29*** (0.12)	1.29*** (0.12)	0.83*** (0.22)	0.85*** (0.22)
Average					1.22*** (0.25)	1.20*** (0.25)
High					1.89*** (0.21)	1.90*** (0.21)
Missing						

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. Average Marginal Effects are estimated at the means of the teacher growth mindset variable and teacher's parental education. [1] See table A2 in the Appendix for the full model on which these estimates are based.

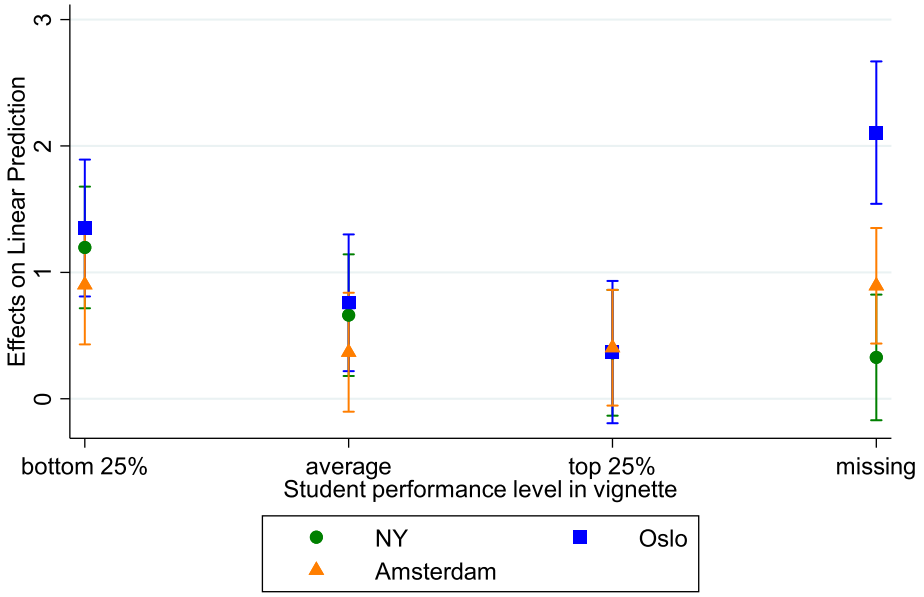

Fig. 3. SES differences in teacher expectations for different academic performance levels.

average teacher expectation for average performing students (6.96 and 6.63 versus 6.84).

To conclude, with respect to our second research question - "To what extent can insititutional differences in teacher expectations be understood by differences in teachers' growth mindset and the (related) inferences that teachers make about student performance on the basis of demographic traits?" - we find that the larger impact of student SES on teacher expectations in Oslo than in New York City can (partly) be explained by the fact that teachers in Oslo have less of a growth mindset. Teachers with a growth mindset rely less strongly on student SES in the formation of expectations. Moreover, Oslo teachers seem to make more inferences about student academic performance on the basis of SES than New York teachers.

3. Conclusions

In Western societies, teachers are generally believed to form expectations for students on the basis of meritocratic criteria. In line with this idea, some studies find that teacher expectations for students almost completely align with students' shown academic performance (and effort) (Driessen et al., 2008; Jussim et al., 1996). This may lead one to believe that there is universalism in how teachers in different Western societies form expectations for students. However, the formation of teacher expectations are evaluative processes, and contributions in the sociology of evaluation posit that such processes are cultural (Lamont et al., 2014). According to this perspective, evaluations are not always purely meritocratic, and may involve racialization and stigmatization processes. Moreover, the institutional context likely influences which student differences are prioritized when evaluating students, as contexts differ in the cultural tools that are available to make sense of the environment (Lamont and Thévenot 2000).

This paper sheds more light on how teachers form expectations for students, and how this formation varies across institutional contexts. We used a factorial survey experiment in which elementary school teachers in three different contexts (i.e., The United States, New York City; Norway, Oslo; and the Netherlands, Amsterdam) were asked to predict hypothetical students' chances to finish a Bachelor's program. The characteristics of the hypothetical students were experimentally manipulated, which allowed us to truly disentangle the impact of different student traits on teacher expectations whilst accounting for the potential confounding of (un) observable teacher characteristics. This design also enabled us to examine how teachers in different contexts assess the same students.

We found that the same student traits impacted teacher expectations in all three contexts. Specifically, teachers held higher expectations for students who performed better in school, put more effort into school, whose parents were more involved in school, and who were from socio-economically advantaged backgrounds. These findings imply that teachers do not only form expectations on the basis of characteristics that are typically considered to be meritocratic (i.e., effort and performance). The socio-economic disparities in teacher expectations were especially pronounced for students with lower academic performance levels and among teachers from more advantaged socio-economic backgrounds. However, neither male nor female teachers were affected by student gender, and neither teachers from ethnic majority backgrounds nor teachers from ethnic minority backgrounds were influenced by student ethnic background when forming expectations.

Although teachers across different contexts relied on the same student traits when forming expectations, we found contextual differences in how much weight teachers put on specific student traits. This finding is in line with earlier work in the sociology of evaluation that suggests that people in different societies do not necessarily rely on entirely different criteria of evaluation, but that some criteria vary in prevalence across societies (c.f., Lamont and Thévenot 2000).

In particular, we found that in the Dutch context, where teachers are involved in the allocation of students into homogenous ability tracks for their full curriculum, teachers put more weight on student performance when forming future expectations than in the American or Norwegian contexts where elementary school teachers only track students on a course-by-course basis or do not track students at all. This may be due to the fact that, in the Netherlands, student performance in elementary school has a relatively large impact on students' future educational chances, as it is pivotal in students' (initial) ability track allocation. Moreover, the Dutch context is characterized by an extensive testing culture to assess students' learning potential, and teachers are trained to translate test scores into expectations for students. In the American, and especially the Norwegian context, student performance in elementary school bears fewer consequences for students' access to a Bachelor's program, and elementary-level standardized assessments are typically used to assess schools, not individual students.

Our results also showed that Dutch and American teachers put more weight on student effort than Norwegian teachers. This might be due to the Dutch tracking context and the institutionalized belief in the 'American Dream' in the United States.

Interestingly, parental school involvement played a smaller role in teacher expectations in the Netherlands than in the United States and Norway. One possible explanation for this is that educational decisions are more choice-based in the latter two countries. Norwegian students pick a track when they are 16 years old, and American students often have some choice in the track in which they take different courses. When educational trajectories are more up to the students themselves, there is also more room for parents to intervene. This may lead teachers to estimate a larger impact of parental school help and interest on students' future educational attainment.

Surprisingly, we found the highest level of socio-economic inequality in teachers' future expectations in the most egalitarian context in our study, i.e., Oslo, Norway. However, this difference was only pronounced in situations in which teachers had no information about a student's performance level. This suggests that, in Oslo, teachers were more likely to make assumptions about a student's performance on the basis of student SES, and that providing (more objective) information about student performance to teachers may reduce SES inequality in teacher expectations. Conversely, in New York, teachers seemed to be less likely to make such inferences. Possibly, they were more likely to adhere to the idea of the 'American Dream' and to believe that students from all backgrounds can do well in school, as long as they work hard.

Related to this, findings suggested that part of the difference between New York City and Oslo with respect to the impact of student SES on teacher expectations was due to contextual differences in teachers' growth mindset. Teachers in New York City were more likely to think that school success is dependent on effort rather than innate ability, and, consequently, held more similar future expectations for students from different SES backgrounds. This finding is in line with other studies that suggested that growth mindset cultures may reduce socio-economic disparities in education (Liu and Xie 2016). Moreover, it suggests that socio-economic inequality in teacher expectations could be reduced by enforcing a growth mindset among teachers. However, a growth mindset could also be related to a belief that people deserve the life outcome they get and that people with little educational success just did not try hard enough. Future research may shed more light on this.

While our quantitative experimental design allowed us to disentangle the impact of different student traits on teacher expectations, it may have masked some of the complexity that is inherent to evaluative processes. For example, all teachers may rely on student performance when forming future expectations, yet American teachers may do so for different reasons (e.g. efficiency) than Dutch and Norwegian ones (e.g., fairness). Relatedly, the analyses cannot reveal contextual differences in what teachers perceive to be 'meritocratic', and how they conceptualize 'merit'. Additional qualitative analyses may help us to understand why teachers evaluate students on the basis of certain traits, and why teachers vary in how much weight they put on different traits.

It is possible that teachers respond differently to hypothetical students than to their own (real) students, and that their responses were influenced by social desirability. This may also explain why we found no ethnic differences in teacher expectations in New York, while other studies did find such differences in U.S. contexts (Tenenbaum and Ruck 2007). Although ecological validity may be a problem in vignette experiments, a recent study demonstrated the ecological validity of such experiments in research on teacher expectations in Germany and Luxembourg (Krolak-Schwerdt et al., 2018). A different reason for why we might not have found ethnic inequality in teacher expectations in New York City, is that tolerance towards immigrants is relatively high there (Fussell, 2014). Moreover, we only examined ethnic differences in teacher expectations for students with typical White and Hispanic names, yet teacher biases and misinterpretations may be especially pronounced for Black students in the United States. Possibly, we would have found ethnic disparities in teacher expectations if we would have (also) compared teacher expectations for Black and White students.

Although our experimental set-up provided support for the idea that teachers base their expectations on student SES, we cannot ascertain the extent to which this is due to (implicit) stereotypes and prejudices among teachers or teacher realism. Interestingly, findings suggested that teachers in New York may even hold "unrealistically" high expectations for students from disadvantaged backgrounds. New York teachers did not hold different expectations for students from different SES backgrounds when they had no information about student performance, and thus seemed to make few assumptions about student performance on the basis of student SES. This 'naivety' may act as a double-edged sword. On the one hand, it reflects a blindness to the reality of SES inequality in student attainment in the United States, and this may hamper the implementation of procedures to tackle inequality. On the other hand, it may positively affect the educational attainment of individual students when teachers make few presumptions about a student's academic potential based on their background. Even if socio-economic inequality in teacher expectations partly stems from teacher realism, it can still put students who deviate from their group at a(n) (dis)advantage. The assumptions that teachers make about students can be reified in teacher-student interactions, and can have real consequences on student attainment, as they could (1) lead to self-fulfilling prophecies and (2) impact the allocation of students to different educational programs by teachers. Hence, it may be important for teachers to hold high expectations for all students - independent of their background (c.f. Rubie-Davies 2014).

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Appendix

Table A1
Teacher fixed effect model of teacher expectations in New York, Oslo, and Amsterdam.

	Pooled analysis	Analyses separately for each city		
		NY	Oslo	Amsterdam
	Est. (s.e.)	Est. (s.e.)	Est. (s.e.)	Est. (s.e.)
Vignette characteristics				
School performance(ref. = Bottom 25%)				
Average	0.881***	0.881***	1.080***	2.136***
	(0.175)	(0.172)	(0.217)	(0.162)
Top 25%	1.606***	1.602***	1.909***	3.605***
	(0.222)	(0.217)	(0.271)	(0.196)
Missing	0.835***	0.831***	1.225***	1.884***
	(0.222)	(0.217)	(0.271)	(0.196)
Boy	−0.108	−0.090	−0.172	−0.107
	(0.086)	(0.123)	(0.157)	(0.113)
Native majority	0.019	0.004	0.025	−0.026
	(0.079)	(0.123)	(0.157)	(0.113)
High SES	0.644***	0.656***	1.161***	0.621***
	(0.126)	(0.123)	(0.157)	(0.113)
High effort	1.385***	1.385***	0.964***	1.283***
	(0.126)	(0.123)	(0.157)	(0.113)
High parental help/interest	1.410***	1.410***	1.661***	0.893***
	(0.126)	(0.123)	(0.157)	(0.113)
Interactions vignette characteristics and city				
School performance # City(ref. = New York)				
Average # Oslo	0.199			
	(0.263)			
Average # A'dam	1.255***			
	(0.245)			
Top 25% # Oslo	0.303			
	(0.331)			
Top 25% # A'dam	2.001***			
	(0.303)			
Missing # Oslo	0.389			
	(0.331)			
Missing # A'dam	1.051***			
	(0.303)			
SES # City(ref. = New York)				
High SES # Oslo	0.495**			
	(0.190)			
High SES # Amsterdam	−0.004			
	(0.174)			
Effort # City(ref. = New York)				
High effort # Oslo	−0.422*			
	(0.190)			
High effort # Amsterdam	−0.102			
	(0.173)			
Parental help/interest # City(ref. = New York)				
High parental help/interest # Oslo				

(*continued on next page*)

Table A1 (*continued*)

	Pooled analysis	Analyses separately for each city		
		NY	Oslo	Amsterdam
	Est. (s.e.)	Est. (s.e.)	Est. (s.e.)	Est. (s.e.)
	0.252			
	(0.190)			
High parental help/interest # Amsterdam	−0.516**			
	(0.173)			
Interactions vignette characteristics and teacher characteristics				
High SES # Teacher socio-economic background	0.096*			
	(0.042)			
Native majority # Teacher non-native	−0.168			
	(0.224)			
Boy # Teacher male	−0.039			
	(0.168)			
Constant	4.193***	5.240***	4.495***	3.043***
	(0.116)	(0.193)	(0.243)	(0.180)
N	1416	488	384	544

*p < 0.05; **p < 0.01; ***p < 0.001.

Table A2
Teacher fixed effect model of teacher expectations in New York, Oslo, and Amsterdam with interactions between a teacher's growth mindset and student performance, SES and effort

	Est. (s.e.)
Vignette characteristics	
School performance(ref. = Bottom 25%)	
Average	1.178***
	(0.331)
Top 25%	2.223***
	(0.426)
Missing	1.078**
	(0.426)
Boy	−0.111
	(0.086)
Native majority	0.018
	(0.078)
High SES	1.480 ***
	(0.235)
High effort	1.019***
	(0.235)
High parental help/interest	1.410***
	(0.125)
Interactions vignette characteristics and city	
Ability # City(ref. = New York)	
Average # Oslo	0.165
	(0.263)
Average # A'dam	1.252***
	(0.243)
Top 25% # Oslo	0.191
	(0.336)
Top 25% # A'dam	1.980***
	(0.301)
Missing # Oslo	0.355
	(0.336)
Missing # A'dam	1.054***
	(0.301)
High SES # City(ref. = New York)	
High SES # Oslo	0.361
	(0.191)
High SES # Amsterdam	−0.036
	(0.173)
High effort # City(ref. = New York)	
High effort # Oslo	−0.363
	(0.191)
High effort # Amsterdam	−0.088
	(0.172)

(*continued on next page*)

Table A2 (*continued*)

	Est. (s.e.)
High parental help/interest # City(ref. = New York)	
High parental help/interest # Oslo	0.252
	(0.188)
High parental help/interest # Amsterdam	−0.516**
	(0.172)
Interactions vignette characteristics and teacher characteristics	
High SES # Teacher socio-economic background	0.097*
	(0.041)
Native # Teacher non-native	−0.180
	(0.223)
Boy # Teacher male	−0.022
	(0.167)
High SES # Teacher growth mindset	−0.910***
	(0.217)
High Effort # Teacher growth mindset	0.399
	(0.217)
School performance # Teacher growth mindset	
Average # Teacher growth mindset	−0.328
	(0.311)
Top 25% # Teacher growth mindset	−0.666
	(0.392)
Missing # Teacher growth mindset	−0.265
	(0.392)
Constant	4.189***
	(0.115)
N	1416

*p < 0.05; **p < 0.01; ***p < 0.001.

Table A3
Teacher fixed effect model of teacher expectations in New York, Oslo, and Amsterdam with interactions between student performance and SES

	Est. (s.e.)
Vignette characteristics	
School performance (ref. = Bottom 25%)	
Average	1.149***
	(0.245)
Top 25%	2.023***
	(0.282)
Missing	1.270**
	(0.282)
Boy	−0.115
	(0.085)
Native	0.017
	(0.078)
High SES	1.195***
	(0.245)
High effort	1.388***
	(0.125)
High parental help/interest	1.419***
	(0.125)
School performance # High SES	
Average # High SES	−0.536
	(0.347)
Top 25% # High SES	−0.834*
	(0.353)
Missing # High SES	−0.870*
	(0.353)
Interactions vignette characteristics and city	
School performance # City (ref. = New York)	
Average # Oslo	0.228

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Table A3 (*continued*)

	Est. (s.e.)
	(0.369)
Average # A'dam	1.254***
	(0.343)
Top 25% # Oslo	0.375
	(0.422)
Top 25% # A'dam	1.831***
	(0.386)
Missing # Oslo	−0.424
	(0.423)
Missing # A'dam	0.618
	(0.386)
High SES # City (ref. = New York)	
High SES # Oslo	0.154
	(0.369)
High SES # Amsterdam	−0.295
	(0.343)
High effort # City (ref. = New York)	
High effort # Oslo	−0.418*
	(0.188)
High effort # Amsterdam	−0.108
	(0.172)
High parental help/interest # City (ref. = New York)	
High parental help/interest # Oslo	0.237
	(0.188)
High parental help/interest # Amsterdam	−0.518**
	(0.172)
Interactions vignette and teacher characteristics	
High SES # Teacher socio-economic background	0.097*
	(0.041)
Native # Teacher non-native	−0.151
	(0.223)
Boy # Teacher male	−0.015
	(0.166)
School performance # high SES # City	
Average # high SES # Oslo	−0.058
	(0.522)
Average # high SES # Amsterdam	0.003
	(0.485)
Top 25% # high SES # Oslo	−0.147
	(0.532)
Top 25% # high SES # Amsterdam	0.338
	(0.486)
Missing # high SES # Oslo	1.624**
	(0.532)
Missing # high SES # Amsterdam	0.864
	(0.487)
Constant	4.018***
	(0.132)
N	1416

*p < 0.05; **p < 0.01; ***p < 0.001.

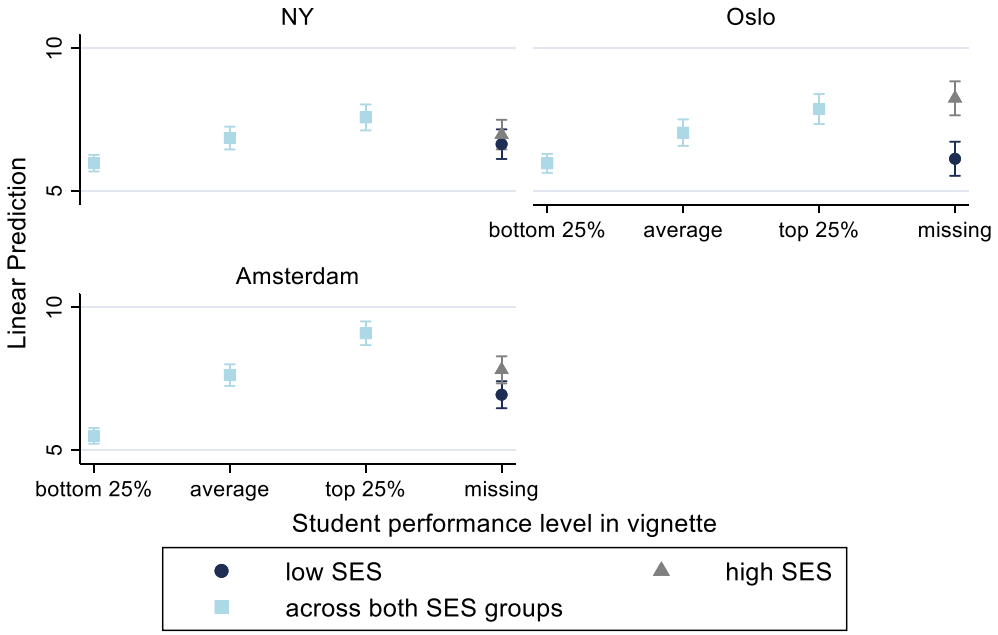

Fig. A1. Average teacher expectations for low, average, and high performing students and average teacher expectations for students from low and high-SES backgrounds whose performance level is unknown in New York, Oslo, and Amsterdam

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