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Reproduction of social class inequalities at school: experimental study of structural barriers to educational equality

Batruch Anatolia

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FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES
INSTITUT DE PSYCHOLOGIE

Reproduction of social class inequalities at school:
experimental study of structural barriers to educational equality

THÈSE DE DOCTORAT

présentée à la
Faculté des Sciences Sociales et Politiques
de l'Université de Lausanne

pour l'obtention du grade de
Docteur ès Psychologie Sociale

par
Anatolia Batruch

Directeur de Thèse
Professeur Fabrizio Butera

Membres du Jury
Docteur Benoît Dompnier
Professeur Gabriel Mugny
Professeure Jolanda Jetten

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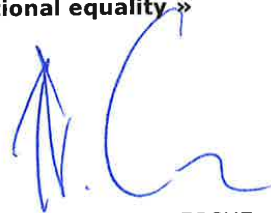
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- Gabriel MUGNY, Professeur à l'Université de Genève

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« **Reproduction of social class inequalities at school: Experimental study of structural barriers to educational equality** »



Jean-Philippe LERESCHE
Doyen

Lausanne, le 20 mars 2018

RESUME

Pour comprendre les différences de réussite scolaire entre les classes sociales, la littérature en psychologie sociale s'est jusqu'à présent concentrée sur la manière dont les contextes éducatifs conditionnent la performance des élèves sans aborder directement la possibilité que l'école en tant qu'institution prenne une part active dans la reproduction des inégalités sociales. Dans cette thèse, nous proposons une étude expérimentale des obstacles structurels qui contribuent à exclure activement les élèves de SSE bas, en démontrant l'impact des pratiques de sélection sur le comportement des évaluateurs. Trois lignes de recherche ont été conçues pour examiner quels sont les contextes structurels et les raisons qui peuvent encourager les évaluateurs à créer artificiellement un écart de réussite. Nous suggérons que la création d'un écart de réussite par les évaluateurs peut être façonnée par une structure organisationnelle axée sur la sélection. De plus, nous proposons que le biais dans le processus d'évaluation peut être le résultat d'une logique institutionnelle de sélection. Dans les deux premières lignes de recherche, nous avons démontré que l'utilisation de pratiques de sélection (évaluation normative ou orientation scolaire) peut être biaisée en fonction du SSE des étudiants, même lorsque les résultats des élèves sont identiques. L'écart entre les étudiants était plus important lorsque la fonction de sélection était rendue saillante. Dans la deuxième ligne de recherche, nous avons étudié les raisons sous-tendant le comportement discriminatoire des évaluateurs. Dans deux études, nous avons testé si le biais contre les élèves de SSE bas peut être motivé par un sentiment de menace à l'encontre de la hiérarchie scolaire actuelle. Nos résultats ont confirmé notre prédiction: Lorsque les élèves de SSE bas étaient présentés comme étant performants, leurs performances étaient amoindries par les évaluateurs.

Nos recherches démontrent que les contextes scolaires sélectifs favorisent paradoxalement la reproduction active des inégalités en augmentant le maintien artificiel de l'écart de performance par les évaluateurs et en les amenant à compromettre la réussite des élèves à faible SSE pour maintenir un statu quo.

ABSTRACT

To understand the differences in educational attainment, the literature in social psychology has examined how educational settings contextually shape students' performance without directly addressing the active role of schools as an institution in the reproduction of social class inequalities. In this thesis, we propose to go beyond individual performance and present an experimental investigation of the structural obstacles that contribute to actively exclude low socioeconomic status (SES) students from higher education, by focusing on evaluators' use of merit-based selection practices. Three research lines were designed to test *when* and *why* evaluators artificially create an achievement gap. We suggest that the creation of the gap by evaluators can be shaped by an organizational structure that emphasizes selection. We propose that bias in the evaluation process can be the result of an institutional logic of selection. In the first two research lines, we found evidence that use of selection practices (either normative assessment or tracking) could be biased by the evaluators' awareness of the students' SES, even when students' achievement was kept identical. The gap between students was wider when the selection function was rendered salient. In the second research line, we investigated the reason behind the evaluator's SES discriminatory behavior. In two studies, we tested if the bias against lower-SES students was driven by a threat to the current social class hierarchy in education. Our results confirmed our prediction that achievement was undermined especially when lower-SES students were presented as high-achieving.

Taken together, our research highlights that seemingly meritocratic selective contexts favor the active reproduction of inequalities in school by increasing evaluators' artificial maintenance of the achievement gap and by leading them to undermine the achievement of high-achieving low-SES students to maintain the status quo.

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Amsterdam, Juin 2018

*« Pourquoi chez moi le rêve est évincé par une réalité glacée?
Et lui a droit à des études poussées
Pourquoi j'ai pas assez d'argent pour acheter leurs livres et leurs cahiers?
Pourquoi j'ai du stopper les cours?
Pourquoi lui n'avait de frère à nourrir? Pourquoi j'ai dealé chaque jour?
Pourquoi quand moi je plonge, lui passe sa thèse?
Pourquoi les cages d'acier, les cages dorées agissent à leur aise?
Son astre brillait plus que le mien sous la grande toile
Pourquoi ne suis-je pas né sous la même étoile?*

*La vie est belle le destin s'en écarte
Personne ne joue avec les mêmes cartes
Le berceau lève le voile, multiples sont les routes qu'il dévoile
Tant pis on n'est pas nés sous la même étoile »*

IAM, Nés sous la même étoile

*« Pour prédire la note d'un candidat,
il vaut mieux connaître son examinateur que lui-même! »*

Henri Piéron, 1963, p.2

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THEORETICAL PART

I. Current perspectives on the SES achievement gap

Since, the 20th century when mass education was introduced, educational institutions are obliged under the law to offer equality of opportunity to all individuals in order to develop every student's potential. In practice, educational institutions in most Western countries offer compulsory elementary education and public schools offer free access to all (Dubet, 2004). Seventy years after the expansion of education, this growth has not stopped students' SES from having a critical influence on educational attainment.

Indeed, international studies carried out by the OECD regularly highlight that low-SES students have lower performance than high-SES students (OECD, 2011, 2013a). Across OECD countries, 15% of the difference in performance among students can be explained by differences of socio-economic status (SES). When looking at average differences in mathematic scores between 15-year-old students, those who come from a low SES are one year of school behind their higher-SES counterparts. In the United States, lower-SES students enter high school with average literacy skills five years behind those of higher-SES students (Reardon, Valentino, Kalogrides, Shores, & Greenberg, 2013).

Difference in opportunities can be observed at all stages of the educational life course. Individuals from the top family income quartile are 8 times more likely to obtain a bachelor's degree by age 24 comparatively to those from the lowest family income quartile (U.S. Census Bureau, 2000). Across countries, likelihood to attend a tertiary institution is twice as big if at least one of the parents attained a high-school diploma, and 4.5 times as great if the parents also attained tertiary education (OECD, 2013b). These differences appear even when abilities appear similar or in favor of the lower-SES child. In the United States, among children with high aptitudes, only 24% of those coming from lower-SES families will earn a college degree vs. 74% for children of higher-SES (Kraus & Park, 2017). Similarly, in the UK, according to education secretary Justine Greening, children showing signs of low academic ability at age five from high-income families are still 35 percent more likely to become high earners than their low-income peers who show early signs of high ability (Worley, 2017).

Beyond the work that statistically establishes SES differences in performance and opportunities (see also Sirin, 2005; White, 1982), research has been particularly interested in identifying the explanatory mechanisms for this difference in achievement, with explanations ranging from physiological characteristics to purely social accounts.

In this chapter, we will provide a brief overview of results from the perspectives which have marked the social class achievement gap literature: from individual biological explanations to the role of schools in the reproduction of social class inequalities. We will start

by introducing biological studies devoted to social class differences in cognitive abilities and will follow with a brief overview of the sociological literature dedicated to the existing explanations of the social class inequalities. We will then move on to present available social-psychological work focusing on the role of schools in the reproduction of social class inequalities. This review will allow us to show the current limitations of the existing literature and the benefits of integrating the perspective of teachers and institutional practices to account for the social class achievement gap.

1.1. Biological perspective

One of the research lines that attempts to explain family's influence on children's performance is focused on the genetic and biological causes of intelligence. There is a consensus among experts that intelligence is one factor which is influential in explaining performance differences; however precisely how much is caused by biological factors is still up for debate (Rindermann, Becker, & Coyle, 2016). The biological perspective can be traced back to scientists such as Paul Broca who studied correlations between the anatomy of the brain and intellectual professions (Broca, 1861). Later this idea was picked up again by researchers such as Rushton and Ankney (2009) who published a review on 28 studies measuring brain volume by MRI or tomographic scanner on the relationship between brain size and overall mental capacity, age, social class, gender and race. Their results showed a .38 correlation between brain size and score to standardized intelligence tests. White men of higher-SES were found to possess both a larger brain and higher mental abilities compared to people from lower-SES men, women and Blacks. The differences in intelligence between the groups corresponded to anatomical differences, which is interpreted by the authors as an explanation for differences in cognitive abilities.

A second type of research deals more directly with the heritability of intelligence. It consists in measuring the intelligence of twins raised in different environments. This method attempts to dissociate environmental from genetic determinants of intelligence. A large study, involving 56 pairs of monozygotic twins raised separately established that genetic variations account for 70% of the variation in IQ (Bouchard, Lykken, McGue, & Segal, 1990). Likewise, comparison of monozygotic twins and dizygotic twins reveals a .81 intelligence heritability in India (Pal, Shyam, & Singh, 1997) and .58 in Japan (Lynn & Hattori, 1990). Most studies estimate that the heritability to be somewhere between .4 and .8 (Nisbett et al., 2012). These results are sometimes taken abusively to support the idea of a genetic origin of differences in intellectual performance between social groups (Gould, 1996; Sternberg, Grigorenko, & Kidd,

2005). Critics point out that most of this research has been conducted in similar high-SES environments and that making inferences about the genetic determinism of intelligence for individuals based on these data reveal a misunderstanding/misuse of the concept of heritability, which is sometimes taken to mean that genes causally determine individual intelligence (Moore & Schenk, 2017). Furthermore, measures of heritability can't always exclude environmental factors, as those can be correlated with genetic variations. Instead, heritability is supposed to be the proportion of variance in a trait which is attributable to genetic variation (and not caused by genetic variation) within a defined population in a specific environment. In controlled lab environments such as those used when studying animal breeding, where environmental factors can be somewhat controlled, making inferences about a single value for heritability makes practical sense, but this leap loses its scientific interest in highly uncontrolled environment such as those encountered by humans (Nisbett et al., 2012). Especially in light of evidence suggesting that environmental factors causally impact intelligence. For instance, adoption from a poor family into a more advantaged one is associated with IQ gains of 12 to 18 points (Nisbett et al., 2012).

Recent work on epigenetics suggests using caution in this debate. These studies provide convincing evidence that low socio-economic environments constrain the expression of genetic predispositions for intelligence. A meta-analysis examining 10,831 pairs of twins in the United States revealed that the heritability of intelligence was lower among lower-SES environments than it was in higher-SES environments (Tucker-Drob & Bates, 2016). This could mean that structural characteristics of lower social class environments suppress the impact of genes on intelligence (Kraus & Park 2017). Likewise, Turkheimer et al. (2003) found that in low-SES families, shared environment accounts for almost all of the variation in IQ, with genes accounting for practically none. This changes as SES increases. In higher SES families, almost all of the variation in IQ was accounted for by genes and little was accounted for by shared environment (Turkheimer, Haley, Waldron, d'Onofrio, & Gottesman, 2003). Following this evidence, attributing genetic causes for individuals' differences in test performance ignores the interactive effect of environment and results in widely inaccurate interpretations.

1.2. Environmental causes

A larger section of the research on the causes of the SES gap at school has focused on the environmental influences. Traditionally, this line of research has been developed by sociologists of education. The sociological literature on this subject is vast and far-reaching but can mostly be divided in two influential perspectives: internal and external perspectives

(Reay, 2010). The internal perspective, which was popular in the 1990's but is on the decline, according to Reay (2010), investigates how schools can affect social class inequalities. Contemporary research is increasingly heading towards a position that considers schools to have limited capacity to deal with and compensate for social and economic inequality. Most researchers concur that a sole focus on schools is insufficient, but there seems to be little consensus over the exact extent to which schools play a role in perpetuating social class inequalities. The second tradition in sociology of education looks at external factors to schools. Those can range from the effects of the labor market to the class cultures. To organize the literature and the findings, sociologists often refer to two types of effects in the external literature: the primary and secondary effects (Boudon, 1973). Both of these effects focus on the impact of families on educational attainment. Primary effects look into the family's influence on the child through its cognitive and non-cognitive development which in school translates to a child's academic performance. The secondary effects characterize the effects of SES which persist in educational transitions after holding performance constant. It describes how SES can influence students' decisions to proceed or not in the educational system, by impacting the perceptions of the costs involved in pursuing a social mobility path (Falcon, 2013; Ressa and Azzolini, 2014). Both strands of research have proposed explanations that highlight the influence of families on children's performance.

1.2.1. Material and cultural deprivation

Low-SES families face in their daily lives a number of material constraints that impact their children's performance in school, notably affecting their ability to cope with the so-called "hidden costs of free schooling" (Bull, 1980). Housing conditions can be overcrowded and noisy and generally ill-equipped for studying. Material constraints can also become physical barriers. Low-SES children have poorer diets and lack some necessary vitamins and energy minerals affecting their concentration and explaining behavioral problems (Howard, 2001). These repeated experiences lead lower-SES children to be more exposed to stress than higher-SES students and to internalize their parents' worries.

Low-SES parents possess less toys, books, computers and have less money for school trips and for appropriate clothes. They do not possess the means to acquire cognitively stimulating material and experiences for children such as visits to museums or trips (Bradley, & Corwyn, 2002). Material constraints often translate to time constraints: Parents have less time to spend with children, leading to less discipline and supervision of school-work. The

children often have more domestic responsibilities such as childcare roles, domestic duties which impede on their time available for school work (Considine, & Zappalà, 2002).

Additionally, low-SES parents do not always possess the cultural resources to ensure their children's academic success. The cultural deprivation theories are broadly organized around the assumption that lower social class families socialize children with a culture that does not prepare them for schools. Myriad of studies show that this affects children's cognitive abilities as well as their aspirations (Lareau, 2011). In this perspective, parents are seen as sometimes uninterested and insufficiently involved both intellectually and physically in their children's academic success (Feinstein, 1980). They are focused on the barriers to school success and therefore aspire to less (Bautier, Charlot, & Rochex, 1992). School is seen in a negative light, as just a "way to avoid looking stupid" (Ridge, 2007). Parents do not (or cannot) stimulate their children with ideas, useful cultural habits or with elaborate speech which would develop their intellect (Bernstein, 1971). As a consequence, lower-social class students are less motivated and think of themselves as being less capable. Additionally, because low social class employment does not procure a secure and stable environment, their culture is characterized by suboptimal features for school. They are generally more oriented towards the present and concerned with immediate gratification than by deferred gratification (Sugarman, 1967). The uncertainty created by their material constraints can increase parents' rigidity in their educational practices, providing controlling environment for children instead of developing their independence (Lautrey, 1980). In the context of educational transitions, the influential rational action theory (RAT) in sociology proposes that differences in educational attainment are explained by low social class individuals acting rationally to prevent downward mobility, with upward mobility being only a subsidiary aim. Therefore, lower-SES families prefer acting conservatively and minimize risks rather than taking potentially costly chances (Goldthorpe, 1996).

Inversely, not only is the higher-social class culture more suited to respond to the demands of schools, their knowledge of the system makes them more adaptive to changes. Studies on the privilege bias show how higher social class parents investigate in detail schools' reputation and result to strategically provide the best opportunities for their children. If needed, they will mobilize different kinds of capital to smooth their children's path to better education. This can translate into investing money to move to better neighborhoods or use their social capital to influence teachers or administrative staff (Chiu & Khoo, 2005). These strategies become important as the landscape of educational opportunities is changing. This encourage

parents to engage in more academic, practical and emotional work in order to ensure their social advantage (Reay, 2010).

The results of these studies support the argument that lower social class cultures are in some way deficient and/or insufficiently equipped comparatively to higher social class to help their children in school. This line of research considers that social class conditions individuals' worldview, resulting in observable difference in attitudes and beliefs. Lower social class parental goals consequently shape children's behaviors, aspiration and self-concepts. Because of their circumstances, parents teach their children norms and values that do not prepare them for higher education in later life.

1.3. Essentialist explanations

A common feature of both the biological and material/cultural deprivation literature is the reliance on the individual as a unit of analysis. Performance is seen as a reliable indicator of abilities and research is dedicated to uncovering what is missing in people who underperform. This perspective has been criticized for several reasons. Firstly, there are reasons to doubt that performance is an accurate reflection of an individual's innate cognitive abilities. And second, some authors propose that scientists and the general public are cognitively and culturally attracted to individual explanations even when confronted with evidence suggesting otherwise. This has led some authors to conclude that studying the achievement gap with an inter-individual approach is probably limited at best (Autin, 2010).

Amongst the chief criticisms formulated against using performance as a proxy for ability is the fact that the results of these tests have been shown to fluctuate from one context to another (Autin & Croizet, 2012). For instance, performance in working memory tests is sensitive to situations such as sleep deprivation or cognitive fatigue. Other potential source of disturbance are contexts of situational stress which can occur if one is pressured to perform (Baumeister, 1984). Working memory capacity can increase with cognitive training. It can even be improved simply by reminding students that difficulty is not a sign of inability (Autin & Croizet, 2012). Another common criticism is the tendency for tests to closely resemble existing status hierarchies which begs the question if tests can completely be exempt of cultural biases. For example, in the case of social class, some IQ tests items have been argued to be more indicative of a child's family culture than of their intelligence (Kaufman & Kaufman, 1983 cited by Croizet & Millet, 2012).

If performance can be unreliable from one test to another, why is it that essentialist explanations are so easily available to scientists, educator and public alike? There is ample

evidence in psychology suggesting that individuals are cognitively biased towards individual explanations. In addition, there is evidence showing that this bias is heightened in Western countries and even desirable in the educational context. Research in social cognition has shown that when explaining observed behaviors of others, individuals tend to provide a dispositionist/internal account; indeed, they typically focus on factors that can be attributed to the person and tend to neglect external factors (e.g. Ross, Amabile, & Steinmetz, 1977). Studies on the fundamental attribution error have demonstrated that even when participants were made aware of strong situational advantages, they inferred more competence to the person who in appearance displayed more knowledge. Individuals also tend to invoke underlying natures or essences when explaining the personal characteristics of others. This propensity has been termed psychological essentialism (Medin, 1989; Medin & Ortony, 1989). Psychological essentialism can manifest itself in beliefs in genetic or social determinism (Rangel & Keller, 2011). According to Gelman, reasoning in an essentialist way about social categories is assuming that group differences reflect inherently different natures (Gelman, 2003). In a set of 80 traits, people rated “intelligent” as the second most essential trait (Haslam, Bastian, & Bissett, 2004), which reflects the belief that the trait is deeply rooted in the person (inherence), is consistent in time and between situations, impossible to change (immutability), informative about a person’s behavior and characteristic of distinct people (distinctiveness).

The tendency to overly rely on individualist explanations varies across countries. Studies performed in Asian countries have shown that people were less biased towards internal causes (Morris & Peng, 1994; Massuda & Kitayama, 2004). These observations are congruent with results from cross-cultural studies which have remarked that in Western countries, individuals’ perception and reasoning tend to be decontextualized and focused on individuals as separate entities from others (Kitayama & Cohen, 2007). Consequently, individual explanation for the social class gap fits Western conceptions of achievement particularly well (Plaut & Markus, 2005).

Moreover, not only are individuals biased towards these types of explanation, their use is actively encouraged in educational settings. Beauvois and Dubois (1988) called this phenomenon: “the norm of internality”, which they defined as: “the social value of explanations of psychological events (behaviors and reinforcements) that accentuate the actor's weight as a causal factor” (p. 301). Jouffre (2003) observed that elementary school students spontaneously produce more internal explanations as they progress in their curriculum. Dubois (1991) similarly observed that students aged 8 to 16 attribute more internal responses to a “good student” or “a student who is well liked” than to a “bad student” or “they do not like”. When

placed in the paradigm of judges, participants consider that an internal student is more likely to succeed in his or her curriculum than others, who presented a self-fulfilling, modest and external strategy (Dubois, 2000). Teachers who perceive students to be internal (i.e. likely to use internal explanations), judge them more favorably (Dompnier, Pansu, & Bressoux, 2006). Moreover, students appear clear-sighted of this norm. Regardless of the valence of the scholastic event explained (success or failure), students in the self-presentation paradigm see controllable internal (i.e. effort-based) explanations as the most socially valued by teachers (Pansu, Dubois, & Dompnier, 2008).

Internal causal explanations could be socially useful for the social functioning of liberal societies (Dubois, 1994). The norm of internality enables evaluators to assert that individuals' actions are a reflection of who they are and therefore of what they are worth (Beauvois & Le Poutier, 1986). Without the accentuation of the causal weight of the actor, the evaluators would be unable to differentiate the individuals to evaluate them. Concerning the reasons behind the effects, the authors also propose a cultural hypothesis. The norm of internality would be one of the manifestations of a cultural pattern specific to Western liberal societies: individualism (Dubois, 1994). The preference of individuals for internal explanations is the consequence of a phenomenon of cultural impregnation, which is firmly embedded in schools' structure and practices. The authors see it as anchored in evaluative school practices and inseparable from the exercise of power as it is exercised in Western liberal democracies (Dubois & Beauvois, 2005). Students learn in their experiences at school the value of internal explanations when confronted with evaluation situations.

In sum, there are reasons to think that intelligence or school performance are to some extent malleable concepts. Scientists like any other individuals do not exist in a social vacuum, they inherit a socio-cultural background. In individualistic cultures, scientists could be more inclined to study the determinants of achievement with an inter-individual approach rather than focus on other components of this research question (Fiske, Kitayama, Markus, & Nisbett, 1998). But there can be important consequences to disseminating this type of interpretations.

In school, endorsing beliefs that intelligence is a predetermined stable trait can have nefarious effects on students' learning process. Dweck (2000) found that students who endorsed a fixed view of intelligence look for information in their environment to assess their intellectual capacity, leading them to compare themselves to other students and to undertake easier tasks to demonstrate to others (and themselves) that they are able to succeed. Students who possess a growth mindset are less likely to conflate assessment and the demonstration of competence with self-worth. They devote their attention to the development of new competence and compare

their current performance to previous attempts. This mindset encourages them to face challenges in order to develop their level of competence. Consequently, students with growth mindsets tend to fare better when encountering difficulties (Yeager & Dweck, 2012). Recent intervention studies have demonstrated that inducing a growth mindset can have a positive impact on achievement (Yeager et al., 2016).

Furthermore, essentialist beliefs can easily be misused in an intergroup context. Social scientists have long theorized about the potential pitfalls of essentialist reasoning, which can be used to justify or naturalize inequities in social power between groups. It is argued that biological determinism, a form of essentialist reasoning, encourages the perception that current status of groups is representative of where they should and must be (Gould, 1996). In that sense, essentialist reasoning can effectively limit an individual or even a group's potential. Yzerbyt and collaborators also empirically showed that essentialism can promote stereotyping (Yzerbyt, Corneille, & Estrada, 2001; Yzerbyt, Rocher, & Schadron, 1997).

In short, essentializing performance could not only lead to the production of erroneous scientific knowledge but can provide a dangerous terrain for future educational policies. If indeed these analyses exaggerate the role of individuals in the production of their performance, then essentializing performance could encourage self-fulfilling prophecies effects by justifying inequalities and increase rather than decrease their occurrences in schools. However, not all research in the SES achievement gap literature has been devoted to essentialist explanations. Another strand of research looked into how school's structure affect unevenly children of different social classes.

I.4. Social reproduction theory: Social class as a culture

Bourdieu's social reproduction theory remains to this day one of the most influential theories in this line of research. At the center of the theory is the ambitious proposition that instead of acting as a social mobility engine, the educational system is set up to actively reproduce social class inequalities. To explain the mechanisms which lead to the perpetuation of social class inequalities in school, Bourdieu relies on two important concepts: socialization and legitimacy. For Bourdieu, financial means is one of the many capitals transmitted by parents. In addition, children inherit social capital (i.e. resources gathered in the social network), symbolic capital (i.e. resources based on honor or prestige conferred in a social context) and cultural capital, or "cultural competences", which can be further subcategorized into embodied (i.e. way to present oneself), institutionalized (i.e. titles and diplomas) and objectified (i.e. material cultural possessions) cultural capital (Bourdieu & Passeron, 1977).

Most of the accumulation of cultural capital takes place at home. During this socialization process, children develop a “habitus”, or a “socialized subjectivity”, which Bourdieu defines as a: “system of dispositions acquired through implicit or explicit learning that functions as a system of cognitive and bodily schemes.” (Bourdieu, 1980, pp.120-121). In simpler terms, individuals internalize their environment (i.e. norms of the group) through primary and secondary socialization and then externalize it with their habitus (i.e. their way of being and thinking which they perceive as natural). Accordingly, children start school with different habitus which vary according to social class (Bourdieu & Passeron, 1977).

Schools tend to confer academic legitimacy to one type of capital, possessed by children from higher social class, over others. As the school system is run by the dominants in society (those who have succeeded in the educational institution), they possess the power to decide what type of knowledge and behavior is acceptable in the institution, and as agents of the system, their (not necessarily conscious) decisions become institutionalized and legitimized in wider society. Therefore, the school system implicitly dictates the legitimacy of the culture which advantages students whose habitus is adapted to understand and respond to school’s expectations. Conversely, as children from working-class backgrounds do not possess these norms and codes of the school culture, they encounter more difficulty in complying with them and are more likely to fail because of this initial handicap. Bourdieu calls this process of culture legitimation: “cultural arbitrary”. This cultural arbitrary consists of a set of knowledge, ways of being, thinking, standing and speaking, expected in schools that is not explicitly taught (Bourdieu & Passeron, 1977).

The exclusionary practice of providing academic symbolic rewards to socially adapted children is labeled “symbolic violence” by Bourdieu and Passeron (1977). Symbolic violence devalues the culture of the dominated classes, until individuals integrate this hierarchy, subscribe to it and consider it justified. This violence is contained in the institutional structures that condition the construction of individuals. It is unknown to those who exercise it (teachers) as well as to those who undergo it (students). The actions and representations of these individuals, structured by this violence, will then reproduce the institutional conditions necessary for its exercise. Students and teachers build themselves through those norms and practices and expect them from others. They are not aware that these practices constitute symbolic violence.

According to Bourdieu, symbolic violence is reflected in teachers’ practice (i.e. the unconscious behavior that is in conformity with our interest). He understands practice in all domains as a result of both social structures on a particular field (where specific rules apply)

and habitus. Through the habitus, actors behave in accordance with their position in a field (see also Walther, 2014). In the context of school, Bourdieu sees the combination of habitus and social structures (which constitute practice) as favoring the high social class students. As a consequence, students will tend to gravitate towards the position that better suits their own habitus and cultural capital (see also Wakeling, 2009).

Bourdieu further suggests that the school conceals this social selection and institutionalize it through the distribution of diplomas and titles. Children who are selected, are presented as the most deserving or the most gifted, whereas Bourdieu qualifies them as most “adapted” to the school culture. Thus, the school system provides a rationalization of the social hierarchy by appealing to the ideology of “gift” to mask the inequalities of opportunity at the outset (Croizet, Goudeau, Marot, & Millet, 2017; Mugny & Carugati, 1985). Agents themselves would not be conscious of serving the interests of a class but would act on the basis of their representations of academic achievement. As such, essentialized beliefs of intelligence also play an important role in this concealment. The educational institution ignores, even devalues, the purely academic work and the efforts that it takes for “hard-working” students to succeed. The schools’ agents prefer precociousness, which manifests itself in fast learning and is interpreted as a sign of “talent”, or “gift”. Yet, precocity would be one of the markings of “cultural privilege”.

In spite of the system of reproduction, Bourdieu concedes that some lower social class students are still able to succeed educationally, but this, he contends, helps perpetuate the belief that schools operate as a meritocratic system, rather than for the reproduction of social inequality (Dumais, 2002). Bourdieu’s innovative perspective differed from earlier deficit-focused approaches (i.e. literature on material and cultural deprivation) that postulate that low-SES culture provides little intellectual stimulus. Instead the social reproduction theory emphasized that lower social class students were not culturally-deficient, their culture was simply at a greater distance from school standards (Goudeau, Autin, & Croizet, 2017).

Since then, many qualitative and quantitative sociologists have investigated Bourdieu’s concepts with mixed success. His critics consider his concepts too vague and opaque to give rise to a coherent body of operationalization, making it hard to evaluate to what extent his specific assertions are empirically verified (Sullivan, 2002). In spite of these criticisms, interesting results come from studies on cultural capital. For instance, Dumais and Ward (2010) show that cultural capital (through participation in arts activities or use of useful strategies) is a positive predictor of engagement in a higher education degree and Gaddis (2013) shows that cultural capital (through time spent reading in particular) is a predictor of success. DiMaggio

(1982) also shows that when the concept is measured as a scale which includes cultivated self-image, interest in symphony concerts, and participation in cultural activities, it can be a predictor of grades, attendance at college or graduate school, and of marital selection. Importantly, Bourdieu's general concepts have paved the way for more recent waves of empirical studies in sociology of education focusing on the role of schools as an ideological framework promoting the reproduction of inequalities. These studies tend to focus on the discrepancies between schools' explicit objective (i.e. of being an engine of mobility) and the way they actually operate (Dubet & Duru-Bellat, 2004; Duru-Bellat & Tenret, 2009; Duru-Bellat & Tenret, 2012).

1.5. Psychosocial explanations: Context matters

The reach of the social reproduction theory has also transcended disciplinary boundaries, sparking the interests of social psychologists. In the last few years, the literature on the socio-psychological mechanisms of the social class achievement gap has been heavily influenced by his theory. What distinguished social psychologists' study of this issue is their focus on the power of the situation, whose influence can be traced back to founders of the discipline such as Kurt Lewin. Indeed, performance does not necessarily have to be studied with an inter-individual approach, it can be also investigated as a product of a situation. This "power of the situation" refers to the idea that subtle situational factors can have a strong influence on psychological experience and behavior (Nisbett & Ross, 1991). In less than twenty years, hundreds of experimental articles have supported the idea that the success of an intellectual test may fluctuate depending on the a priori characteristics of the situation (Autin, 2010).

Another classic insight of social psychology is the notion that situations can hold different meanings for individuals depending on the status of their social group. Therefore same situation settings, such as those incorporated in classrooms, can have contrasting effects on individuals belonging to different groups. Both of these ideas have come together to produce a fruitful literature which has expanded our understanding of this question by highlighting how much context matters. In this next section, a succinct overview will be presented of the influential studies in social psychology that have gained traction in recent years in the field of social class inequalities.

1.5.1. Performance and teachers' ability beliefs

Amongst the earlier experiments investigating the role of schools in explaining underperformance are those conducted on the Pygmalion or “Self-fulfilling prophecies” effect. These studies shed light on how beliefs about students' abilities could affect their performance in schools or at an intelligence test. Instead of focusing on the role of parents, the objective was to understand how social dynamics in the school settings could also play a role in creating academic success or failure.

In their original study, researchers Rosenthal and Jacobson (1968) gave an intelligence test to a group of elementary students. They then randomly selected a small percentage of the students and told teachers that these students were “high potential”. Even though the statements were not true, teachers believed that the randomly selected students were more intelligent than the others. At the end of the year, Rosenthal and Jacobson retested the same students and found that the randomly assigned students showed more improvement than the control group (i.e. students who had not been labeled). This proved that teachers' expectations could influence students' intellectual development. When going into more details about the specific processes of this effect, the researchers found that teacher's ability beliefs led them to behave differently when they had high expectations. These behaviors were favorably biased towards “high potential” students. These higher expectations would in turn affect how the students perceived themselves and performed independently of their abilities. The potential ramifications of the Pygmalion study are interesting as they can be applied to processes that occur with other types of labels and categorizations. Without explicitly referring to social class, this classic study has been informative in pointing out how initial randomly allocated inequalities could be further reproduced in the school setting. As subsequent studies found that academic expectations of success are related to students' group membership (social class included), it is conceivable that the Pygmalion effect could disproportionately affect low social class students (Cooper, Baron, & Lowe, 1975).

1.5.2. Performance and self-efficacy

Beliefs about one's own ability to achieve goals, or as it referred to in the literature: self-efficacy, is considered to be an important component of academic success (Bandura 1977, 1997). Indeed, the social cognitive theory developed by Bandura argues that self-efficacy predicts not only school engagement, but also persistence when experiencing difficulties, and the development of cognitive competencies (Multon, Brown, & Lent. 1991). This suggest that when a child is faced with a challenging task, her/his level of self-efficacy can become a strong

indicator of whether s/he will succeed, beyond their individual abilities. However, many authors think that all children are not equal when it comes to their level of self-efficacy as family values and practices can have a strong effect on its development (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). More recently, some researchers have proposed that particularly in the school context where internality and meritocracy are valued, low status groups are likely to internalize their position in the hierarchy and develop a sense of their own efficacy that is congruent with that position in the system (Wiederkehr, Darnon, Chazal, Guimond, & Martinot, 2015). They hypothesized that the social class achievement gap could partly be explained by the internalization of a low sense of self-efficacy and affect these students' performance. They tested whether the internalization of social class inferiority into personal characteristics (i.e. self-efficacy) could explain decreases in performance. The results of two studies indicated that students' SES predicted both self-efficacy and school performances (Wiederkehr et al., 2015). Moreover, self-efficacy was found to be the mediating link between SES and mathematics performance. Thus, an important psychological resource (i.e. self-efficacy) can depend on social status and contribute to explain low-SES students' poor performance in school. Taken together these studies show how psychological dynamics in the school system can in the long run affect student self-perceptions and expectations, creating a stigmatized identity, which then limit their ability to reach academic success. Notably, earlier researchers had proved that internalized stigma was not necessarily the only reason why lower-SES students underperformed. A long research line in psychology has determined that performance can be interfered with by creating contexts which lead these students to underperform.

1.5.3. Performance, performance history and visibility settings

The power of the situation on performance was well demonstrated in a set of studies conducted by Monteil and collaborators. Their work determined that cognitive performance was heavily influenced by the context in which performance was produced (Monteil, 1988; Monteil & Huguet, 1993). More specifically, they argued that an individual's performance was dependent on self-related beliefs or autobiographical knowledge associated with the context in which the task is presented. In their first study, pre-selected good students were asked to complete a filler task. These students were then randomly selected to receive a success or failure feedback and were told they would pass a biology test which, depending on the experimental condition, was either going to take place publicly or anonymously. They found that the visibility of the evaluation setting affected students' performance as a function of the type of feedback received. Participants who received a positive feedback performed better when they assumed

that the test was public then when they thought the test was anonymous. On the other hand, participants who received a negative feedback fared much better when the test was thought to be anonymous rather than public. When participants thought they had failed, the visibility of the next test led them to underperform. The effect was reversed for participants who had supposedly succeeded: the perspective of publicly demonstrating their ability increased their performance. As all the participants were originally good students, the differences in performance could not be attributed to the participants' innate abilities. These results also challenged a long-held assumption in education that competition deriving from social comparison was necessarily conducive to better results for high-performing students.

Their follow-up study tested whether perception of tasks could also impact performance. They theorized that educational tasks, far from being culturally neutral, were hierarchized in order of prestige by teachers, parents and students alike despite the lack of scientific evidence demonstrating their comparative intellectual worth. They asked participants to reproduce from memory a complex graphic figure. The task was either presented as measuring geometry or drawing skills (Huguet, Brunot, & Monteil, 2001). Results indicated that presentation of the task interacted with participants' previous academic level. High-achievers performed better in the prestigious context condition and the opposite was true for low-achievers. Importantly, whereas there was no difference of performance between high and low achievers in the drawing condition, low achievers underperformed comparatively to high-achievers in the geometry condition, suggesting that low-achievers were affected by their representation of the task. The authors concluded that students' cognitive and attentional resources depend on how consistent the present context is with self-related beliefs, which are based on past experiences. In sum, performance should not only be interpreted as the direct product of a student's ability or of a task's difficulty but rather as the result of educational contexts which resonate with students' academic performance history.

1.5.4. "It's in the air": Stereotype threat

The idea that evaluative situations activate explicit or implicit beliefs about the self and induce emotions or anxiety states which can interfere with one's performance is also a central component of the stereotype threat literature. Stereotype threat however focuses on the effects of belonging to groups associated with negative stereotypes of competence. Specifically stereotype threat involves a situational activation of three concepts: the concept of self, the concept of capacity in the performance domain, and the concept of the group. Stereotype threat would appear in situation which activates oppositional relations between these three concepts,

creating a conflict (Schmader, Johns, & Forbes, 2008). In their seminal paper, Steele and Aronson (1995) proposed that when a task is presented as being diagnostic of an ability associated with a negative group stereotype, members of this group, worried about confirming said stereotype, would underperform. For instance, when African-Americans were led to believe that the task (the GRE, a complex verbal aptitude test) they were undertaking was diagnostic of their intellectual ability, their performance was comparatively worse than when the task was presented as testing individuals' mnemonic attention. The application of the theory was widely extended to a multitude of groups and tasks (e.g. women and mathematics or white men and athletic performance) further confirming that any individual could potentially experience stereotype threat as long as they were performing a task that was said to measure a dimension targeted by a negative stereotype. It was notably replicated on students of varying social class by Croizet and Claire (1998). Results confirmed the hypothesis that lower social class students' performance was lower than that of higher social class students only when the test was presented as being diagnostic of individual's intellectual abilities, thereby providing evidence for the existence (and interfering effect) of a negative stereotype of lower social class students' intelligence in the university context. One study showed that children of lower social class can already experience signs of stereotype threat at the age of 6 (Désert, Préaux, & Jund, 2009).

Many underlying mechanisms have been put forward to explain the effect. Those can be classified as either motivational or affective/cognitive. For instance, stereotype threat has been implicated in affecting participants' efforts and motivation, self-handicapping behaviors, vigilance, dejection and achievement goals, all of which can be interpreted as motivational mechanisms (Pennington, Heim, Levy, & Larkin, 2016). As for the cognitive impact of stereotype threat, in condition of stereotype threat, individuals were shown to experience mental overcharge and/or increases in anxiety, negative thoughts and self-doubts (Harrison, Stevens, Monty, & Coakley, 2006; for a review see Schmader et al., 2008). From a methodological standpoint, stereotype threat emerges on tasks that are perceived as difficult or demanding which can vary depending on an individual working memory (Régner et al., 2010). It is also more likely to occur when individuals are conscious of the stigma attached to the group, strongly identify with group or when they believe the stereotypes are true (Brown & Pinel, 2003; Davies, Aronson, & Salinas, 2006; Schmader, 2002; Schmader, Johns, & Barquissau, 2004). Some research also suggests that domain identification is an important prerequisite of stereotype threat effects (Pennington et al., 2016).

The theory was particularly innovative as it suggested that the source of the threat was situational and therefore could be in theory removed. This meant that, contrary to what was largely expected at the time, lower performance of stigmatized group members was not caused by the internalization of the negative stereotype but was due to their activation in specific contexts. The authors were insistent on reminding researchers that as any given culture was embedded with stereotypes, this meant that most contexts involving evaluation were by default potentially threatening to those individuals.

It should be noted that a recent paper presented evidence for the existence of a publication bias in this literature. As a result, some researchers have been questioning the reliability of the effects size reported on the subject (Flore & Wicherts, 2015). A large-scale registered replication report is being conducted by Wicherts, with the collaboration of some of the original authors to clarify whether these concerns are valid (Engber & Aronczyk, 2017). Nonetheless, the main principle behind those experiments was to show that classroom settings and practices are not neutral settings which allow for true potential and ability to shine through. Rather, these settings worked in favor of advantaged group members. Importantly, some of these studies showed that stigmatized students were able in the right circumstances to perform at the same level as advantaged students, thereby showcasing that underperformance is not necessarily the product of an internalization of inferiority, but can temporarily affect performance.

1.5.5. The institutionalization of symbolic violence: Classrooms practices

Building on these theoretical premises, Goudeau and Croizet investigated how these effects in the educational system served to reproduce social class inequalities (Goudeau & Croizet, 2017). Their work, inspired by Bourdieu's social reproduction theory, suggests that classroom practices can contribute to the institutionalization of symbolic violence. In their perspective, academic norms and values reflect to a certain extent cultural arbitrariness, which is for the most part ignored by the educational system's discourse. By avoiding to explicitly state the arbitrariness of these norms, the school system communicates that some forms of languages, school knowledge, bodily postures and attitudes are more desirable and inherently superior to others. As higher social class individuals share values which are closer to these academic norms than lower social class individuals, their children start school with an unfair advantage. As a consequence, higher social class children get to feel at ease and "at their place" because the expected academic behaviors are in accordance with the ones taught at home, whereas lower social class students have to understand that their behavior is not valued in this

context, identify what are the specific expectations and try to adapt in a way that looks and feels natural (Goudeau & Croizet, 2017). In other words, lower social class children have to change their habitus if they want to be perceived positively at school. Goudeau & Croizet (2017) further suggest that structuring classroom practices around the visibility of performance can contribute to processes of social comparison which disserve low social class students' performance. Indeed, another byproduct of the invisibility of the privileges is that classroom settings appear to be fair. Consequently, when students are motivated to evaluate their competence and engage in social comparison, any other student become a meaningful target of comparison. Paradoxically, it is the appearance of fairness that enables unfair comparison. The differences in competence and performance are perceived as reflecting differences in ability instead of differences in cultural capital and become threatening for lower social class student's self-image. Especially as the pressure to succeed in school encourages the motivation to self-evaluate (Muller, Fayant, & Lastrego, 2011).

Goudeau and Croizet (2017) proved these theoretical assertions in a series of experimental studies. In the first study, the visibility of students' performance was manipulated by asking student to raise their hands as soon as they finished completing a test. As predicted, students from working-class background underperformed when the performance was rendered visible by the classroom setting. In the next study, the same paradigm was tested but the researchers experimentally created disadvantage by manipulating the students' level of familiarity with an academic standard in the form of a coding task. The students that were experimentally disadvantaged underperformed when students were asked to raise their hand upon task completion. Finally, their last study showed that when students were made aware of their disadvantage, their performance did not suffer from visibility. These results confirmed that classroom settings could contribute to the social class achievement gap by disregarding the advantages conferred to some students in the educational system (Goudeau & Croizet, 2017). Notably, their work demonstrates how schools can structure classroom practices to affect educational equality.

1.5.6. Institutional values of the education system: Cultural Mismatch

Also inspired by Bourdieu's social reproduction theory, Stephens and collaborators provide an institutional account of the causes and consequences of the social class achievement gap at university by proposing to apply a socio-cultural approach to social class (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). The socio-cultural approach to social class considers that in addition to differences in rank, belonging to a social class exposes individuals

to sociocultural contexts (i.e. specific material and social conditions) which shape the self and corresponding patterns of thinking, feeling and acting (Stephens, Markus, & Townsend, 2007). The socio-cultural self model of behavior suggest that individuals' attitudes and behaviors heavily rely on the socialization process. Children are taught by their parents the norms and values of their respected communities, leading to an internalization and enactment of attitudinal and behavioral expectations with regards to the self (and how the self relates to other and the context; Kraus & Stephens, 2012).

In addition to the primary socialization process, the socio-cultural self model of behavior considers that everyday experiences of norms and practices, which tend to systemically differ between social classes, are also a central component of the construction of the self. Individuals internalize the norms and expectations that come with the experience of institutional structures and practices in a manner that informs their experience of self (Goudeau et al., 2017). These experiences with institutions as well as other individuals lead to the development of a subjective perception of their place in the hierarchy which also influences their way of feeling, thinking and behaving (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). In short, the sociocultural approach conceives of structures and individuals as inseparable mutually constituting forces that shape individuals' model of self (Stephens, Markus, Fryberg, 2012).

In their perspective, repeated experiences of material constraints reduce the possibility for individuals to express personal choice and control and render the possession of close social relationships very valuable. By regularly experiencing uncertainty, and unpredictability, lower social class individuals have to turn to others and will come to understand themselves as connected to others and as responsive to the social environment. In contrast, in higher social class context, individuals are freer to pursue their own goals and interests. As the situation does not require them to systematically focus on others, it enables them to experience their environment as independent agents (Kraus & Stephens, 2012). As a consequence, individuals evolve in contexts that lead them to develop either independent or interdependent models of selves. Specifically, in the school context, these independent or interdependent models of self guide students' behavior and shape their school experience in a manner that can be important for their academic success. For instance, high-SES students may find it easier to express their individual needs and goals with teachers, leading them to be seen as engaged and curious; while low-SES students may feel more comfortable keeping quiet as a form of deference and to avoid being perceived as a burden (Stephens, Markus, & Phillips, 2014).

Schools aren't culturally neutral spaces either, according to the sociocultural approach. Educational contexts should also be conceptualized as realities that embody culturally-situated

values and practices (Croizet et al., 2017). These contexts can be in congruence or in mismatch with the values and norms of individuals depending on their social group. The cultural mismatch theory was supported through a set of experiments designed to test its central hypothesis: Universities display and implement independent norms and values which correspond to higher social class models of self. Experiencing a cultural match between one's values and the institution's values will allow individuals to feel they belong and better focus on tasks. Inversely, a cultural mismatch increases feelings of threats and doubt, making tasks harder to achieve (Stephens et al., 2012). The researchers asked higher-rank university administrative members to choose in a list of independent and interdependent values, which best reflected their universities' norms and expectations. They found that independent values were preferred to interdependent values. To develop and express ideas was considered more important to succeed in their institution than to listen to others or follow the rules. When first-year university students were to list the reasons for attending university, continuing-generation students (i.e. at least one parent went to university) listed more independent than interdependent motivations and inversely for first-generation students (i.e. neither parent went to university). This first step established that university institutions' values and norms were more in line with the continuing-generation students. To test if a cultural mismatch could lead to underperformance, a welcome university letter was experimentally manipulated to either reflect independent or interdependent norms and sent to high-school students about to start the university. After reading the letter, participants completed an anagram task. The results replicated the classic achievement gap between first and continuing-generations in the "independent message" condition. When the letter presented an interdependent message of the university's norm, there was no gap in performance.

Cultural mismatch has been shown in a longitudinal study to persist over time for first-generation students and predicts lower grades upon graduation (Phillips, Stephens, Townsend, & Goudeau, 2016). Other studies with similar paradigms also measured physiological and psychological responses to cultural mismatch. They found that in independent university contexts, first-generation students displayed increased cortisol secretions (which are associated to stress; Dickerson & Kemeny, 2004) and negative emotions comparatively to continuing-generations (Stephens, Townsend, Markus, & Phillips, 2012). These results are congruent with previous qualitative studies showing that lower social class students in higher education institutions feel like they do not belong in universities, causing them to question their chances of success when they perform tasks (Johnson, Richeson, & Finkel, 2011, Ostrove & Long, 2007).

Taken together, the work of Goudeau & Croizet (2017) and Stephens and collaborators present a convincing case for the direct role of institutionalized symbolic violence on low social class students' underachievement (Stephens et al., 2012). Both lines of research demonstrate at different educational stages that implicit educational standards, which are aligned with daily experiences and familiar expectations of first-generation or continuing-generation students, provide them with invisible privileges in the school setting. Simultaneously, as these advantages go unacknowledged, they lead first-generation students to assume that they are responsible for trailing behind. These taken for granted set of institutional cultural practices and values contribute to the academic difficulties encountered by lower social-class students in these unfamiliar normative contexts (Croizet et al., 2017). Additionally, by shedding light on the role of institutions in structuring student success, the cultural mismatch theory illustrates how culturally-embedded institutional messages are interpreted to make sense of one's place in the system.

Consistent with this institutional approach, a recent study conducted by Darnon and collaborators (2017) investigated the link between educational ideological discourse and the reproduction of the social class gap. Fifth-grade students participated in their experiment which primed school meritocracy. Comparatively to the neutral condition, the merit prime condition increased the SES achievement gap. They additionally found that belief in school meritocracy was a mediator of the effect, thereby confirming the causal impact of this widespread educational ideology on the reproduction of inequalities (Darnon, Wiederkehr, Dompnier, & Martinot, 2018).

This renewed focus on the role of educational structures in performance has been followed by other research in the field showing that students' academic motivation and self-concepts can be affected by institutional messages. For instance, Browman & Destin (2016) drew from principles of identity-based motivation theory (Oyserman & Destin, 2010) and the motivational and self-relevant shift perspective to predict that situational context would affect feeling that one is able to perform in a domain. Thus, if situational cues suggest that a domain-relevant context is a good fit for a person, that person has a better chance of feeling more confident in said domain, having high feelings of self-efficacy, and being willing to pursue domain-relevant goals (i.e. greater domain-relevant motivation). They conducted two experiments demonstrating that when lower social class students were exposed to cues indicative of the institution's warmth toward socio-economic diversity, they displayed greater academic efficacy, expectations and implicit associations with high academic achievements. The third experiment further determined that students perceived their institution to be more

diverse socioeconomically, as well as felt that their background was a better match with the other students when exposed to warmth cues comparatively to chillier institutional messages. These studies demonstrate that educational institutions communicate sometimes inadvertently the norms they value, affecting students' perceptions of belonging and ability to perform in those institutions.

I.5.7. The intervention path

These recent findings emerging from the social class achievement gap literature has encouraged researchers to look for solutions aimed at reducing the gap. Dittman and Stephens (2017) identify three major intervention trends in the literature: interventions looking at individuals, structures and construal (i.e. the meaning derived from the experience of individuals in structures). The first two intervention trends aim at providing better material and educational resources (such as access to good teachers) and improve individual skills. By intervening directly on these factors, these researchers want to enhance those students' performance to increase their chance of success. Social-psychological studies, specifically those on the interfering effect of situational and institutional clues, fostered the development of the third line of interventions on construals. These interventions are geared towards changing the meaning of the evaluative situation to protect low-SES students from underperforming.

Interventions on construals aim at changing the meaning of the experiences for the individual and involve some form of reinterpretation of the individual's self-image or feelings (image of self or group, emotions, interpretation of stress), of the meaning of the evaluation (attribution for success or failure, growth mindset, de-essentialization of performance), or their perception of contextual fit (social-belonging, difference-education). The ultimate goal is to render students more resilient in the face of academic difficulty by adjusting their psychological understanding of the different components of performance to avoid them assuming that they are unable to succeed (Aronson, Fried, & Good, 2002; Paunesku et al., 2015; Sherman et al., 2013; Walton & Cohen, 2007; Walton & Cohen, 2011; Yeager et al., 2016a; Yeager et al., 2016b).

One example of a construal intervention is the difference-education intervention designed by Stephens and collaborators in which they found that providing information for academic success worked better for increasing lower social-class students' grade when the information was presented as social class-specific advice than when it was presented as generic academic advice. The objective of the experimental condition was to convey how social class could impact one's life and performance and therefore to provide a framework that gives

meaning and understanding to the difficulties experienced by these students. Students improve as they realize that their feelings of “being at the wrong place” are not due to their incompetence but are caused by their comparative unfamiliarity with the university context (Stephens, Hamedani, & Destin, 2014).

The important take-away of these interventions is that current educational environments are structured in a manner which leads lower-social class students to think that they are not meant for academic success, and to ultimately underperform. These intervention studies provide evidence that the school system bears a responsibility in the academic difficulties experienced by these students. An important point to mention is that these interventions implicitly rely on the assumption that structural conditions for academic success are met. Many studies are conducted on individuals which have already passed rigorous selection processes (i.e. undergraduate students) and presumably were in structural conditions allowing them to arrive at this stage. As mentioned by Dittman and Stephens (2017), for construal interventions effects to be meaningful, it is vital to ensure that structural conditions are provided by the educational system to bring these students to this point.

Another limitation of construal intervention is their scope. By focusing on the students themselves, these interventions can only remain short-term solutions. Continuously changing individuals’ understanding of the situation will prove pointless if no attention is paid to why the education system enables those construals to arise in the first place. Indeed, the fact that the education system is infused with ideologies that favor advantaged group members begs the question of what the role is that society has assigned to this system. By promoting essentialist values and ignoring the disadvantages of some, the educational system protects its legitimacy as an engine for social mobility at the expense of lower social class students who are led to feel that they have failed (Croizet et al., 2017). Although interventions are extremely important to relieve students from encumbering preoccupations, it is equally important to uncover what structural components contribute directly to the achievement gap to identify the systemic changes that could provide lasting benefits.

1.5.8. Limitations of the current explanations

In the last twenty years, inspired by Bourdieu’s social reproduction theory, social psychology’s contribution to the literature on the social class achievement gap has been to experimentally show how characteristics of the school system create meaning and communicate intentions, expectations, goals and values to students which can at times interfere with their construal and impact their performance. Importantly, they demonstrated that the way school settings are

structured, which traditionally had been set up to only educate the elite, still have an impact at the intergroup level as they disproportionately affect lower social class students; this despite the expansion of the educational system of the last century. These studies are vital to the field as they show the dynamic relationship that exists between individual (such as personality or motivation) and institutional factors, the interaction of which shapes students' cognition and behavior (Kraus & Park, 2017). This line of research proved that explanations of material or cultural deprivation (i.e. deficitary approaches; Goudeau et al., 2017) could not fully account for student's inability to perform.

Until now however, the focus of the achievement gap literature in social psychology has been limited to students' (in)ability to demonstrate their skills and performance. Despite an emphasis in the latest years towards understanding the effects of institutions, students' performance remains the most common outcome measure to explain social class inequalities at school. The underlying implication of these studies being that ultimately lower social class students, constrained by the structural pressures, will objectively underperform in some contexts. In this literature, students' performance, as it is measured, is implied to be an accurate description of the individual demonstration of skills in that specific context. These studies do not directly suggest that performance in itself is actively shaped by evaluators. Current evidence shows that schools are providing educational contexts which harm lower social class individuals' ability to reach their full potential, but they do not consider whether schools are actively hampering these students' academic success.

To move this line of research further, some researchers have recently suggested looking beyond individual agency and specifically paying closer attention to how the structural factors such as institutional practices work together with behavior to transform differences of privilege into differences of ability (Croizet & Millet, 2012; Kraus & Park, 2017). In line with these propositions, we think that to accurately explain the delicate interplay between structural forces and the individual, psychological research on social class has to go beyond studying the effects on students to see whether the source of the gap solely rests on the individual who performs or whether, as sociologists have proposed (but not experimentally demonstrated), institutions actively play a role in creating a gap. Or as Di Maggio implied: if "institutions after all, do much of society's dirty work in reproducing privilege and disadvantages" (p.15, cited by Croizet et al., 2017). Specifically, two important issues in this area still need to be addressed: First, can social class inequalities at school be reduced to the achievement gap? In other words, when performance is equal, can we expect lower social class students to receive the same academic opportunities? And second, should there be bias from teachers, are institutions

contributing to its creation? Or can bias against lower social class students be interpreted as an irregularity in an otherwise meritocratic system? Importantly, if institutions do create inequalities, can it be demonstrated at teachers' individual level? How do individual and institutional level factors intersect to produce social class inequalities?

To answer these questions, we draw from the recent social psychology research examining the effect of institutions and classrooms practices on the maintenance of the social class achievement gap to propose an investigation of the institutional mechanisms explaining the creation of an achievement gap by teachers. We think that if school's ideological climate and practices affects students' behavior, it is likely to also inform teachers of their role to play in the institution. Moreover, we suggest that institutional practices convey to teachers the specific intentions that underlie the original intent of the practices. By bridging these two propositions together, we suggest that the structure of the educational system through institutional practices will impact students' academic achievement by shaping teachers' behavior.

2. Structure of the educational system: Institutional practices and social inequalities

The study of institutional structures may be recent in the experimental social psychology literature on the social class achievement gap, yet traditionally sociologists consider it to be one of fundamental aspect of human behavior. Researchers define institutional structure (or sometimes more widely referred to as social structures) as: “comprising those cultural or normative patterns that define the expectations of agents hold about each other's behaviour and that organize their enduring relations with each other.” (Lopez & Scott, 2000, p. 3). Founders of the discipline such as Durkheim thought it central to articulate social structure and individual consideration to explain conduct. In his perspective, individuals do act freely according to their own dispositions, but their conduct start resembling one another when pressured by social forces. “To be sure, the *external* events which constitute the *superficial* part of social life vary from one people to another, just as each individual has his own history, although the bases of physical and moral organizations are the same for all. But when one *comes into contact* with social phenomena, one is on the contrary, surprised by the astonishing regularity with which they occur in the same circumstances.” (Durkheim, 1897, p. 94). This logic has permeated through a vast literature in the subfield of education attempting to quantify and quality the impact of educational structures on students or teachers (Dreeben, 2000).

This chapter will serve to demonstrate evidence in sociology and educational sciences for ways in which educational structures, through their practices and their underlying function in the institution, affect the distribution of educational opportunity and will conclude with the presentation of the interdisciplinary approaches from which we draw to integrate the perspective of the agents (i.e. teachers) in the production of SES inequalities.

2.1. Two goals of the educational system

These attempts at clarifying the impact of educational structures eventually inform a larger debate among sociologists of education over whether *in fine* the educational system as an institution acts as a tool to insure social mobility or whether it serves to perpetuate the social class hierarchy (Reay, 2010). This dispute partly reflects the complexity of this issue: At what specific point do we consider that the overlap between initial status inequalities and the academic hierarchy implies that school is not an engine of social mobility? Should equality be measured as an outcome or a process? But these questions not only highlight subjective preferences in justice philosophies (i.e. equality enforced according to procedural or corrective justice principles), they also point to the ambiguity in the functions that have historically been

assigned to the institution by society and scientists alike (Gamoran, 2010). It is generally agreed that since the development of mass education, schools mainly serve two, at times competing, social functions (Autin, Batruch, & Butera, 2015; Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Jury, Smeding, & Darnon, 2015; Madero Cabib & Madero Cabib, 2013). The first is to educate future citizen by imparting all of them with similar knowledge. The second is to prepare students for their future social position in the labor market by sorting and ranking them against one another.

On the one side, early sociologists from the functionalist approach saw the alliance of the first function with the second as compatible and necessary to ensure a form of social order and cohesion (Coleman et al., 1966; Durkheim, 1922; Parsons, 1959). According to the functionalist perspective, society consists of a system of interconnected parts which together harmoniously ensure the stability and balance of society as a whole. Each institution provides a function for the equilibrium of society (Mooney, Knox, & Schacht, 2007). These pioneering sociologists considered that differentiated educational systems served a greater purpose of societal stability by providing adequately skilled citizen for the labor market (Madero Cabib & Madero Cabib, 2013). It assumed that school provided teaching and that the distribution of rewards was appropriately governed by the needs of the wider society (Dornbusch, Glasgow, & Lin, 1996). This approach has been criticized for overlooking the role of schools in the reproduction of inequalities (Bol, Witschge, Van de Werfhorst, & Dronkers, 2014). Others such as Blau and Duncan (1967) in their seminal book *The American Occupational Structure* propose that both propositions were true: education provides upward mobility as well as reproduce status from one generation to another (Blau & Duncan, 1967). This theoretical approach, directly inspired by functionalists argued that in industrial societies upward mobility would overall predominate over downward mobility (Falcon, 2013). Finally, structuralists were skeptical that schools really could simultaneously fulfill both objectives. Indeed, structuralists perceived all institutions as ideological devices of the State which ensure the reproduction of relations of power and that legitimizes unequal economic and political social order (Madero Cabib & Madero Cabib, 2013). In their view, education's main social function is the social differentiation of educational opportunities (Boudon, 1973; Bourdieu & Passeron, 1977). At any rate, educational systems operate at the crossroads of a social dilemma: to focus on the promotion of democratic equality by equalizing the life chances of their students or stratify them and increase differentiation to equip them for differentiated social positions (Van de Werfhorst & Mijs, 2010).

2.1.1. Educational function

The last century has seen the rise of education as a universal standardized and rationalized institution (Boli, Ramirez, & Meyer, 1985). Instead of educating small fraction of the population, school's objective turned to imparting skills to all citizens. Even in higher education institutions, this phenomena can be observed: while only 1 percent of college-age people attended a higher education institution in 1900, this number grew to 20 percent of the cohort worldwide in 2000 (Banks, 2001; Schofer & Meyer, 2005). The individual right to education was officially endorsed in 1948 in the Universal Declaration of Human Rights, stating that: "Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education and shall be equally accessible to all on the basis of merit. Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace. Parents have a prior right to choose the kind of education that shall be given to their children." (UN General Assembly, 1948, art. 26).

This legal article sheds light on the shared ideological assumptions about the role of education in society and of its perceived social benefits. First, it conceptualizes education as an individual right instead of a privilege and, to ensure that right, it concludes that educational opportunities for children need to be provided equally, regardless of their background of origin. Second, the framing of education in terms of individual right also highlights the perceived benefits it is seen to provide individuals (i.e. develop human personality). Third, in addition to its value for individuals, education was thought to be useful for societies as a whole (i.e. it shall promote understanding, tolerance and friendship among all). Indeed, one of the core ideological principle guiding the development of mass education was the idea that democratic societies needed to create citizens who are capable of participating in the political process. Internationally, education could create a common socialization process which would favor harmonious inter-group relations. Nowadays, it is commonly agreed that educational systems' primary objective remains to impart knowledge and skills to all individuals in order to help each of them to: "integrate into the social, professional and civic life." (Art. 5: buts de l'école of the Loi sur l'enseignement obligatoire of the canton of Vaud, Switzerland).

2.1.2. Selection function

School's second function is to provide society with a legitimate hierarchy, which will be the basis of one's social class, by selecting the best and most deserving students (Deutsch, 1979). This role became particularly relevant in a context of increased competition over limited symbolic and material resources, which were once reserved to a restricted number of elite students. The purpose of differentiation in educational systems is thought to be a byproduct of both growing needs for technical and vocational skills on the labor market and the need to emphasize distance between social groups by institutionalizing social class differences (Bol et al., 2014). As prestigious jobs are scarce and valuable, schools allocate resources to prepare only a worthy subset of students for these positions (Bol et al., 2014). Those with high achievement will be trained for the most important jobs and will receive the highest income. Those who achieve the least, will be provided with the least intellectually demanding jobs and, as a consequence, with the lowest income. Schools are accordingly structured at all stages of the educational system to be able to detect, sort and train students for those different academic trajectories (OECD, 2013b). The most common tools used to implement this selection function are those enabling teachers to rank students (i.e. normative assessment) and to sort them in different curricula (i.e. tracking; Carson, 2007). In this section, we will discuss the costs and benefits of using those academic practices. We will specifically review the evidence demonstrating their ability to fulfill the objectives of both functions of education (i.e. their effects on learning, motivation and on stratification).

2.1.2.1. Assessment practices

To evaluate students' level of competence, the educational system primarily relies on students' grades or other products of normative assessment (i.e. such as letters in alphabetical order, percentages, or value judgments) as an indicator. This form of assessment is widely used in the education system (Hamilton, 2003). The explicit aim of normative assessment is to provide students and parents with clear information about their level of competence (Williams, Pollack & Ferguson, 1975). However, when compared to other assessment methods, normative assessment presents an additional feature which is to create a visible and quantifiable way of evaluating students' performance. On the one hand, the visibility created by this method is its main allure, and on the other, it can become its main shortcoming (Pulfrey, Buchs, & Butera, 2011). This specific feature of normative assessment gives the possibility to compare and rank the students. Whereas this characteristic can be helpful in a professional context, its advantages tend to disappear when used on students who are still in the

process of learning. Many scholars who have discussed the implications of normative assessment for learning find that there are some disadvantages to its use (Butler & Nisan, 1986; Cliffordson, 2008; Jasso & Resh, 2002).

2.1.2.1.1. Normative assessment

2.1.2.1.1.1. Effects of social comparison on learning and performance

The high visibility of grades (or of other forms of normative assessment) allows students to easily compare themselves with each other. The very way in which learning and evaluation situations are structured in classrooms often favors this comparison process (Pepitone, 1972; Rosenholtz & Simpson, 1984). Students work on the same tasks at the same time with identical instructions. Even though comparison processes are triggered automatically by the mere presence of others, the visibility of differences in performance afforded by normative assessment exacerbate social comparison among students comparatively to their assessment methods (Goudeau, 2016; Hayek, Toma, Oberlé, & Butera, 2014).

On the one hand, social comparison has been known to produce positive outcomes (Festinger, 1954). For instance, a study conducted by Huguet, Dumas, Monteil and Genestoux (2001) has shown that students who engage in modest upward comparison presented a higher level of improvement over the school year when compared to students who did not compare themselves. Indeed, engaging in upward comparisons could be beneficial for performance as it could provide useful information about how to improve (see also Butera & Darnon, 2017; Buunk & Ybema, 1997; Taylor & Lobel, 1989). This type of comparison could also lead students to set higher standards of success, which in turn would increase motivation to make the necessary efforts to achieve these new goals. However, the beneficial effects of upward comparison seem limited to chosen comparisons (Dumas & Huguet, 2011, Major, Testa, & Bylsma, 1991). Forced comparisons on the other hand, appear to be threatening for self-image (Huguet et al., 2009; Muller & Butera, 2007). In a competitive context, social comparison can elicit a threat to the students' feeling of self-competence (Mugny, Butera, & Falomir, 2001; Selimbegovic, Quiamzade, Chatard, Mugny, & Fluri, 2007). This phenomenon, called competence threat, has been shown to take place in situations in which social comparison is presented as being the result of competence disparities (i.e. some students are more competent than others) instead of a way to focus on the epistemic value of diverse answers from students (Butera, Darnon, Buchs, & Muller, 2006). This leads students to engage their attention on worries about their own competence and self-worth when they could be devoting all of their cognitive resources on the task (Buchs, Butera, Mugny, & Darnon, 2004). The competence

threat increasingly occurs if the target of the upward comparison is considered a standard (Muller & Fayant, 2010). Moreover, the visibility provided by normative assessment can also be detrimental to low-achieving students' performance. As previously mentioned, Monteil & Huguet (1993) demonstrated that when assessment is visible, the performance of low-achievers is reduced compared to that of high-achievers. The difference of performance disappears when visibility of assessment is removed. In short, the advantages provided by normative assessment (i.e. emphasis on social comparison) may be useful for selective educational systems as it provides an easily identifiable hierarchy, but it can also hold negative consequences for students who could be focusing their attention on comparing themselves to other students rather than concentrate on the task at hand.

2.1.2.1.1.2. Effects of grades on motivation and competitive behaviors

Furthermore, social comparison, induced by normative assessment, reduces perceptions of task autonomy and intrinsic motivations and encourages performance-avoidance goals, which are associated with a host of maladaptive consequences in school (Pulfrey et al., 2011; Pulfrey, Darnon, & Butera, 2013). Specifically, performance-avoidance goals are linked to negative effects on self-esteem, perception of control and performance (Cury, Elliot, Da Fonseca, & Moller, 2006; Harackiewicz, Durik, Barron, Linnenbrick, & Tauer, 2008). Therefore, instead of promoting improvement, task autonomy and focus on the task, all of which are important factors to guarantee good learning conditions, normative assessment, through social comparison, enhances comparison-related considerations. Specifically, the use of grades is associated with perception of competitive social comparisons. In a series of studies conducted by Hayek and colleagues, the presence of grades interfered with the capacity of individuals to consider information coming from others in an unbiased way and hampers information sharing (i.e. cooperatively useful behaviors) in cooperative tasks (Hayek et al., 2014; Hayek, Toma, Oberlé, & Butera, 2015; Hayek, Toma, Oberlé, Guidotti, & Butera, 2017).

2.1.2.1.1.3. Effects on intergroup stratification

The visibility provided by normative assessment might not only hinder individuals' levels of performance but can also have an effect on intergroup relations and groups' level of performance. In the quest for social recognition, social groups also compete over available academic resources. In the current educational system, grades also represent a form of rewards which provide students with status, and privileges. Those privileges can be symbolic (i.e. good reputation) or material (i.e. academic opportunities in the tracking system; Felouzis &

Charmillot, 2013). These academic rewards are made visible by normative assessment, allowing others to observe which social groups are able to succeed and are given high status.

As mentioned in the previous chapter, current school settings and expectations can generate differences in groups' level of achievement (Croizet & Claire, 1998; Darnon et al., 2017; Stephens et al., 2012). Yet, by ignoring certain advantages enjoyed by members of privileged groups, educational systems visibly accentuate the differences in performances with normative assessment. This can potentially render educational context more threatening and make it harder for members of unprivileged groups to attain academic benefits, such as access to higher tracks or diplomas (Felouzis & Charmillot, 2013). Indeed, the aforementioned studies conducted by Monteil & Huguet (1993) showed that high-achieving and low-achieving students alike are more likely to underperform after a negative feedback if the evaluation is rendered visible. Importantly, Goudeau & Croizet (2017) demonstrated that the visibility of performance can be transposed to social comparison affecting social groups, as their studies found that when achievement was visible, low-SES students produced lower performance.

By clearly and visibly identifying through assessment which students are worthy of academic rewards, school highlights which are the high and low-achieving students. These categories can become intertwined with certain expectations of academic performances (Resh, 2009). For instance, Unzueta and Lowery (2010) showed that participants, regardless of their own racial background, expect racial differences on mathematics test achievement, such that they predict that Asian-Americans would get better results than Whites followed by Blacks and Latinos. As privileged groups are continuously overrepresented in the high-achieving categories, this state of affairs perpetuates the representation of a social order, in which certain social groups "rightfully" deserve rewards allocated by the education system (Sabbagh, Resh, Mor, & Vanhuysse, 2006). Visible discrepancies in different social groups' performance contribute, in a meritocratic selective context, to the notion that certain groups deserve their high-status and belong in the school culture (Resh, 2009).

In sum, in a competitive context, normative assessment can accentuate the performance differences between various social groups, creating in the process a social scale of academic achievement justified by meritocratic principles regulating the distribution of grades. As such, normative assessment can become a social regulation tool, which by increasing social comparison processes between individuals (and by extent their social groups), contributes to psychological processes linked to the maintenance of existing hierarchies.

2.1.2.2.2. Formative assessment

This wide range of criticism has led several scholars to contemplate other methods of assessment which could counteract some of the negative aspects created by normative assessment; one of which is formative assessment. Formative assessment is a method that has been widely discussed by scholars in educational sciences (Clark, 2012; Dixon, Hawe, & Parr, 2010; Williams, 2010). Generally, formative assessment consists of a detailed feedback on the students' performance. This feedback focuses on the students' personal mistakes and provides them with information on how to overcome the difficulties they encounter. Its personalized setting allows students to target their own strengths and weaknesses, and focus them on their own progression (Hamilton, 2003). Some authors such as Black and Wiliam (1998) define this type of assessment more broadly to include any activities undertaken by teachers and students to get information that can be used to alter teaching and learning. This definition would therefore include: teacher observation, classroom discussion, and analysis of student work (including homework and tests). The central component of formative assessments is that the information collected from tests is used to adapt teaching and learning to meet students' needs. In sum, the main objective of formative assessment is to identify gaps between desired goals and current knowledge and skills to guide the students towards the goal (Boston, 2002). This method avoids pressuring students to compare themselves with others. It also provides more specific information on performance than normative assessment does and has been linked with positive effect on learning (Black & Wiliam, 1998; Frey & Schmitt, 2007; Marcotte & Hintze, 2009). According to an extensive review of 250 articles and chapters, the learning gains, as measured by comparing the average improvement after formative assessment with control groups of students who performed on the same test, produced effect sizes ranging from .4 to .7. Low-achieving students and students with disabilities benefited more from this assessment method than did other students (Black & Wiliam, 1998). Indeed, formative assessment could be in particular useful to low-achievers because it focuses the student on improvement and effort (Boston, 2002). Finally, formative assessment increases the chance for students to devote a great deal of effort to their learning outcomes and it has been shown to best support academic success (Dalbert, Schneidewind, & Saalbach, 2007).

Considering the advantages provided by formative assessment in terms of learning outcomes (i.e. the fulfilment of the main objective of education), one might wonder if it is the additional selection function of normative assessment which explains its prevalence. Even though other evaluation methods have been demonstrated as being strong educational tools, they do not facilitate the second function of the education system. Normative assessment, unlike

formative assessment, is a useful tool to serve the function of selecting students (Cliffordson, 2008; Jasso & Resh, 2002). This reason could potentially explain their continuous widespread use despite some of the observed negative consequences for students.

2.1.2.2. Tracking

Other prevalent institutional practices in the education system are: tracking, streaming or ability grouping; all of which at their core rely on the same principle: differentiate students based on prior performance to adapt the content of the curriculum (Ansalone, 2001). What sets these different practices apart is the rigidity of the enforced groups boundaries (i.e. the difficulty with which students can change groups) and the physical boundaries between students (within classrooms for ability grouping vs. separated classrooms or institutions in the case of tracking and streaming). All OECD countries implement at some stage in the educational process some form of tracking, although there is substantive variability as to the format and starting point of the selection. Students can be tracked for individual course subjects or in an overarching program leading to vocational or further academic training (OECD, 2013b).

The main feature of tracking is that it allows for the regulation of the distribution of learning opportunities. Access to knowledge, the amount and content of intended curriculum and the expected credentials are tailored to fit the perceived abilities of the group (Cohen, 2000). From a pedagogical point of view, the structural organization of learning is supposed to increase academic achievement, as it ensures an educational fit between the teaching and learning process. Teachers can better cater to students' needs and interests by adjusting the content of their classes thereby maximizing every student's achievement (Hallinan, 1994). The assumption is that teachers can teach material at a higher level and faster pace for higher ability students, and at a slower pace for students with lower ability, thereby improving overall student achievement. Another common assumption is that students will learn better in smaller more homogenous groups with material that is specifically adapted for its audience (Lleras, 2013).

Evidence for these assumptions are mixed. This could be due to differences in contexts within which schools operate or to the many confounding factors that are involved in tracking. In spite of these variations in application, there remains little consistent evidence of an overall positive effect on performance across context. Some studies report positive effects for high-ability students' performance, but these benefits often come at the cost of lower streamed students who tend to perform worse in streamed educational structures (Caro, 2009; Hanushek & Woßmann, 2006; Huang, 2009; Schutz, Ursprung, & Woßmann, 2008). Studies with large scale quantitative, longitudinal data and cross-country comparative data have concluded that

streaming presents no significant improvement in overall achievement but can in some cases increase differences in performance between high and low-ability students (Hattie, 2002). Early tracking can even have a detrimental overall effect on mean performance (Lavrijsen & Nicaise, 2016).

Another widely studied subject in the field of tracking is the effect of tracking/ability grouping on the relationship between socio-economic background and educational attainment. There is substantial evidence demonstrating that low-SES students are overrepresented in lower tracks (OECD, 2013b). This observation has led many authors in the last century to wonder theoretically about the role of tracking as a practice serving to reproduce social class and racial inequalities (Bowles & Gintis, 1976; Oakes, 1995; Rosenbaum, 1976). Recent quantitative investigations propose that tracking comparatively to comprehensive educational systems tends to affect the representation of minority groups in higher education. These studies demonstrate that degree of differentiation and the age of selection changes the extent to which the educational system produces inequality (Van de Werfhorst & Mijs, 2010). Even when statistically controlling for past performance, socioeconomic background has been shown to still predict tracking position. A study across 30 countries determined that 60 % of the effect of socioeconomic background on achievement is mediated by school tracks, school types and curriculum tracking within schools (Marks, Cresswell, & Ainley, 2006). The lack of experimental investigation in the specific area makes it difficult to conclude on the specific causal direction of the relationship between past performance, tracking and social inequalities, or even students/ teachers' behavior and expectations, but the patterns observed in these large correlational studies are consistent with the argument that tracking as a practice impairs social class equality at school.

In terms of psychological consequences, tracking has also been argued to produce potential harmful effects on teachers and students alike. Students are often aware of the hierarchy of the groups and the academic status which is attached to it (Lleras, 2013). Early on, Oakes (1985) found that students' self-concepts and educational aspirations were related to track level. More recent research on tracking suggest that institutional stratification does not overall negatively affect academic self-concepts due to a big-fish—little-pond effect (Salchegger, 2016), but is likely related to lower educational expectations for disadvantaged students as tracking is associated to stronger differential achievement (Parker, Jerrim, Schoon & Marsh, 2016). Concerning teachers and tracking, Oakes observed that “the instructional environments of high-track classes were more characterized by a whole set of teacher behaviors thought to promote learning than were those of low-track classes.” (Oakes, 1985, p.110, cited

by Vanfossen, Jones, & Spade, 1987). Indeed, teachers have been consistently found to be more motivated, focused on content rather than discipline and feel more efficacious when teaching high-ability groups (Hallam & Ireson, 2003; Hattie, 2002).

Disputes over efficiency and equality concerns of this practice have also revolved around societal trade-offs. Some authors argue that this practice is justified as it serves to increase societal efficiency in the regulation of societal resources (Ansalone, 2004). Indeed, the potential trade-off of tracking does not necessarily reside on its beneficial effect on student's performance but rather on its efficiency to provide the labor-market with differentiated skilled workers (Bol et al., 2014). Tracking might not be useful to promote educational equality, but it presents pragmatic societal advantages of providing society with appropriately skilled individuals for the market. Along those lines, Shavit & Müller (2000) suggest that benefits of tracking are overlooked by researchers who are focused on potential rewards of high levels of education for lower social class students instead of analyzing the potential pitfalls of pursuing higher education. They contend that vocational tracking reduces unemployment levels of lower social class individuals by offering them concrete skills.

The general consensus in the tracking debate is that evidence fails to consistently support claims for the educational benefits, whereas the negative consequences for educational equality are robust. The ubiquity of this educational practice across countries is surprising as it stands at odds with most researchers' policy recommendations, even if some researchers do present the pragmatic argument that it may protect low-SES students from downward mobility.

2.2. Selection practices: Tools for social reproduction?

The literature on both normative assessment and tracking as educational practices present striking similarities. Scholars tend to agree that both educational practices are limited in the educational benefits they provide for students (except at times for high-achieving students) but are nonetheless widely implemented across the globe. Arguably, both practices present advantages comparatively to other practices as they allow for an efficient and clear selection process. These practices are also complementary in their underlying selection function. Without normative assessment, it would prove complicated to summarize students' level of competency in a manner which permits a clear ranking of students in different tracks or streams. They have, on the other hand, been shown to produce certification of competence which align with original status inequalities (Croizet & Millet, 2012), thereby furthering the argument that selection processes could participate in maintaining the pre-existing social order.

Previous historical and sociological analyses have proposed that competitive examinations such as the one involved in tracking and normative assessment are rooted in traditions, methods, conceptions of knowledge and standards that benefit higher status groups (Carson, 2007; Delandshere, 2001; Leathwood, 2005; Oakes, 1985; Wilbrink, 1997). For instance, a relevant sociological case study for the link between selection processes and social inequalities can be found in Gillborn and Youdell's (2001) article on the effects of A-to-C economy on school practices. They argue that political pressure to provide external performance measures in England had led to an increase in selection practices. They propose that the push towards selection processes had affected the distribution of academic rewards, which, in the end, seem to revolve around group identities and stereotypes. Increased selection process required looking for more differences between students. In order to justify (to others but also to themselves) the differentiation process, teachers relied on the concept of ability to guide their decisional process. However, as ability is a polymorphous concept, it tended to take the form of relevant stereotypes because in order to implement a selection, some students must be at the bottom of the hierarchy. They suggest that: "A final element in this potentially devastating equation is supplied by the increased use of selection within secondary schools: this provides a mechanism by which numerous, often ill-defined and even unrecognized differences in teacher expectations can be given concrete existence through their institutionalization within the organization of teaching groups and, in some cases, the placing of literally impenetrable limits on the exam grades that are available. (...) The schools do not set out deliberately to fail particular groups but, in the face of the A-to-C economy, they must find some way of deciding where best to focus their limited resources. This is educational triage and the decisions are based on judgements of "ability". But "ability" is a loaded, fallacious and highly dangerous concept. "Ability" offers a supposedly fair means for condemning some children to second class educations: it is a discourse that characterizes national educational policy, draws on common sense prejudices and misconceptions, and acts to legitimate the systematic failing of Black and working-class young people." (Gillborn & Youdell, 2001, pp. 87, 94-95).

These qualitative analyses are corroborated by recent empirical research that demonstrated the deleterious consequences of selection processes on achievement goals as well as performance for lower status-group students. Selection processes emphasizing competition and social comparison such as *numerus clausus* policies have been shown to decrease the adoption of mastery-approach goals for all (i.e. desire to master a task; Sommet, Pulfrey, & Butera, 2013). Moreover, competitive and selective departments were shown to affect specifically first-generation students' endorsement of these adaptive goals. In the selective

departments, comparisons between first and third-year students showed a greater decrease of mastery-approach goals for first-generation students comparatively to continuing-generations (Sommet, Quiamzade, Jury, & Mugny, 2015).

As for effects on performance, Smeding, Darnon, Souchal, Toczek-Capelle and Butera (2013) provided a direct demonstration that assessment practices geared towards comparison and selection could threaten the success of lower-status group members. In their field study, students participating in a psychology class were either told that assessment in this class was designed to help them learn (i.e. educational function of assessment) or that assessment was used to select the best of them (i.e. selection function of assessment). Results showed that assessment to select particularly harmed the academic achievement of low-SES students comparatively to the high-SES students. Specifically, they showed that assessment focused on selection led low-SES students to underperform. In the selection condition, the classic social class achievement gap was replicated. The gap, however, disappeared when assessment was experimentally presented to students as a way to learn and improve. Similar results on assessment were found in another research focusing on the gender-based achievement gap in science (Souchal et al., 2013). Even reminding student of the selection function of universities (i.e. to identify the best students, reward them with degrees and guide them toward the highest social positions) hindered the performance of first-generation students (Jury et al., 2015).

This body of research showed that selection-oriented assessments lead students to focus on demonstrating their ability and outperforming others. This dynamic then contributes to the lower achievement of lower status students. Furthermore, endorsing the idea that educational institutions should select the best student predicts more support for traditional assessment practices—which as mentioned above, are known to disadvantage low status students—and less support for alternative assessment practices. More precisely, data from a questionnaire (shown in Figure 1) administered to 140 students playing the role of teachers indicated that the relationship between preference for selection in institutions (3 items; e.g. “The role of the educational system should be to deliver the best diplomas to the best students”) and support for normative assessment method (4 items measuring whether they think it is a good, reliable and accurate assessment tool) is mediated by perceptions that this assessment method follows equitarian principle of justice (3 items; e.g., “This method values your students as a function of their merit”).

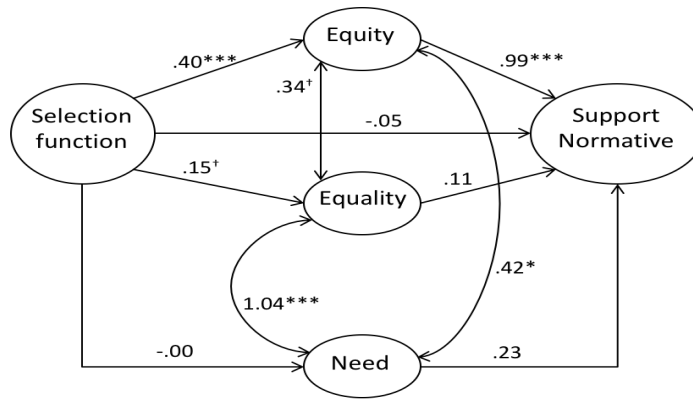


Figure 1. Mediation model showing how the function of selection of education positively relates to the support for normative assessment via equity. All values are unstandardized coefficients ($\dagger p < 0.10$; $* p < 0.05$; $*** p < 0.001$).

Preference for selection was also negatively related to support for formative assessment, a relationship that was mediated by perceptions that formative assessment caters to students’ needs and ensures equality of outcome (3 items for the equality principle: e.g., “This method allows you to take all your students to the same level of attainment,” and 3 items for the need principle: e.g., “This method values your students even if they struggle”; cf. Figure 2). Consequently, promoting the idea that schools select the most deserving students could thus restrain changes in assessment practices towards greater equality (Autin, Batruch, & Butera, 2015).

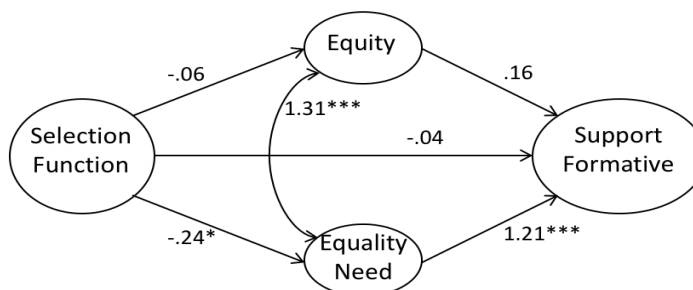


Figure 2. Mediation model showing how the function of selection of education negatively relates to the support for formative assessment via corrective justice (equality and need). All values are unstandardized coefficients ($* p < 0.05$; $*** p < 0.001$).

It has long been suggested in qualitative theoretical work and correlational studies that traditional assessment and selection practices reproduce social class inequalities, but the recent development of experimental studies on the selection function provides further evidence that

the relationship could be causal. Selection practices could in fact act as a threat and lead to the production of social class inequalities, by reducing contextually-adaptive learning motivations of students and reduce their performance. If so, then selection practices can become tools which help maintain intergroup hierarchical status quo.

2.3. Meritocracy as an ideological justification for selection: Consequence at the intergroup level

As the model presented in Figure 1 suggest, preference for selection in educational institutions is related to the beliefs that traditional assessment methods rely on a equitarian (i.e. meritocratic) justice principle. More generally, the function of selection is based on a meritocratic ideal which allows for individuals to be guided toward the position corresponding to their dispositions. Although the principle of meritocracy should in theory ensure equal access to allocations of ressources in school, recent research in social psychology suggest that believing societies are meritocratic could have paradoxical nefarious effects on equality of opportunity.

Historically, testing and graded exams were implemented to form a society based on individual merit (Carson, 2007). Educational systems are nowadays structured to facilitate its measure. To ensure that comparisons are relevant and meaningful, classes are grouped around students' age and everyone is given similar teaching conditions (i.e. classrooms, material, teachers and tests; Croizet, et al., 2017). On the one hand, these arrangements represent the embodiment of the educational function of educational institution: every student is given the same learning and testing conditions. On the other hand, it is also a prerequisite for the selection function. In order to identify merit and legitimize selection processes, every student has to be given the same starting opportunities and be individually comparable to one another. Thus, if individuals or groups produce better or worse performance, it can be assumed that they reflect differences in merit. These differences become the justification for the allocation of institutionalized rewards.

Though individuals vary in their adherence to meritocracy, it is still considered to be the dominant ideology of liberal societies (McCoy & Major, 2007). Son Hing et al. (2011) define merit as a combination of ability, training, and experience and is considered by many to be an ideal justice principle. What is supposed to be rewarded in a meritocratic system is achievement, no longer ascription. In a meritocracy, it is expected that one's social position does not depend on social background but results from a fair competition based only on criteria of talent and merit. These values permeate the educational system. Selection and admission

practices claim to rely on rules of meritocracy (Sabbagh et al., 2006). By rewarding individual performance, the meritocratic educational system is supposed to circumvent group-based considerations and offer every student the same opportunities, therefore guarantying the possibility of social mobility. Since each individual is given the same conditions to demonstrate his or her talent and succeed at school, students are seen as responsible for their own destiny and worth, and for occupying the place they hold in the educational hierarchy. The idea that hard work leads to success is an influential norm in school environments (Duru-Bellat, 2011).

The pervasiveness of the competitive meritocratic ethos in education has lead Deutsch (1979) to suggest that these selective competitive practices are fulfilling a larger societal ideological purpose. He proposed that school acted as a socializing agent and prepared students to conform to ideological beliefs and practices of a broader competitive society infused with a meritocratic ideology. Academic institutions reflect societal values of competition and prepare students to comply with this ideology by using educational practices which communicate the endorsement of this justice principle. This implies that meritocracy is used to justify the implementation of these education practices, but at the same time their widespread use serves to socialize and by extent propagate the ideology in society.

A similar point was also made by Beauvois & Dubois (1988) who thought that internal explanations (i.e. explanations in which the attribution of success and failure is seen as related to oneself) and evaluative school practices work together to perpetuate a liberal competitive ideology. The use of internal explanations would be sought by evaluators as proof of students' adherence to liberal psychological ideals, which advocate values of social differentiation between self and others, assertiveness and self-sufficiency (Beauvois, 2003). They concluded that the norm of internality (i.e. norm encouraging the use of internal attributions) would participate in the ideological reproduction of liberal societies (Beauvois, 1994) through normative selection practices (Beauvois, 2003). Resh (2009) proposed similarly that: "The institutionalized pattern of evaluation is a component in the hidden curriculum that transmits meritocracy and universalism as a central societal norm." (Resh, 2009, p. 322).

On a related matter, an experiment conducted by Darnon et al. (2009) demonstrated that students implicitly understand which achievement goals are useful to succeed in the education system, even when it is not explicitly endorsed by teachers. Students recognized that competition in education and being able to demonstrate superior competence to others is an essential component to succeed at university despite teachers claiming they only promoted mastery goals instead of performance-approach goals in their classes (Darnon et al., 2009). These studies demonstrate that institutional structure and institutional practices can convey the

importance of competition, meritocracy and selection for academic success even when teachers do not explicitly or intentionally express it. In sum, evaluative practices can be seen as socialization tools which facilitates the endorsement of meritocratic values.

The literature in social psychology suggest to clearly differentiate between the general preference for merit principles (i.e. prescriptive meritocracy) and the belief that merit principles are in effect in society (i.e. descriptive meritocracy or belief in meritocracy). Research conducted by Son Hing and collaborators (2011) suggests that those are two separate constructs, with only the latter considered a system-justifying ideology. Subsequent studies have later confirmed that believing that society is meritocratic can have paradoxical effects, as it leads individuals to endorse beliefs and practices which tend to reproduce inequalities by masking initial privileges and disadvantages of social groups.

For instance, experiments conducted by McCoy and Major (2007) showed that when meritocracy was primed, the level of justification of status inequalities increased for disadvantaged group-members. Conversely, it reduced perceptions of racial privilege among highly-identified white individuals and led participants to attribute disadvantages of low-status group members to internal causes (Fraser & Kick, 2000; Knowles & Lowery, 2012). Among privileged group members, claims of personal merit are used strategically to ensure the dissimulation of those privileges. For instance, when exposed to evidence of their group's privilege, social class elite and Whites attempted to regain appearances of personal merit by denying personally benefitting from privilege and alleging to more personal hardships comparatively to a control condition (Phillips, 2016). In short, meritocracy is related to perceptions and beliefs that legitimize social inequalities among both minority and majority group members.

It also provides moral and intellectual justification for reducing one's intention to implement practices which could reduce intergroup inequalities. Studies conducted by Son Hing, Bobocel and Zanna (2002) have shown that endorsement of the merit principle was associated with increased opposition to policies challenging the status quo in favor of disadvantaged group members. Meritocracy is also often used as a justification to oppose affirmative action (Faniko, Lorenzi-Cioldi, Buschini, & Chatard, 2012). In the field of education, Darnon, Smeding and Redersdorff (2017) showed that beliefs in school meritocracy were negatively associated with expressed interest or behavioral intention to implement an equalizing pedagogical method and that its promotion increases the social class achievement gap (Darnon et al., 2018). Taking the perspective of employers, Castilla and Benard (2010)

demonstrated that emphasizing meritocracy in an organization lead managers to favor men over equally competent women for institutional rewards.

In sum, meritocracy which is claimed to be the basis for educational selection practices is supposed to promote equal opportunity. In fact, by presenting the current system as being fair, it leads individuals to the reproduce and the legitimize intergroup inequalities. The ubiquitous use of selection practices in school further promotes and legitimizes the meritocratic ideology by socializing students to be continually evaluated and compete. Additionally, the use of normative selection practices visibly highlights disparities in social groups' academic status and contributes in a supposedly meritocratic system to the representation of a legitimate social order, where some groups rightfully succeed and others fail (Resh, 2009).

2.4. Beyond students' performance: Agents of the system and production of inequalities

One important premise for the functioning of a meritocratic system is that performance is measured objectively; that is that the educational system is bias-free. However, there is substantial evidence which questions this assumption. For instance, in the experience of Darley and Gross (1983), people are asked to judge the same girl after a mathematics task. She was judged to be more competent, motivated, sociable, and mature when presented as coming from a favored environment compared to when presented as coming from a disadvantaged background. Later, Woods, Kurtz-Costes, and Rowley (2005) found that elementary school children rated children from better-off backgrounds as more competent than children from disadvantaged backgrounds. Teachers tend to react positively to children who express critical ideas and ask questions (i.e. children who display independent selves) and bring more support to this "type" of student (Calarco, 2011; Rist, 1970). Negative stereotypes also target low-SES parents, which are seen as providing little support to ensure their children academic success (Gillborn & Yodell, 2000). Beyond classrooms, social class was shown to influence teacher's relationship to parents in ways that favor high social class parents and children (Gillies, 2005; Lareau, 2002).

In Gillborn and Youdell (2000) case study, when specifically asked about low-SES students' underachievement, teachers were reluctant to address the question of social class, yet used stereotypes to justify their practice and expectations, positioning students within educational and occupational hierarchies and normalizing their underachievement. Tacitly, teachers recognized student' social class as a key factor in their construction of student underachievement, even though they refused to explicitly acknowledge it. For instance, in

explaining present or future achievement they referred to the impact of students' home lives or included positive comments (in the case of privileged students) such as parents' attendance, paying for extras such as music lessons and being supportive of the school. Across the interviews, teachers' discourse presented social class as both absent and present. Even though teachers denied knowing about students' social class and how it was linked to performance, they would comment on home life predicting student trajectories when this was displaced from them and the classroom context. This allowed teachers to absolve themselves from any responsibility in creating an educational hierarchy. According to Gillborn and Yodell (2000), education professionals now have been sensitized to consider whether practices can be overtly or institutionally discriminatory and racist but have not been made aware nor are equipped to deal with the disadvantages of social class (Allard & Santoro, 2006; Crozier & Davies, 2006; Gazeley & Dunne, 2007).

These accounts suggest that students' social class can impact teachers' expectations and behaviors without them necessarily taking notice or questioning the legitimacy of the educational hierarchy. Furthermore, teachers' biases can directly impact students' performance or opportunity. In controlled experiments, supposedly native students received better grades than immigrant students, and were disadvantaged in tracking recommendations (Glock, Krolak Schwerdt, Klapproth, & Böhmer, 2013; Hinnerich, Höglin, & Johannesson, 2015; Sprietsma, 2013). Even in the absence of effective differences in performance, teachers at times construct disparities in their measurement of ability and create academic advantages or difficulties on seemingly objective measures.

Until now, the results of such studies have been interpreted as resulting from individual bias. From a psychological and sociological theoretical standpoint, given the wealth of available evidence suggesting that intergroup inequalities in school are contextually dependent on the structure of the educational system (i.e. effects of educational practices, psycho-social literature on achievement gap, selection function), we think it is imperative to consider the role of institutions in orienting teachers towards reproducing inequality. We propose that biased assessment cannot be isolated from the sociocultural context in which the behavior is produced. To understand teachers' behaviors in the context of the structure within which they are embedded, we propose to adopt a sociocultural approach.

2.5. Sociocultural Approach

The sociocultural approach is derived from an interdisciplinary perspective which emphasize meaning and intersubjectivity in creating and maintaining reality (DiMaggio &

Markus, 2010). This approach can be described as the integration of culture in the explanation of individual psychology (Autin, 2010). The fundamental principle behind the sociocultural approach is the conceptualization of a recursive process between individual and social system's functioning to create meaning. Psychological dimensions of people (i.e. the thoughts, feelings and actions) are thought to be grounded in and to foster the sociocultural context and vice-versa. The causal process is one of mutual constitution: ideas, practices and products are active in the formation and operation of psychological processes. During the socialization process, individuals rely on the existing ideas, practices and set of beliefs underlying them to make sense of who they are and what is expected of them to guide their behavior. Therefore, Markus & Hamedani (2007) postulate that sociocultural contexts shape behavior by providing an interpretive system that organize the behavioral system. For instance, the importance of individual achievement, which underlies many school practices and ideas, encourage people to explain their situation or their life outcomes in term of individual agency, this in turn constructs how individuals think of themselves and then explain social worlds (i.e. with this framework in mind; Markus & Hamedani, 2007). In terms of research recommendation, they suggest moving beyond decontextualized individual analysis, by studying practices for instances, to uncover how structures of social worlds continually shape psychological functioning and how people or agents depend on these material structures (i.e. cultural objects or practices) to themselves construct their environment. Engaging in practices will shape individuals but are simultaneously shaped by them. Together, they will create, embody and reproduce an environment which is mutually constituted of both the individual and the practices and reflect the social and moral order in this context. One empirical perspective that follows a sociocultural approach is the dynamic constructivist analysis which focuses on the situational dimension of culture and how it influences individuals. Culture would reside in domain-specific knowledge structures or implicit theories which differently guide behavior. Accordingly, different behaviors would emerge on the basis of situational cues communicating the cultural context (Markus & Hamedani, 2007).

Most famously, this approach has been applied to the cultural models of selves initially developed by Markus & Kitayama (2010). In their research, they propose that fundamental experience of "self", that guide action and thoughts are culturally situated. Both cultures and experience of selves engage in mutual processes of constitution. As the authors note: "the self (i.e. body, brain, and psychological tendencies) and the sociocultural content (i.e. ideas, practices, institutions, products, and artifacts) continually constitute one another. As cultural content changes, the mediating self and psychological functioning change in turn." (Markus &

Hamedani, 2007, pp. 422-423). To understand what oneself is, individuals draw from the larger sociocultural context and everyday practices to give it meaning and to direct behaviors.

This concept was later applied to experiences of social class. Stephens, Markus and Fryberg (2012) propose that evolving in lower vs. higher social class environments provides a framework that shape the representation of the self in relationship to others. While repeated experiences and inputs from the environments will shape an independent self for higher social class individuals, lower social class environments tend to construct an interdependent self (Stephens et al., 2007). The cultural mismatch theory used the sociocultural approach framework to analyze how the incompatibility between the independent norms endorsed by higher education institutions and first-generations interdependent model of selves can lead them to underperform. By highlighting the effects of institutional norms of behavior on students' performance, the cultural mismatch theory considers that their research allies structural (i.e. institutional norms) and individual (student performance) perspectives to understand their mutual constitution (Stephens et al., 2012). There is however no research that applies a sociocultural approach to understanding how the relationship between institutions and practices can inform individual behavior. More specifically, the sociocultural approach theorizes that practices convey underlying meaning from the larger sociocultural context to individuals that guides their behavior. Yet, to the best of our knowledge, no previous research has provided experimental evidence of how institutions promote norms and values in their practices that can direct agents' actions.

Previous research has highlighted the impact of institutional practices in reproducing inequalities. Smeding and collaborators showed that using assessment practices to select or to help improve students impacted low-SES (but not high-SES) students' performance (Smeding et al., 2013). Similarly, Souchal demonstrated that girls (but not boys) underperformed when the assessment was geared towards students' comparison rather than the mastery of the task (Souchal et al., 2013). However, these studies also rely on students' experience to explain the reproduction of inequality. By focusing on the role of mutually constituting dynamics of teachers, practices and institutions, we propose to use a sociocultural approach that provide the first entirely structural account for an experimental demonstration of the reproduction of inequalities.

2.6. Institutional logic

Our approach is also informed by theoretical insights from another interdisciplinary line of scholarly research: institutional logic. Institutional logic focuses on how broader belief

systems shape the cognition and behavior of actors. Institutional logic presuppose that to understand individual and organizational behavior, it must be located in a social and institutional context, as it is the institutional context that both regularizes behavior while still provides opportunity for change (Thornton & Ocasio, 2008). A central premise of the theory posits that institutions have central logics that guide organizing principle and provide individuals with motives and corresponding identities. Ocasio (1997) suggest that institution structures individuals' attention by generating a set of values that conditions the legitimacy, importance, and relevance of issues and solutions within an institution and can provide decision-makers with an understanding of their interests and identities. Indeed, another mechanism through which institutional logics could impact individuals and organizations is thought to be individuals' identification with organizational identities. Specifically, Ocasio (1997) propose that the institutional identities can generate a set of decision premises, which are congruent with the institutional logic (Thornton, 2002). By studying how some institutions are constituted of multiple logics (i.e. multiple forms of institutionally-based rationality), institutional logic can provide insights into practice variation. Indeed, multiple logics could create diversity in practice by enabling variety in cognitive orientation and contestation over which practices are appropriate in context (Friedland & Alford 1991).

Very little experimental work has been conducted in this area, most of the empirical work relies on qualitative data (i.e. case studies), to analyze how dominant logic of institutions and shifts in logics (in various field such as healthcare for instance) can generate specific effects on actors, behaviors and government structures (Lounsbury, 2002; Suddaby & Greenwood, 2005; Thornton, 2002). Specifically, researchers have demonstrated how changes in logics led to shifts in organizational practices (Thornton, 2004) and the creation of new industry associations (Lounsbury, 2002). For instance, in the banking industry, a shift from a regulatory logic to a market logic was shown to create a change in business practices where employee status, which was once driven by reputation became reliant on the employees' normative conformity to increasingly mathematical economics. This led to the creation of new professions to adapt to the market logic, such as money management and securities analysis. These new professions helped propagate new financial theories (i.e. portfolio and risk management). Consequently, the status within the field became increasingly determined by familiarity and expertise with these new financial theories (Lounsbury, 2002).

A main focus of the literature on institutional logic has been to analyze institutional changes towards a market logic, which is seen to encourage individuals to develop an implicit theory of self-interest (Wang & Murnighan, 2011). They propose that in institutions following

the market logic, individuals tend to interpret their own or others' motives in this manner. As they see this implicit theory as a socially appropriate basis of action, their behavior is geared towards action that comply with this logic. For instance, the market logic is seen as a competing logic to the family logic in business where the implicit assumption is that families exist to procreate and ensure their ongoing existence in the future. The family logic suggest that individuals give greater importance to interpersonal relationships, and therefore derive personal identity from the reputation of their family in the community. Legitimacy in this context is based on demonstrations of unconditional loyalty (Thornton, Ocasio, & Lounsbury, 2015). As a consequence, individuals in those contexts will assess their own motives and behavior in light of the prevalent implicit institutional norms, which are themselves governed by an overarching family institutional logic.

One experiment, notably, sought to uncover the psychological consequences of institutional logic on behavior. The authors proposed that individuals internalize institutional logics as an associative network of schemas that shapes individual action. They experimentally tested institutional frame switching - change from one logic to another- by looking at the effects of situational cues associated with particular institutional logics (in this case inducing a market logic vs. family logic). The results determined that the activation of market logic was associated with exerting more effort in a self-interested task, thereby demonstrating that individuals were more likely to shift their behavior when the expected action was congruent with the logic (Glaser, Fast, Harmon, & Green, 2016).

In sum, the institutional logic framework postulates that institutions with multiple (at time competing) logics might shift institutional agents' priorities, cognitive orientation, and decisions. Practices could become cues for agents informing them about the expectations that institutions have of their role within them. Although the perspective developed in this thesis is grounded in the field of experimental social psychology of the social class achievement gap, we believe that similar dynamics of competing logics could arguably be at play in educational institutions, whereby educational and selection function could constitute different institutional logics which activate behaviors that are in accordance with the institutional function. Specifically, we propose that selection practices are culturally embedded practices associated with values legitimizing the current academic status quo (such as competition, essentialism and meritocracy) and leading agent to reproduce social inequalities.

2.7. First set of hypotheses

In line with the theoretical predictions that follow the sociocultural approach, we suggest that social class inequalities can occur in school through the agents of the system, not solely as the product of individual bias, but also as a function of institutional expectations and practices. We propose that teachers act as agents of an institution that conveys specific values and norms and practices. These institutional practices will in turn shape the agents' behavior.

We hypothesize that focusing evaluators on the selection function of educational institutions -or on selective assessment practices- rather than the educational function will increase an SES bias in their evaluation of students' performance. We expect that using normative assessment comparatively to formative assessment to assess students will lead to differences in the evaluators' assessments that reflect the existing performance differences in SES - despite performance being experimentally controlled. We suggest that the underlying mechanism explaining differences in grading behavior does not reside in the actual use of normative assessment, but in the underlying function of the assessment (i.e. its selection function). We therefore think that the difference in assessment will appear when assessment is used to select students rather than when used to educate students.

Similarly, we think that evaluators will reproduce the same effect in a tracking paradigm, that is, we expect that using a selection practice such as tracking will lead evaluators to find higher-SES students more suitable than lower-SES students for a higher academic track (and vice-versa for a lower track) in spite of actual similarities in prior performance. Furthermore, we propose that the gap in tracking decision will be stronger when the selection function of the educational system is made salient.

3. Why are hierarchies maintained?

Most societies are organized around some form of hierarchy. Hierarchies are so ubiquitous that they are theoretically seen as one of the most fundamental features of social relations. They can be defined as explicit or implicit classification of individuals or social groups based on a socially valued dimension (Magee & Galinsky, 2008). Depending on the position given in this ranking, social groups will differ in the amount of power or status (i.e. respect, recognition) granted (Anderson & Kilduff, 2009; Blader & Chen, 2012; Fiske, 2010). Groups at the top of the social hierarchy are given more prestige, power and esteem than groups at the bottom of the hierarchy.

While some social hierarchies such sex or ethnicity have been, or are, the object of many studies in social psychology, interest in the psychological processes of social class and socio-economic status that contribute to the reproduction of hierarchies is very recent (Fiske & Markus, 2012; Kraus & Stephens, 2012; Kraus, Tan, & Tannenbaum, 2013). There are however specificities to studying the social class hierarchy rather than other social groups. Whereas sex and ethnicity are perceived as ascribed statuses (i.e. limited possibility of changing group membership) socio-economic status is seen as an achieved status in the sense that it is partly gained through professional attainment (Fiske, 2010). This implies that, in theory, the boundaries between social groups can be perceived as permeable: an individual from a disadvantaged group could imagine one day belonging to a favored group. While status arguably is seen as somewhat achieved in one's lifetime, it is on the other hand inherited by children. The latter are born and grow in a context forged by the socio-economic status (SES) of their parents. Typically, schools are the sites where students should in theory either maintain or gain a social position. Although the educational institutions endorse meritocratic ideals, decisions made by members of these institutions- reflected in the educational hierarchy- strongly overlap with the initial SES hierarchy. This suggest that the dominant mobility path which would allow low-SES children to change group membership is more restricted than presented by the educational system, which *in fine* tends to reproduce the social class hierarchies.

There are theories in social psychology that have investigated the underlying reasons for the reproduction of hierarchies which suggest that hierarchies can at times be supported by both advantaged and disadvantaged people. In this section, to examine why educational hierarchies might be reproduced by agents of the institution, we briefly review the existing evidence in various social psychological theories that outline the conditions under which

hierarchies are upheld by both the advantaged and the disadvantaged and the psychological reasons which underlie the maintenance of hierarchies. Furthermore, we will conclude with the behavioral consequences for individuals who defy expectations in a manner which threatens the status quo to investigate whether the mobility path for low-SES students is actively constrained by agents of the educational institutions, who could be motivated to uphold the existing hierarchies in school, regardless of their own group membership.

3.1. Social Identity Theory: Byproduct of intergroup conflict

An influential theory in the domain of intergroup dynamics which provides insights as to how and why hierarchies are reproduced is the Social Identity Theory (SIT). Social Identity Theory provides a framework to understand the interdependencies between personal self-systems and social-systems. It is based on the premise that collective phenomena cannot be accurately explained in terms of purely individual or interpersonal processes alone. Social groups shape individual psychology (e.g., perceptions, beliefs, and behaviors) and become internalized into a person's sense of self. As individuals are motivated to achieve and maintain positive concepts of themselves, they strive for both individual achievement as well as belonging to groups which benefit from a positive identity. In order to belong to groups which are perceived as high-status, individuals of the group might at times compete with other groups in a quest for status (Tajfel & Turner, 1979).

In his seminal minimal group paradigm, Tajfel demonstrated that simply belonging to a group was a sufficient condition to instigate ingroup bias (Tajfel, Billig, Bundy, & Flament, 1971). Even in the absence of actual conflict or potential individual gain, participants were motivated to favor their own group in the distribution of resources (Diehl, 1990). This occurred even when attempts to maximise ingroup gains relative to out-group meant that the ingroup received less resources in absolute terms. Since then, studies on in-group favoritism and positive intergroup differentiation have received decades of empirical support, both in natural and minimal groups context (for review, see Mullen, Brown, & Smith, 1992).

According to the SIT, intergroup conflict arises in specific societal contexts after individuals proceed to compare the status of their ingroup to another group. If the comparison between groups is favorable, individuals are motivated to seek maintaining or extending their advantages (Tajfel & Turner, 1979). If the comparison is unfavorable, low-status group members, will attempt to improve their status. The strategy they are likely adopt, which can be behavioral or cognitive, depends on perceptions of the stability, permeability and legitimacy of the intergroup relations. When the boundaries are seen as permeable, regardless of the perceived

legitimacy of the intergroup differences, the probable course of action is to attempt a social mobility process and leave the group of origin. When boundaries between groups are – or are perceived as- impermeable, a possible approach is to engage in social creativity which involves a positive redefinition of the value or meaning of a characteristic of the group. There are three ways in which this can be achieved: (a) by finding more disadvantaged groups to compare the ingroup with, (b) by increasing the importance of positive dimensions of the ingroup, or (c) by changing the meaning of the ingroup membership (Reicher, Spears, & Haslam, 2010). When intergroup relations are not seen as permeable, but illegitimate, low-status group members might seek changes in the hierarchy (Jackson, Sullivan, Harnish, & Hidge, 1996) and challenge the dominant groups to better their situation.

SIT has mostly been used as a framework to analyze situations of intergroup conflict and research often focuses on the disadvantaged groups' perspective. Yet the original theory also postulates that intergroup conflict is not the only course of action for groups. Tajfel & Turner (1979) propose that societal norms regulate the manifestation of social competition between groups, which can for instance take the form of outgroup favoritism or intergroup fairness. Although this area of research in SIT is less developed, group norms have been shown to affect intergroup discriminatory behavior. For instance, group norms of fairness can decrease the propensity of individuals to favor their own group (Jetten, Spears, & Manstead, 1996). Specifically, SIT predicts that social competition will result in intergroup conflict only when there is intergroup agreement about the value of intergroup behavior (Rubin & Hewstone, 2004). Individuals beyond their group membership can have a consensual perception of the intergroup status hierarchy and behave in accordance with the prevailing hierarchy by consensually discriminating. Consensual discrimination is proposed to occur when intergroup relations are seen as stable and legitimate. In this case, the behavior can no longer be seen as ingroup or outgroup behavior per se, as both ingroup and outgroup members would not engage in self-categorization and ingroup identification when discriminating (Rubin & Hewstone, 2004). On the role of institutions, Rubin and Hewstone (2004) further suggest that institutional discrimination might not have been the central focus of researchers in this area but can nonetheless be explained by institutional norms that promotes consensual discrimination. In their view, SIT would predict that societal norms embodied in the institution define the nature and extent of to which individuals might share consensual perception of the intergroup hierarchy and engage in consensual discrimination (Rubin & Hewstone, 2004).

In sum, discrimination according to SIT has most often been studied through the lens of intergroup conflict. However, the theory still considers specific circumstances, specifically in

institutions, that can lead individuals to follow the intergroup norms and consensually discriminate.

3.2 Social Dominance Theory: Hierarchy-enhancing contexts

Another influential theory in social psychology which explains why group-based social hierarchies exist and why members of groups discriminate against other groups is Social Dominance Theory (SDT). While SIT is primarily known for its focus on psychological processes leading to social change, SDT examines why intergroup hierarchies tend to perpetuate themselves through power (Sidanius, Pratto, van Laar, & Levin, 2004).

Social dominance theory examines both individual and structural factors that contribute to group-based oppression, which they see as the byproduct of systemic and individual discrimination (Sidanius et al., 2004). Their evolutionary approach to social stratification postulates that societies organize themselves around group-based structures to minimize conflict in intergroup relations (Roccatò, 2014). Social dominance theorists consider that intergroup bias stems both from structures that support the maintenance of hierarchies and individuals' desire to live in a hierarchically group-based structured society (Pratto, Sidanius, Stallworth, Malle, 1994). In each society, one or more dominant social groups will enjoy disproportionate social power over the members of subordinate group members (Pratto, Sidanius, & Levin, 2006). And most forms of group oppression are interpreted as different manifestations of the same basic predisposition of individuals to form group-based social hierarchies. This point differentiates the approaches to inequality adopted by SIT and SDT. While SIT focuses mainly on social status (i.e. the level of prestige conferred by others), SDT is more concerned with social power, which they define as the ability to impose on others despite resistance (Sidanius et al., 2004). To measure individual's inclination towards imposing group-based hierarchies, SDT conceptualized an individual measure of differences in levels of group-based discrimination (SDO). Individuals who present high SDO scores desire to maintain the differences in social status of different groups, as well as individual group members. High SDO is associated with the rejection of ideologies seeking social equality (i.e. hierarchy-attenuating myths), such as multiculturalism, the defense of women's rights, or colorblindness (Guimond, Dambrun, Michinov, & Duarte, 2003).

A central point of SDT is that those who are subordinates also participate and contribute to their subordination, by showing less ingroup bias, and even favoring sometime the outgroup (Levin, Federico, Sidanius, & Rabinowitz, 2002). Furthermore, because of their low position of power, they are likely to find themselves in situations that leads to more self-debilitating

behaviors than dominant group members. In sum, oppression takes place because both dominant and subordinate group members behave concordantly to their status, which leads to self-fulfilling prophecies and the perpetuation of the hierarchy (Pratto et al., 2006).

Another central claim of SDT is that group-based hierarchy are maintained through the transmission and adherence to legitimizing myth which are “attitudes, values, beliefs, stereotypes, and ideologies that provide moral and intellectual justification for the social practices” that distribute social value within the social system (Sidanius & Pratto, 1999, p. 45). The legitimizing myths can be subdivided into two categories: hierarchy-enhancing or hierarchy-attenuating. These in turn encourage individuals to either support or reduce inequalities. A specific characteristic of the theory is the insistence on the role of institutions as actors in the maintenance or societal group-based inequalities. SDT posits that social hierarchies are largely created and maintained by social institutions, or organizations. They contend that institutions are able to impact hierarchies to a far greater degree than individuals and as such should appeal to researchers interested in group-based inequality (Kleinlogel & Dietz, 2015). Institutions according to SDT can be hierarchy-enhancing or hierarchy-attenuating; and either “promote and sustain inequality by allocating disproportionately more positive social value or less negative social value to dominant groups than to subordinate groups” or “disproportionately aid members of subordinate social groups (e.g. the poor, ethnic and religious minorities) and attempt to open access to resources otherwise restricted to dominants (e.g. public services).” (Pratto et al., 2006, pp. 276-277).

That is not to say that institutions or social systems can't be subjected to different counter-vailing forces that both can enhance or reduce social inequalities. In the context of schools, as seen in the previous chapter, there is evidence for two competing objectives (i.e. selection or educational function) which lead individuals to either enact a discriminatory behavior or abstain from it. This could suggest that schools are neither overall hierarchy-enhancing or hierarchy-attenuating. There is indirect evidence for this proposition when looking at the socialization effects of universities on students. SDT considers that one way through which hierarchies are reproduced is through hierarchy-enhancing institutions which tend to select and socialize individuals who will present in time high levels of SDO (Sidanius et al., 2004). Sidanius, Pratto, Martin and Stallworth (1991) for instance showed in a sample of over 5000 undergraduate students at the University of Texas that consensually racist attitudes overall declined during the course of university, even though substantial differences were observed between students in “power” majors (i.e. business and law) comparatively to other students. The authors concluded that the institution overall encouraged egalitarianism but noted

the great variability within majors inside the institution. Similarly, Guimond and Palmer (1996) found that across two and a half years within their respective fields of study, commerce students and social science students altered their beliefs about poverty and unemployment—but in opposite directions. Commerce students increasingly used internal attributions (e.g. laziness) to explain poverty and unemployment, while social science students became more likely to explain them with external attributions (e.g. lack of opportunity; see also Guimond, Begin, & Palmer, 1989). These studies confirm the power of institutional socialization in shaping intergroup relations. Specifically, they indicate that universities do not necessarily homogeneously promote hierarchy-attenuating beliefs.

However, some authors have expressed skepticism towards the idea that the hierarchy-attenuated beliefs displayed by highly educated individuals necessarily translate in actual intentions or desire to challenge current inequalities. Kuppens and Spears (2014) suggested that educated group members' expression of tolerance should not necessarily be always taken at face value. Their studies show that on the whole educated individuals present lower level of explicit, but not implicit anti-black prejudice. They also explicitly hold more negative attitudes towards less educated people than do the lower educated about highly educated people (Kuppens, Spears, Manstead, Spruyt, & Easterbrook, 2018). Furthermore, even though educated group members consistently express less prejudice, they often oppose actual political measures which could lead to greater equality in society. These observations have lead the authors to question whether endorsement of tolerant attitudes from educated individuals are always linked to genuine intentions (or behaviors) to achieve an egalitarian context. Rather, their expression of tolerance can also be interpreted as a strategic display which allows those individuals to maintain simultaneously material and symbolic advantages derived from their dominant position and a positive self-image in a normative context which encourages appearances of tolerance (Kuppens, Spears, Manstead, Spruyt, & Easterbrook, 2018). Even among conservatives at university, it was shown that the positive correlation between political ideology and classical racism measures increased as a function of the years spent at university (10% in the first year vs. 34% in the last year). The authors concluded that: "(...) the more intellectually sophisticated the students became, the more their political ideologies could be understood in terms of the desire for White superiority and racial dominance." (Sidanius, Pratto, & Bobo, 1996, p.480). In other words, the authors suggest that higher educational institutions do not necessarily always socialize students to authentically endorse more egalitarian attitudes but lead students to become better equipped to protect their interests in a more socially desirable manner.

3.3. System justification Theory: Implications for social inequalities

System justification has been influential in exposing motivations for both advantaged and disadvantaged group members to uphold the social order or institutions which perpetuate social inequalities. System justification theory, influenced by both SIT and SDT, defines system justification as a: “process by which existing social arrangements are legitimized, even at the expense of personal and group interest.” (Jost, Banaji, & Nosek, 1994, p. 2). The theory states that in addition to motivations to protect one self-image or one’s group, individuals want to – consciously or not- defend the system in which they are embedded, leading individuals to perceive it as fair and legitimate even when said system goes against individual self-interest. This motivation is said to elicit cognitive and ideological attempts to restore this belief when it is challenged. System justification would serve psychological purposes such as the need for structure and closure, or to conserve an illusion of control and avoid the costs of uncertain social change (Jost & Hunyady, 2005; Jost, Pelham, Sheldon, & Ni Sullivan, 2003).

System justification theory slightly deviates from other similar theories such as status quo bias by suggesting that the responses are motivational as well as cognitive. Indeed, Jost and collaborators (1994) proposed that justifying the system fulfills a palliative function for individuals. The theory inspired by cognitive dissonance theory postulates that living in an unjust and unfair system causes psychological discomfort which is dissipated when individuals rationalize the status quo (Kay & Zanna, 2009). The theory also bears resemblance with belief in a just world theory which advances that individuals have a basic need of believing that the world is just (Lerner, 1980). Both theories consider that this motivation can cause individuals to reconstrue contradictory information so as to render it congruent with the belief (Olson & Hafer, 2001). Reasons which underlie the need to believe that the world or specifically the system is fair are to do with the fact that evolving in an environment perceived as uncontrollable is too psychologically threatening. As a consequence, individuals will rather cultivate illusions that people get what they deserve (Jost et al., 1994). System justification’s approach in comparison to just-world theory is less general and psychodynamic. Instead system justification emphasizes the impact of social learning, institutionalized norms, and the power of ideology on motivations to justify the system (Jost, 1996).

In sum, system justification posits that individuals have a tendency to provide cognitive and behavioral support for the system even when it is in contradiction with their individual or group’s interest. They do so because it is cognitively more accessible and psychologically comfortable to support the status quo and because individuals prefer to think of their

environment as being predictable and fair. Furthermore, by defending the system, individuals avoid facing an uncertain future with unforeseen consequences.

Although SDT and system justification make similar predictions concerning the basic need that leads all (high and low status) to support unequal systems and share views concerning the dynamics of consensual social ideology, both theories take distinct approaches when it comes to focusing on high- versus low-ranking individuals in the maintenance of hierarchy (Magee & Galinsky, 2008). At an individual-level, system justification theory suggests that justification of the system provides benefits such as higher well-being and lower distress. This psychological need would hold particularly true for disadvantaged group members whose overall negative circumstances need more justification to alleviate the distress and make sense of hardship; a hypothesis called by Brandt (2013) “the status-legitimacy hypothesis”. While the beneficial effects of system justifying beliefs on well-being have been reliably tested, it remains debated whether this effect is stronger among lower-status individuals. A recent large-scale test of the hypothesis over three different datasets in the United States revealed inconclusive results on this subject (Brandt, 2013).

At the societal level, the consequences of needing to perceive the system as just are that individuals artificially increase the legitimacy of the system and rarely support social change. Indeed, system justification has been associated with the production of legitimizing myths which help keep the system in place. The meritocratic ideology, protestant work ethic, the fair market ideology and the belief in a just world have all been described as system justifying ideologies that perpetuate unequal distribution of resources among social groups (Jost & Hunyady, 2005). Another manifestation of the rationalization of the status quo is the use of stereotypes to explain status differences (Jost & Kay, 2005; Kay & Jost, 2003). In this perspective endorsing existing stereotypes would be a mean to restore belief that the system is just. In the context of social class stereotypes, the portrayal of working class as unintelligent, incompetent, dirty, and unreliable would serve the ideological function of rationalizing their economic circumstances rather than stem from actual differences in groups. Consequently, system justification theory argues that the perpetuation of intergroup inequalities is a byproduct of the motivation to justify the system, which occurs through an internalization process of existing structural arrangements and translates into consensual preferences for current hierarchies.

3.4. Sociocultural approach: An institutional perspective of the reproduction of hierarchies

While the three theories described above have spawned strong research lines dedicated to investigating the reasons why social inequalities are perpetrated in society at large, they have not specifically examined how these dynamics play a role in the school context. Although less influential, the sociocultural approach comes closest to dealing with the potential consequences of societal group oppression in educational systems. The sociocultural approach has given rise to an interpretation of group oppression that some researchers consider a deliberate departure from traditional approaches in social psychology of prejudice, in that in their perspective, oppression does not need to take place in the mind or intentions of individuals, but is impregnated in cultural worlds (Adams, Biernat, Branscombe, Crandall, & Wrightsman, 2008). These authors call for a conceptual shift by proposing that studies on discrimination should not focus solely on the individual process of discriminating individuals but rather on how the context leads to an outcome of discrimination at the aggregate level. In their view, the relations of domination would be maintained through the institutionalization of practices which disserve the dominated, as well as through an ideological framework (Jackman, 1994). The dominated and dominant would be led to share a set of common values and be socialized in an environment that justifies the established order, leading the dominated to oppose little resistance.

The authors consider that as decisions are made -even in institutions- by individuals, it remains necessary to consider how individuals contribute to oppression, but it is also important to integrate structural and individual levels of analyses (Adams et al., 2008). In their view, focus in psychology has been excessively dedicated to analyzing the intentions of perpetrators when intentions are not necessarily relevant to the process. Instead psychologists need to pay attention to cultural models and social representations which taken together provide a sociocultural atmosphere of oppression. Indeed, research from this approach would rather analyze “the socially constructed environments that provide the external scaffolding for individual subjectivity” (Adams et al., 2008, p. 223) than search for an answer to discrimination in individuals’ brains. They advise however against adopting a reductionist approach which would only deviate the attention from biased individuals to biased agentless structures, but instead propose a mutually dynamic relationship between individuals, practices and sociocultural worlds impregnated with an atmosphere of group oppression, which could encourage discriminatory behavior. The sociocultural approach adopts a more situational or contextual approach of oppression in which individuals might engage with behavior in a socio-cultural climate of oppression that becomes discriminatory in specific circumstance without their

differential behavior being generalizable to other contexts. In this perspective, oppression is not seen as an abnormal and rare occurrence but the reflection of normal people's functioning in a specific context where the prevailing norms disadvantages dominated group members.

The suggestions provided by the authors may appear subtle, but the practical implications they entail for researchers are of substance. Admitting that oppression can occur without the explicit or implicit intent allows for a wider definition of what can be considered "racism" or in our case "classism". By taking into account the climate of oppression, the focus is brought back to the experience and opportunities of the dominated group members and not the perpetrators (i.e. dominant group). Furthermore, this conception does not require an actual discriminatory behavior to take place to consider that it conveys a sociocultural climate of oppression that leads the dominated and the dominant to accept and legitimize the current state of affairs.

Based on Bourdieu's original thesis (1978) of "racism of intelligence" and on the sociocultural approach, Croizet (2008) and later Autin (2010) have argued that educational institutions are sociocultural climates which, through their ideological framework essentializing intelligence and abilities, maintain lower social class individuals at the bottom of the academic hierarchy. Croizet (2008) redefines the concept of "racism of intelligence" as a belief stemming from the meritocratic ideology that societal rank reflects differences in intellectual individual abilities. The sociocultural climate of oppression of educational institutions would affect the behavior of the "oppressed" individuals, without having to undergo *per se* differentiated treatment. Croizet (2008) contends that educational institutions are structured around the will to detect this essentialized ability which unfairly sets up lower social class group members for failure leading to the institutionalization of symbolic violence. Secondly, the meanings of school practices are a filter through which students are further lead to interpret their school experiences. This system of interpretation causes them to accept that their difficulties reflect their inferiority (Autin, 2010).

For instance, Adams and collaborators propose that stereotype threat can appear because of an underlying climate of oppression (Adams et al., 2008). Stereotype threat shows there can be actual consequences for the dominated group members without there being any specific perpetrators (Steele & Aronson, 1995). Another manifestation of the effect of a sociocultural climate of oppression is the ability of dominant group members to impose standards and constructions of reality which take the appearance of objectivity, when they might be in part self-interested. A classic example is the theory of cultural mismatch which shows that universities endorse independent models of selves and consider them to be the

standard behavior for students, when it has been demonstrated that those behaviors reflect the socialization process of higher-SES students (Stephens et al., 2012). These examples demonstrate that in a specific climate of oppression, individuals do not need to intentionally oppress to institutionalize practices and standards allowing for the reproduction of a hierarchy.

To sum up, the sociocultural approach inspired by the research “from the target’s perspective” attempts to reconcile how normative environments and individuals come together to produce oppression. In their perspective, it is not imperative for individuals to hold prejudiced views or intentionally discriminate to *in fine* engage in behaviors (or enact norms or practices) which are likely to manifest in the reproduction of hierarchies. By proposing a shift in focus on how context conjure negative consequences for low-status group members rather on the negative intentions of the perpetrators, researchers can lead the way to understand why group-based inequalities persist (Adams et al., 2008).

3.5. Behavioral consequences: Backlash hypothesis

An area of research which has documented negatives consequences for low-status group members that lead to the reproduction of hierarchies is the literature on backlash. Indeed, behavioral manifestations of preferences for current status hierarchies have been repeatedly evidenced in investigations of gender inequalities in organization. Already in 1992, a meta-analysis showed that male leaders benefited from a small overall tendency to receive more positive evaluations than female leaders. This gap in evaluation grew wider when women led in a stereotypically masculine style (Eagly, Makhijani, & Klonsky, 1992). Since then, a growing literature also highlighted the negative consequences for women who displayed stereotypically-inconsistent behaviors.

This effect was coined the “role congruity theory of prejudice” by Eagly & Karau (2002) and was applied to other groups and consequences by Rudman (1998) who proposed that backlash (i.e. social and economic penalties) was a potential explanation for the underrepresentation of women in the workforce. Their argument originated with the observation that women were faced with a catch-22 dilemma in the workplace. To demonstrate their level of competence and become leaders, women have to present themselves as agentic and engage in self-promotion. This impression-management strategy however disconfirms their group’s stereotype of modesty and violate gender norms prescription, leading to negative reactions. In early experiments, women’ self-promotion was met in turn with negative perceptions by other women and less potential opportunities. Specifically, they were seen as less competent, less socially attractive, and subsequently less hireable than the self-promoting

man (Eagly & Karau, 1991). Another experiment determined that female who deviated from their stereotype saw their ability to compete in a competition sabotaged (Rudman & Glick, 1999).

In response to this growing area of studies, Rudman and colleagues developed the status-incongruity hypothesis, which predicts that individual from ascribed low-status groups who endorse or display higher status characteristics violate status expectations. The perceptions of status violations are then met with backlash effects (Rudman, Moss-Racusin, Phelan, & Nauts, 2012). A meta-analysis in 2015 later confirmed the robustness of these effects by showing that dominance affected women likability and hireability comparatively to men even though both were considered as equally competent (Williams & Tiedens, 2016).

Later experiments demonstrated that the defense of gender hierarchy through backlash was indeed maintained by both genders and was motivated by system-justification motives. In their studies, system-justifiers were more likely to engage in backlash and a system-threat manipulation increased prejudice and hiring discriminations against agentic women. The authors concluded that system-justification motives encourage the defense of existing social hierarchies and prompt individuals to penalize deviants who threaten the existence of the hierarchy (Rudman et al., 2012).

These studies show that individuals are motivated to uphold existing hierarchies and act upon them. In turn, these behaviors can lead directly lead to the maintenance of hierarchies. By highlighting the repercussions encountered by low-status group members who display violations of their group's norms, Rudman and colleagues expose the conundrum that face low-status individuals who attempt to climb the ladder: to either endorse typical outgroup characteristics which are necessary to hold positions of power but run the risk of experiencing backlash from others or refrain from deviating at the risk of not seeming capable enough.

3.6. Social mobility: A form of systemic threat to the educational hierarchy?

Although none of the preceding theories have directly addressed why educational hierarchies tend to reproduce, we contend that they are relevant to the question of why individuals could be encouraged to uphold the existing hierarchy. In spite of major divergences in the theories presented with regards to the motives and conditions under which hierarchies tend to reproduce, all concede that institutions hold great power in the dissemination of ideologies encouraging unequal distributions of material and symbolic resources. Indeed, all propose that institutional contexts can encourage consensual perceptions of the intergroup hierarchy, possibly leading to discrimination. Based on work presented in the previous chapter,

we believe that educational institutions are embedded in an ideological framework which promotes the reproduction of social class hierarchies. Drawing more specifically from the sociocultural approach and the status-incongruity hypothesis (itself derived from system justification theory) we contend that schools might be cultural contexts that encourage individuals to uphold hierarchies, even in the face of disconfirming evidence. We suggest that individuals might be motivated to undermine high-performing low-SES students to maintain the existing hierarchy. In light of these arguments, observing divergence from the usual educational hierarchy could instigate restorative reactions against those who deviate in an attempt to reinstate the usual hierarchy.

3.7. Second set of hypotheses

In the first research line, we suggested that the institutional selection function underlying merit-based school practices would lead agents of the system to reproduce the status quo despite achievement being equal. In this second research line, we go one step further and propose that the meritocratic ideology legitimates the current position of students (and of their social class) in the hierarchy in school and perpetuates the notion of the current situation being the product of a legitimate social order. If so, then inducing changes in the hierarchy could be threatening to the status quo and could induce restorative reactions against high-achieving low-SES students. Our predictions were also informed by the status-incongruity backlash literature on gender which demonstrates that deviating from the status of one's group is mainly costly for women rather than for men.

In the context of school, we expect the discrimination to be mostly directed towards the low-status group members (i.e. the low-SES students) as they represent a higher threat to status quo than low-achieving high-SES students. We also predicted that restorative reactions should not be conditional on initial group membership of the evaluator. Rather, we think that the restorative reactions in educational systems are the result of a consensual form of discrimination. Furthermore, our hypothesis proposes that individuals discriminate as a result of a threat against the hierarchy. We therefore do not expect discrimination to be solely driven by negative stereotypes (or lower expectations) of low-SES students. Instead, restorative reactions should only appear when there is a possibility of change in the hierarchy, in the form of social mobility.

In sum, we hypothesized that the disruption of the existing educational hierarchy would motivate evaluators to demonstrate a bias against high-achieving low-SES students, who by violating status expectations represent a threat to the hierarchy. To test this hypothesis, we

examined individuals' reaction when the academic performance of students is presented as challenging social expectations, namely when the social order is disconfirmed, and the possibility of social change is present. When the status-quo is challenged, participants will tend to re-establish the existing social hierarchies, by undermining high-achieving low-SES students comparatively to their high-SES counterparts.

EMPIRICAL PART

FIRST LINE OF RESEARCH

The Function of Selection of Assessment Leads Evaluators to
Artificially Create the Social Class Achievement Gap

The Function of Selection of Assessment Leads Evaluators to Artificially Create the Social Class Achievement Gap¹

Abstract

To understand the persistent social class achievement gap, research has investigated how educational settings affect lower vs. higher socio-economic status (SES) students' performance. We move beyond the question of actual performance to study its assessment by evaluators. We hypothesized that even in the absence of performance differences, assessment's function of selection (i.e., compare, rank and track students) leads evaluators to create a SES achievement gap. In two experiments ($N = 196$; $N = 259$), participants had to assess a test supposedly produced by a high- or a low-SES student and used assessment for selection (i.e. normative grading) or learning (i.e. formative comments). Results showed that evaluators using assessment for selection found more mistakes if the test was attributed to a low- rather than a high-SES student, a difference reduced in the assessment for learning condition. The third and fourth experiments ($N = 374$; $N = 306$) directly manipulated the function of assessment to investigate whether the production of the social class achievement gap was facilitated by the function of selection to a greater extent than the educational function. Results of Experiment 3 supported this hypothesis. The effect did not reach significance for Experiment 4, but an internal meta-analysis confirmed that assessment used for selection led evaluators to create a SES achievement gap more than assessment used for learning, thereby contributing to the reproduction of social inequalities.

Keywords: social class achievement gap, educational institutions, function of selection, evaluator, assessment practices

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Educational Impact and Implications Statement

Evaluators' knowledge about students' social class can bias their assessment, in favor of privileged students. The present research suggests that assessment in itself does not trigger such a bias, nor are teachers biased in themselves; rather it is the function given to assessment that can trigger or prevent discriminatory assessment. This research found that a social class gap in evaluation appears when assessment is used for selective purposes (i.e., gauging merit and sorting students) to a greater extent than when it is used for educational purposes (i.e., fostering learning). The findings indicate that to ensure equality in educational institutions, closer attention should be paid to the role and meaning of assessment.

The Function of Selection of Assessment Leads Evaluators to Artificially Create the Social Class Achievement Gap

In most industrialized countries, educational institutions have developed with the goal to establish a fair society in which social positions are ascribed based on individual merit, irrespective of individuals' social belongings (Bell, 1973; Duru-Bellat, 2006; Turner, 1961). And yet, a wealth of empirical evidence questions the fact that the educational system truly provides equal opportunities and fosters social mobility. For example, international testing such as the Program for International Student Assessment (PISA) consistently shows that, across many countries (65 involved in 2012), low socio-economic status (SES) students are more likely to underperform compared to high-SES students (OECD, 2006, 2013a). To explain the persistent social class achievement gap, some scholars pointed to the way educational institutions function (Bourdieu & Passeron, 1977; Croizet, Goudeau, Marot, & Millet, 2017; Stephens, Markus, & Phillips, 2014). A steadily growing research stream in social and educational psychology has investigated how educational settings create a set of barriers that are success-hindering for low-SES students while supporting high-SES students' performance (e.g., stereotype threat, cultural mismatch; Croizet & Claire, 1998; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). In the present article, we propose to move beyond the question of the processes affecting students' performance and address the processes that contribute to the social class achievement gap via evaluators. We argue that, as educational institutions serve a function of selection (i.e., compare and rank students to guide them toward different social positions), evaluators use assessment practices with a focus on selection, which can lead to the creation of a social class achievement gap even in the absence of objective performance differences.

Educational Institutions and Students' Performance

Many analyses of educational institutions suggest that they play a role in perpetuating social inequalities (e.g., Bourdieu & Passeron, 1977; Croizet & Millet, 2012; Fine & Burns, 2003; Stephens et al., 2014). The way institutions operate can be understood as a social product that not only conveys cultural ideas, values and beliefs (Fiske, Kitayama, Markus, & Nisbett, 1998; Markus & Hamedani, 2007), but also carries traces of power relations between social groups, which participate in the creation, maintenance and justification of inequalities (Adams, Biernat, Branscombe, Crandall, & Wrightsman, 2008; Jackman, 1994). Educational institutions have been created around values, norms regarding language use, bodily posture, self models and forms of knowledge that are close to those of the middle and upper classes (Bourdieu & Passeron, 1977; Croizet, et al., 2017; Stephens, et al., 2014). One consequence is that students

from low status groups suffer harmful effects in these institutions while the experience of individuals from dominant groups is improved (Goudeau & Croizet, 2017; Jury et al., 2017).

In line with these ideas, research has identified a set of characteristics of educational settings that leads low-SES students to underperform and foster the performance of high-SES students. The evaluative dimension of educational settings, by making lower social class students' stereotype of incompetence salient (Cozzarelli, Wilkinson, & Tagler, 2001; Durante & Fiske, 2017), contributes to the SES performance gap (Croizet & Claire, 1998; Croizet & Dutrévis, 2004; Désert, Préaux, & Jund, 2009; Harrison, Stevens, Monty, & Coakley, 2006; Spencer & Castano, 2007). Another line of research argues that the performance gap is fueled by the norms of independence (i.e., express yourself, follow your own path) institutionalized in American universities, that match the middle or upper-class students' upbringing, but mismatch the more interdependent socialization of lower class students¹ (i.e., be responsive to others, work with them and contribute to a community; Stephens et al., 2012; Stephens, Hamedani, & Destin, 2014).

These lines of research are important because they document how educational settings are often organized in a way that leads lower SES students to be outperformed by higher SES students (via stereotype threat, cultural mismatch). As a consequence, they mitigate the interpretation of the social class achievement gap in terms of essentialized differences between students of different social class and pave the way to interventions aimed at reducing the effects of those barriers (see Dittmann & Stephens, 2017; Jury et al., 2017). For instance, Harackiewicz, Canning, Tibbetts, Giffen, Blair, Rouse, and Hyde (2014) have shown that an intervention asking students to write about their most important values serves as a buffer against social identity threat and reduces the social class achievement gap (see also Tibbetts et al., 2016). These results may lead one to think that if the barriers affecting lower SES students' performance were removed then educational institutions would offer real equality of opportunity. Yet, we propose that even in the absence of actual performance differences, other processes are at work for maintaining the social class achievement gap. Thus, we now turn to a set of studies that point to sources of inequalities that go beyond students' performance.

Educational Institutions and Evaluators' Behavior

A parallel line of research has pointed out that teachers' evaluation of performance can be biased by their knowledge of a student's social background (e.g., see Malouff & Thorsteinsson, 2016). For example, Sprietsma (2013) asked German teachers to grade essays of unknown fourth-graders. Typical German or Turkish names were randomly assigned to the same essays. The essays received lower grades when the teachers thought that students with a

migrant background, compared to native students, had produced them. Rangvid (2015) used large-scale data registers to compare teacher scores and external exam scores. Disparities between these scores indicate bias in teachers grading. The study showed notably that pupils with low-educated parents (an aspect of lower social class backgrounds) receive lower teacher scores than pupils with high-educated parents with similar external scores.

The above results strikingly reveal that, even if actual performance is identical, the outcome of assessment is influenced by the students' social background. However, in these studies, discrimination in grading is usually interpreted as an effect of teachers' bias: They hold prejudiced expectations based on the students' social backgrounds, which affect their behavior, even if this discrimination is not intentional. Without underplaying the impact of expectations, we propose that biased assessment cannot be isolated from the sociocultural context in which this behavior is produced. When assessing, teachers act as agents of an institution that conveys specific values and norms and promote specific practices; we thus contend that biased assessment can be interpreted as the product of the way educational institutions are structured and operate.

Two Functions of Educational Institutions

Modernized industrial societies are faced with a paradox: How to reconcile an endorsement of equality of all humans as a fundamental value, with being stratified (i.e., different occupations give unequal access to symbolic and material resources). To find justifiable ways to rank individuals, most Western societies opted for an ascription of social positions based on a characteristic seemingly naturally distributed across individuals: individual merit (Bisseret, 1974; Carson, 2007). Educational institutions became the place where individual differences can be detected, gauged and certified, to give access to the corresponding social positions. The paradox between equality and stratification is thus embodied in educational institutions, which are expected to serve two different functions in society: an educational function, ensuring equality of opportunity, and a function of selection, allowing to sort individuals (Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Dornbusch, Glasgow, & Lin, 1996).

Educational Function

Following the Universal Declaration of Human Rights stating that “everyone has the right to education”, most Western societies implemented compulsory elementary education and free access to public schools. The unrestricted access to education serves as a safeguard for equality of opportunity. The *educational function* of educational institutions refers to their role in equipping all students with knowledge, skills and capacities for learning and helping them

develop their potential. Having all individuals mastering basic knowledge and competence ensures that they can all take part in society (Dubet, 2004; Forquin, 1992; Parsons, 1959). Moreover, the democratization of knowledge is expected to expand opportunities and ensure that no talent is wasted; accordingly, the educational function is perceived as promoting social mobility (Bowen, Kurzweil, Tobin, & Pichler, 2005; Duru-Bellat, 2008).

Function of Selection

If mass education offers to all the opportunity to show their potential, then education institutions fulfill a *function of selection* by sorting individuals into different educational paths and ultimately different occupations. The 2012 PISA survey established that in all 64 countries, educational institutions implement some form of selection practices (OECD, 2013b). They vary from school admission, transfer, grade repetition, tracking into academic or vocational programs, to grouping across and within classes. To illustrate, in 75% of the countries 15-year-old students are tracked into at least two different types of programs, 43% of the students are in academically selective schools, 75% attend schools that use between-classes ability grouping and 49% within-classes grouping. The time and rigidity of this stratification varies between countries; nevertheless, all selection practices have consequences for the students' educational trajectory and at each step of selection, a reduced proportion of the population moves to the most valued tracks.

The different educational lanes are conceptualized as a way to develop the students' potential, meet their needs and assure that they are in the right place (Chmielewski, 2014; LeTendre, Hofer, & Shimizu, 2003). Indeed, the function of selection is intertwined with the meritocratic ideal. Educational institutions are viewed as a neutral context to detect and measure the qualities of students, and select the most deserving students (Carson, 2007; Lemann, 1999). Accordingly, educational institutions have been described as a social filter (Arrow, 1973), or sorting machines (Domina, Penner, & Penner, 2017), since academic credentials have become the supposedly fair basis for ascribing positions in the occupational hierarchy.

To fulfill both their functions – education and selection – educational institutions rely notably on assessment. As a consequence, the distinction between different functions exists in the theorization of assessment. Assessment can serve an educational role of promotion of learning, and a social role of estimation of merit, ranking and certification, namely the function of selection (Filer, 2002; Taras, 2005, 2009; Torrance & Pryor, 1998). We contend that beyond the consequences for students' learning, the two functions underlying assessment can have consequences in terms of social inequalities. This contention builds on research focusing on the function of assessment and inequalities in students' performance. Giving a formative framing

to evaluation, by stating that critical feedback reveals the teacher's belief in the students' potential, improved low-status students' performance (Yeager et al., 2014). On the contrary, reminding students of the function of selection increased their belief in the utility of outperforming others to succeed at college and consequently increased their endorsement of such a performance-approach goal (Jury, Darnon, Dompnier, & Butera, 2017). Endorsing this goal predicted better grades but only for higher social class students (Darnon, Jury, & Aelenei, 2017). More directly related to the present research, assessment presented as a tool for selecting the best students elicited a SES achievement gap on an exam, a gap that was closed when assessment was presented as a tool for learning (Smeding, Darnon, Souchal, Toczec-Capelle, & Butera, 2013). Similarly, simply reminding students of the function of selection of university led lower SES students to underperform compared to higher SES students (Jury, Smeding, & Darnon, 2015). We argue that, as the institutional function of assessment impacts the student's construal of the performance setting, it can likewise influence the evaluator's construal of the assessment setting. We propose that assessment for selection and learning relate respectively to a meritocratic and an egalitarian ethos. In light of the consequences that each ethos begets for the treatment of group members, we propose that assessment for selection might induce more reproduction of inequalities than assessment for learning.

Assessment for Selection and Inequality

Although all forms of assessment can serve both educational and selection functions, grading may especially be relevant for selective purposes, in that it allows normative assessment. Traditionally, normative assessment, or norm-referenced assessment, is conceived as allowing one to compare the performance of the person being assessed to that of other persons (Glaser, 1963). Normative assessment uses indicators such as numerical grades, letters, percentages, or value judgments (e.g., good, excellent), that can also be used in other assessment methods, but perfectly serve the purpose of normative assessment, namely comparison to a standard and across individuals (Rosenholtz & Simpson, 1984; Thorndike, 1913). These indicators summarize performance in a number—or a letter, or a judgment—and thereby constitute an easily interpretable criterion of relative success or failure (Butler, 1987; Butler & Nisan, 1986). In industrialized countries, normative grading constitutes the most widely used method of assessment in educational and professional settings (Knight & Yorke, 2003), and is the main basis for admission to schools and programs (OECD, 2013b).

Beyond the institutional role of grading, this form of evaluation is seen as well suited to select students who are most deserving. The more individuals believed that the function of educational institutions is to select the best students, the more they supported the

implementation of normative grading; this relationship was mediated by the belief that grading fulfills equity justice principles (Autin, Batruch, & Butera, 2015). Other research showed that both teachers and students believe that grade distribution is fair as long as it follows an equity principle (Jasso & Resh, 2002; Resh, 2009; Sabbagh, Faher-Aladeen, & Resh, 2004). These elements highlight the intertwinement of normative grading, the function of selection and the meritocratic ethos, which assumes that rewards should be allocated equitably, on the basis of individual ability and hard work (Son Hing et al., 2011; Wiederkehr, Bonnot, Krauth-Gruber, & Darnon, 2015). This feature of educational institutions, however, is not without consequences in terms of inequalities.

Contexts emphasizing meritocratic selection elicit psychological and behavioral tendencies to justify and maintain social inequalities. Believing in meritocracy decreases perceptions of discrimination in low status groups (McCoy & Major, 2007) and perceptions of privilege in dominant groups (Knowles & Lowery, 2012). Moreover, the perceived violation of meritocratic selection is central in the opposition to social policies that challenge the status quo (Bobocel, Son Hing, Davey, Stanley, & Zanna, 1998; Faniko, Lorenzi-Cioldi, Buschini, & Chatard, 2012; Zdaniuk & Bobocel, 2011). In education, the more students and parents believe in school meritocracy the less they are willing to implement a pedagogical intervention that reduces the SES achievement gap (Darnon, Smeding, & Redersdorff, 2017).

More directly related to the effect of meritocratic assessment on bias in evaluators, Castilla and Benard (2010) found that inducing an organizational culture that emphasizes meritocracy led individuals in a managerial position to favor a male employee over a female employee who achieved similar performance. Closely related to the matter of academic assessment, a recent study had pre-service teachers grade a test that was attributed either to a low- or a high-SES student. When the student was presented as being enrolled in a selective program, pre-service teachers gave a lower grade to the test attributed to a low-SES student comparatively to a high-SES student. The gap in evaluation was reduced if students were supposedly enrolled in a less selective program (Batruch, Autin, & Butera, 2017). It is important to note that we do not suggest that assessment in itself necessarily produces biased evaluations; we propose instead that assessment practices that focus on meritocratic selection, such as normative grading, may lead evaluators to reproduce inequalities in their evaluations.

Assessment for Learning and Equality

Alternative forms of assessment have long been developed, including formative assessment (Black & Wiliam, 1998). It can be defined as assessment providing specific and detailed feedback with the ambition to adjust the teaching and learning activities to the student's

needs and provide relevant comments on how to overcome the difficulties and progress (Frey & Schmitt, 2007; Sadler, 1989). Formative assessment is often opposed to summative assessment, to the extent that the former intervenes during the learning process and the latter at the end of it (Bloom, Hastings, & Madaus, 1971). However, in the present research we do not focus on the temporal aspects of formative assessment, but on its function, that of providing feedback for learning. In particular, among the various existing kinds of formative assessment, we refer to qualitative feedbacks that point to specific learning objectives and suggest ways to improve (Bennett, 2011; Shute, 2008). Formative feedback provides useful information to students: what the expected outcome is and guidance on how to attain it (Sadler, 1989); and most importantly, feedback related to the task reduces the focus on social comparison and enhances the focus on the mastery of the task (Bloom, 1968; Butler, 1987). Because of its focus on the development of competence and knowledge, formative assessment is in line with the educational function.

Equality is central to the rationale for implementing formative assessment. It is presented as a tool to implement a corrective process and reduce the gap between individuals who are unequal before entering school (Crahay, 2012; Perrenoud, 1995). By enabling adjustment to meet the students' needs, formative feedback aims at helping all students to attain a high level of competence, irrespective of their initial abilities. Formative assessment thus seems to convey institutional purposes of education centered on equality. Beyond this institutional role, research shows that people's support for formative feedback is related to the idea that it follows a principle of corrective justice that ensures equality of outcomes through adjustment to the students' needs (Autin et al., 2015).

Importantly, promoting equality has positive effects on the treatment of groups. People's endorsement of egalitarian principles relates to lower levels of stereotyping (Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Moskowitz, Salomon, & Taylor, 2000) and to support for social policies aimed at reducing social inequalities (Zdaniuk & Bobocel, 2011). Invoking the concept of equality induces a more favorable implicit evaluation of an out-group (Zogmaister, Arcuri, & Castelli, 2008). Compared to activating meritocratic values, activating egalitarian values reduces the accessibility of negative stereotypes (Wyers, 2003) and elicits more positive attitudes toward a low status group (Katz & Hass, 1988). It also diminishes the extent to which prejudice relates to avoidance activation in response to low status groups (Wyer, 2010). Thus, we propose that assessment practices oriented toward educational purposes, such as formative feedback, may prevent evaluators from reproducing inequalities in their evaluation.

Hypotheses and Overview

In the present research, we argue that institutional practices of assessment constrain the way individuals in a position of evaluator behave toward students from lower or higher social class. In two experiments, evaluators used assessment practices that convey selective purposes, namely grading or assessment practices oriented toward educational purposes, namely formative comments. We hypothesize that, compared to assessment for learning, assessment for selection leads evaluators to create a larger achievement gap that reproduces existing social inequalities (i.e., low-SES students have a lower performance than high-SES students), even though the actual performance is identical. In a third and fourth experiment, we test that it is indeed the function of assessment, rather than the form of assessment (grade vs. comments), that leads evaluators to differentially evaluate students as a function of their SES.

It should be noted that considering the difficulty to recruit practicing teachers, the studies were conducted with college students playing the role of teachers. Although this is a limitation, we decided to first test our hypotheses and paradigm with an accessible population to be able to conduct well-powered studies. We believe that the long-lasting socialization of the students in the educational institution implies that they are well aware of its functions and practices (see Darnon et al., 2009) and therefore able to enact them. After all, we hypothesize that it is the role of agent of a selective, rather than educational system that should drive the effects. In line with this idea, previous studies showed similar results with students acting as teachers and actual teachers (Batruch, Autin, Bataillard, & Butera, 2018; Rattan, Good, & Dweck, 2012; Simon, Ditrichs, & Grier, 1995)

Experiment 1

Method

Participants. A total of 220 students from a medium-size French-speaking Swiss university participated in return for a 10 CHF (10.30 USD) gift card. At the time of the study, we used a rule of at least 50 participants per cell to determine sample size (Simmons, Nelson, & Simonsohn, 2011). Data collection stopped at the end of the semester considering that the sample size requirement had been reached. Data from 17 non-French native speakers and 7 participants who failed the manipulation check were excluded. The analyses including participants who failed the check are reported in the supplemental material. The final sample comprised 196 students (117 women, 79 men, $M_{age} = 22.29$, $SD_{age} = 1.87$). Participants were randomly assigned to one of the experimental conditions in the Assessment method (grading vs. formative comments) x Target's SES (low vs. high) between-participants design. The target's sex was also manipulated as a control and was not part of our hypotheses. It should be

noted that in Switzerland experiments that do not include physical measures or vulnerable participants do not need permission from an ethical committee and the experiment was conducted in compliance with the APA ethical guidelines. Participants were informed about confidentiality and anonymity of data, right to decline and withdraw without consequences, and whom to contact in case of questions.

Material and procedure. Students were approached in university cafeterias by one of two experimenters and asked whether they would take part in a study about assessment tools used by teachers. Participants received a booklet containing instructions about the assessment method, a description of the target (i.e. the student who produced the test) followed by a dictation to be assessed. Participants read a cover story asking them to imagine that they were a French-language teacher in a secondary school, and to assess a dictation test using a specific method.

Manipulation of the assessment method. Instructions were based on the specific properties of the assessment method reviewed above (i.e., grading vs. formative comments). Participants in the *assessment for selection* condition read that, as a teacher, they were to use a method based only on grades. They were to give students grades depending on the number of mistakes they made. The instructions also referred to the normative aspect of this assessment, that relates to the social function of certification and ranking (cf. Taras, 2009, 2005). Participants read that this method allows checking the student's level and whether he/she met the requirements. They also read that this method allows assessment of the students' learning, their standing compared to a norm that defines success and compared to the other students. This explanation was illustrated with an example of a math test graded with this method.

Participants in the *assessment for learning* condition read that they were to use a method based on formative comments only. They were to make comments to help the students learn from their mistakes. Instruction referred to the educational role of assessment. Participants read that this method explains to students how to improve and to adapt to learning situations. They also read that such method allows assessment of the students' learning and their distance from the learning goals and propose them strategies to meet these goals. This description was illustrated with an example of a math test corrected with this method.

Manipulation of the target's SES. After reading about the assessment method, participants were presented with information about a student allegedly belonging to their class. Participants saw the student file (similar to the official student file in use) and a brief description of his/her extra-curricular activities. Relevant information about the target's SES were presented among neutral information (e.g., date of birth, address, nationality—all targets were

presented as Swiss). SES was manipulated via a series of indicators. The student's first name was manipulated using stereotypical names of higher- vs. lower-SES girls and boys (e.g., "Louis" for a high-SES boy, "Brian" for a low-SES boy, "Charlotte" for a high-SES girl, and "Cindy" for a low-SES girl), based on Coulmont's (2011) work on the sociology of first names. Moreover, parental occupation (mother: director of marketing vs. waitress; father: architect vs. construction workman), number of siblings (1 vs. 4) and extra-curricular activities (e.g., local amusement park vs. traveling to London) were also manipulated. Sex was manipulated through the student's first name and reported sex.

Dictation test. After reading the relevant information about the target, participants had to correct a dictation test. They were asked to first underline all the mistakes. Then, in the *assessment for selection* condition, participants had to give a grade in line with common practice in Swiss schools, i.e., from 1 to 6, with higher numbers indicating better performance. In the *assessment for learning* condition, participants had to write a comment next to each mistake to explain the student what mistake he/she did and how to improve. The test contained 11 obvious mistakes (wrong spelling, wrong verb conjugation and wrong name-adjective agreement) and 6 ambiguous mistakes (two possible conjugations or spellings)².

The booklet ended with some manipulation check items—two asking to report information presented in the description of the target and one asking to rate the socio-economic background of the target (from 1 *highly disadvantaged* to 7 *highly advantaged*)—as well as socio-demographic questions, including self-reported GPA. Finally, participants were thanked and debriefed. As we anticipated that the use of formative comments would take more time than the use of grading, we recorded the time that participants took to complete the study.

Results

Perceived SES. To determine whether the description of the target affected participants' perception of his/her socio-economic status, we analyzed participants' rating of the target's socio-economic background with the full sample except for non-native speakers. The regression included the Assessment Method (assessment for selection coded -0.5, assessment for learning coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5) and the interaction as predictors³. As expected, a main effect of Target's SES was obtained indicating that low-SES targets were perceived as coming from a more disadvantaged background ($M = 3.84$, $SD = .87$, 95% CI [3.67, 4.01]) than high-SES targets ($M = 5.92$, $SD = .75$, [5.77, 6.07]), $b = 2.07$, 95% CI [1.85, 2.31], $t(197) = 18.14$, $p < .001$, $\eta^2_p = .63$, 95% CI [.55, .68]). The main effect of Assessment Method and the interaction did not reach significance, respectively $b = 0.02$, $t(197) = 0.20$, $p = .84$ and $b = 0.27$, $t(197) = 1.19$, $p = .23$. As the vast majority of participants perceived

the targets as belonging to the expected social class, we decided to exclude the 7 participants mentioned in the Participants section because they either perceived a low-SES target's socio-economic background as "advantaged", or a high-SES target's socio-economic background as "average" or "disadvantaged".

Number of mistakes. A preliminary analysis revealed that participants took more time to complete the study when they had to use formative comments ($M = 22.00$, $SD = 6.04$, [20.81, 23.19]), compared to grading ($M = 14.94$, $SD = 4.30$, [14.07, 15.82]), $b = 7.09$, [5.59, 8.58], $t(192) = 9.37$, $p < .001$, $\eta^2_p = .31$, [.21, .41]. Time was not affected by the target's SES or interactions between SES and Assessment Method, respectively $b = 0.59$, $t(192) = 0.78$, $p = .43$ and $b = -0.25$, $t(192) = -0.16$, $p = .87$. We decided to control for time in the analysis of the number of mistakes detected in the dictation test, because the time needed to assess a test could affect the number of mistakes found, but is not a variable of interest here. Following the recommendations for the inclusion of covariates, we tested for possible interactions between the covariate Time and the predictors (Judd, McClelland, & Ryan, 2009). We performed a regression analysis on the total number of mistakes with Assessment Method (assessment for selection coded -0.5, assessment for learning coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5), Time (centered) and all interaction terms as predictors⁴.

Results showed a main effect of Time, with participants detecting more mistakes as they took more time to complete the study, $b = 0.17$, [0.11, 0.24], $t(185) = 5.25$, $p < .001$, $\eta^2_p = .13$, [.05, .22]. The main effect of Assessment Method also reached significance indicating that participants detected more mistakes when using assessment for selection ($M = 10.16$, $SD = 2.53$, [9.57, 10.75]) than assessment for learning ($M = 8.61$, $SD = 2.18$, [8.11, 9.10]), $b = -1.55$, [-2.32, -0.78], $t(185) = -3.97$, $p < .001$, $\eta^2_p = .07$, [.02, .16]. The target's SES also affected the number of mistakes such that participants found more mistakes in the dictation of low-SES students ($M = 9.90$, $SD = 2.54$, [9.33, 10.47]) than in that of high-SES students ($M = 8.87$, $SD = 2.16$, [8.34, 9.39]), $b = -1.03$, [-1.81, -0.26], $t(185) = -2.64$, $p = .009$, $\eta^2_p = .03$, [.00, .10]. Time interacted with Assessment Method, $b = -0.17$, [-0.29, -0.04], $t(185) = -2.55$, $p = .01$, $\eta^2_p = .03$, [.00, .10] and with the Target's SES, $b = -0.15$, [-0.28, -0.02], $t(185) = -2.33$, $p = .02$, $\eta^2_p = .03$, [.00, .09]. The positive relationship between time and the number of mistakes was stronger in the grading compared with the formative comments condition and for low-SES students compared with high-SES students. The expected interaction between SES and method was not significant, $b = 0.92$, [-0.62, 2.47], $t(185) = 1.18$, $p = .24$, $\eta^2_p = .01$, [.00, .05], Cohen's $d = .19$, but in the expected direction, suggesting a greater gap in the number of mistakes

between low and high SES students in the assessment for selection condition than in the assessment for learning condition.

However, these effects were qualified by a three-way interaction between Time, Assessment Method and Target's SES, $b = 0.46$, $[0.20, 0.72]$, $t(185) = 3.52$, $p < .001$, $\eta^2_p = .06$, $[.01, .14]$. This interaction, depicted in Figure 1, was unexpected but made sense given the effect of time, and was therefore decomposed by assessment method. In the assessment for selection condition, the positive relationship between time and the number of mistakes was significantly stronger for low-SES targets than for high-SES targets, $b = -0.38$, $[-0.60, -0.17]$, $t(185) = -3.50$, $p < .001$, $\eta^2_p = .06$, $[.01, .14]$. In other words, the more participants spent time assessing a dictation test with grading, the more they found mistakes, especially if the target was from a low socio-economic background. As a result, participants who took a moderate and long time to complete the study in the assessment for selection condition found on average respectively 1.50 (95% CI for b $[-2.68, -0.31]$), and 3.90 (95% CI for b $[-6.22, -1.59]$) more mistakes in the dictation of a low-SES student than in the dictation of a high-SES student, respectively $t(185) = -2.50$, $p = .01$, $\eta^2_p = .03$, $[.00, .10]$, and $t(185) = -3.33$, $p = .001$, $\eta^2_p = .06$, $[.01, .13]$. In the assessment for learning condition, the positive relationship between time and the number of mistakes did not significantly differ as a function of Target's SES, $b = 0.08$, $[-0.07, 0.22]$, $t(185) = 1.07$, $p = .28$, $\eta^2_p = .01$, $[.00, .05]$.

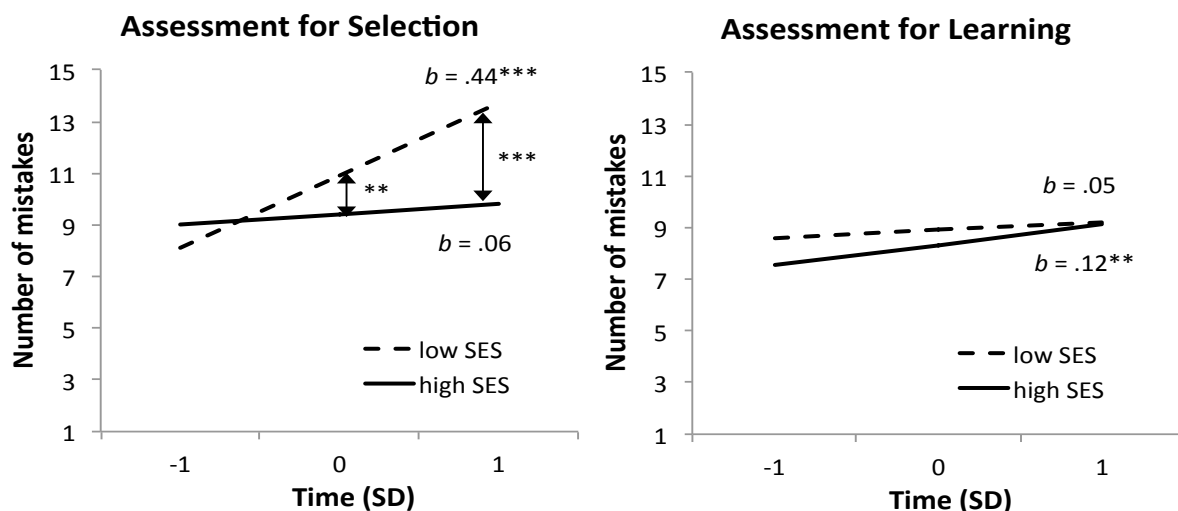


Figure 1. Experiment 1. Relationship between the time taken to complete the study and the number of mistakes found in the dictation as a function of target's SES and assessment method.

Note. $**p \leq .01$, $***p < .001$.

Supplementary analyses.

Grades. To better understand the mechanisms at work in the assessment for selection condition, we analyzed how mistakes affected the participants' grading of the test (given the design, grades were only available for the assessment for selection condition). Grades were analyzed in a regression with the Target's SES (low-SES coded -0.5, high-SES coded 0.5), the number of mistakes (centered) and the interaction term as predictors⁵. The analysis revealed a main effect of the number of mistakes, such that the more mistakes were detected the lower the grade, $b = -0.14$, $[-0.18, -0.09]$, $t(87) = -6.38$, $p < .001$, $\eta^2_p = .32$, $[.17, .45]$. The main effect of SES was not significant, $b = 0.22$, $[-0.02, 0.45]$, $t(87) = 1.85$, $p = .07$, $\eta^2_p = .04$, $[.00, .14]$. The interaction between the number of mistakes and the target's SES was significant, $b = 0.09$, $[0.009, 0.19]$, $t(87) = 2.19$, $p = .03$, $\eta^2_p = .05$, $[.00, .16]$. As can be seen in Figure 2, the negative relationship between the number of mistakes and the grade was stronger for low-SES targets, $b = -0.19$, $[-0.25, -0.13]$, $t(87) = -6.07$, $p < .001$, $\eta^2_p = .29$, $[.15, .43]$, compared to high-SES targets, $b = -0.09$, $[-0.15, -0.03]$, $t(87) = -2.96$, $p = .004$, $\eta^2_p = .09$, $[.01, .22]$. This suggests that mistakes led to a more negative evaluation when they were produced by low-SES students. Importantly, this negative evaluation resulted in more low-SES students performing below the passing grade (4, in Swiss schools). In the sample, we observed that 32.5 % of the low-SES targets received a grade lower than 4 but this proportion dropped to 16.6 % for the high-SES targets.

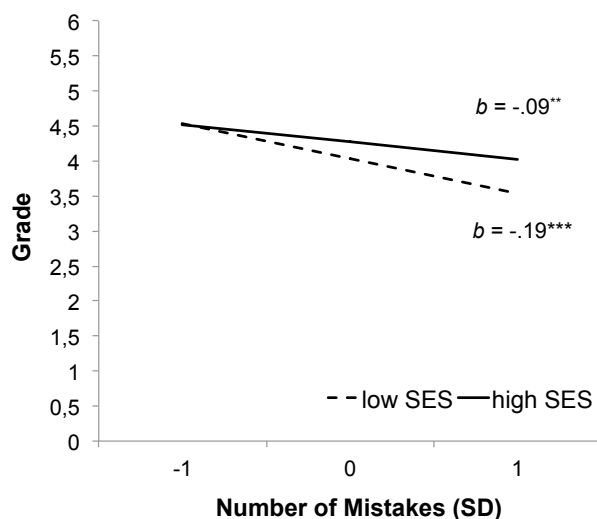


Figure 2. Experiment 1. Relationship between the number of mistakes and the grade as a function of target's SES.

Note. ** $p \leq .01$, *** $p < .001$.

Impact of participants' characteristics. We tested whether participants' own characteristics could account for or moderate the results observed on the number of mistakes. We looked at the effect of participants' level of competence, gauged by self-reported GPA, and their own social class, indicated by whether at least one of their parents has a college degree ("continuing generation") or not ("first generation"). The analyses are presented in detail in the supplemental material but including the participants' level of competence or their social class did not change the observed results and no significant moderation was observed.

Discussion

This first experiment was designed to test the hypothesis that assessment for selection, more than assessment for learning, would lead evaluators to reproduce existing social inequalities and find lower performance for low-SES students than for high-SES students, even though the actual performance was identical. The target's SES x assessment method interaction that tested this hypothesis was not significant, although in the expected direction. Participants found on average 1.49 more mistakes in the low-SES test than in the high-SES test when using assessment for selection, a SES performance gap reduced to .57 in the assessment for learning condition. The size of this effect is small ($\eta^2_p = .01$, Cohen's $d = .19$) but we believe it should not be disregarded. Indeed, students in the member countries of the Organisation for Economic Co-operation and Development (OECD, e.g., USA, Australia, Latvia, Korea, Germany, Mexico) receive on average 9 years of compulsory education and can expect to receive 17 years of study over their lifetime (OECD, 2006). During this time, assessment is a frequent and important part of the students' experience so small biases could have a large impact in the long run.

The significant time x SES x assessment method interaction, although unexpected, indicates that the hypothesized creation of an SES performance gap by participants using assessment for selection is stronger as participants spend more time on the study. We interpret this effect as a consequence of the participants' engagement in the study. It is possible that those who quickly completed the study paid less attention to the instructions and the test and were then less affected by the manipulations. The findings observed among those who spend more time on the study are in line with the idea that evaluators asked to use a traditional, normative form of assessment, artificially produce a performance gap that corresponds to the existing status asymmetry more than evaluators who use a form of assessment more oriented toward learning.

It is interesting to note that, when using assessment suited for selection, the mistakes produced by low-SES students were judged in a more punitive way, as indicated by an average

decrease in grades of .19 points for every mistake made whereas making a mistake resulted in a loss of .09 points for high-SES students. Ultimately, we observed a rate of low-SES students below the pass threshold two times higher than the rate of high-SES students. This effect is consistent with previous research showing that evaluators can redefine their assessment criteria (i.e., what is a weakness or a strength) in a way that fits with the candidates of the desired groups, thereby providing a justification for discriminatory decisions (Norton, Vandello, & Darley, 2004; Uhlmann & Cohen, 2005). For our participants who used normative grading, mistakes became less of a weakness when produced by a high- than a low-SES student. This finding further supports the idea that the practice of grading may lead evaluators to restrain the success of low status students (see also Batruch et al., 2017).

Supplementary analyses considered the impact of the participants' competence (i.e., self-reported GPA) and social class. In all cases, the interaction between target's SES, assessment method and time remained significant and was not further moderated. This rules out the idea that variations in competence could explain the results. Moreover, participants' own social class did not affect their behavior toward the target, which suggests that the bias against the lower SES students does not reflect an intergroup bias (Hewstone, Rubin, & Willis, 2002). It thus seems that our work does not fall in the scope of intergroup feedback. This literature focuses on communication of praise and criticism across the group divides (Croft & Schmader, 2012; Crosby & Monin, 2007). Studies showed that majority-group evaluators restrain themselves from giving warning and critical feedback to minority students in order to not appear prejudiced. In our research, we hypothesized that participants endorsed their role of agents of the educational institution and acted as such, beyond their own social identity. The results supported this contention. The bias in assessment would result from the institutional logic embodied in the role of evaluator rather than from intergroup dynamics.

The unexpected interaction with the time spent on the task raises questions. The longer time needed to use formative assessment might indicate the greater cognitive and motivational costs of such method, which requires one to identify and explain in simple words the rules underlying each mistake and to think of ways to improve. It remains possible that, even after accounting for time, the cost of formative assessment contributed to the lower number of mistakes found by participants using this method. To rule out this interpretation we conducted a second study in which we equalized the motivational and cognitive costs of the two assessment methods.

Experiment 2

Method

Participants. A total of 269 students from a medium-size French-speaking Swiss university voluntarily took part in the study. Data collection stopped at the end of the semester considering that we achieved the minimum of 50 participants per cell of the 2 (SES) by 2 (Assessment Method) design. Data from 10 participants were excluded because they were suspicious ($N = 6$) or failed the manipulation checks ($N = 4$) (see supplemental material for analysis with the full sample). The final sample consisted of 163 women, 93 men, 3 unspecified ($M_{\text{age}} = 21.55$, $SD_{\text{age}} = 2.35$). Each participant was randomly assigned to one of the experimental condition in the Assessment method (for selection vs. for learning) x Target's SES (low vs. high) between-participants design. The target's sex was also manipulated as a control and was not part of our hypotheses.

Material and procedure. Students were approached in university cafeterias by the experimenter and asked to take part in a study about assessment tools used by teachers. The procedure was similar to the one followed in Experiment 1. The main difference was in the instructions about assessment. Participants in the *assessment for selection* condition read that they would have to give a grade, while participants in the *assessment for learning* condition would have to write formative comments. However, to equalize the motivational and cognitive costs of the two assessment methods, and hopefully time spent on the task, participants were asked to only underline the mistakes “for the time being”, and told that they will be asked to give the grade or write the comments at a later stage (but were actually never asked to do so). The dictation test was a slightly modified version of the one used in Experiment 1 and contained 14 obvious mistakes (thus, 3 additional mistakes as compared with Experiment 1) and 6 ambiguous mistakes. At the end of this task, participants moved on to the following pages of the booklet. In the last section, participants answered the manipulation checks and the socio-demographic questions⁶. Finally, participants were thanked and debriefed.

Results

Perceived SES. Participants' perception of the target's SES was analyzed in a regression with Assessment Method (assessment for selection coded -0.5, assessment for learning coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5) and the interaction term as predictors. The analysis was run on the sample that excluded suspicious participants ($N = 263$, but 1 missing value). As expected, Target's SES had a main effect on ratings, $b = 2.16$, $[1.97, 2.34]$, $t(258) = 22.94$, $p < .001$, $\eta^2_p = .67$, $[.61, .72]$. The low-SES targets were perceived as coming from a more disadvantaged background ($M = 3.87$, $SD = .78$, $[3.74,$

4.00]) than the high-SES targets ($M = 6.03$, $SD = .75$, [5.90, 6.16]). The main effect of Assessment Method and the interaction between Assessment Method and Target's SES did not reach significance ($b = -0.13$, $t(258) = -1.35$, $p = .18$ and $b = 0.07$, $t(258) = 0.38$, $p = .71$). We excluded 4 participants, mentioned in the Participant section, who did not properly perceive the target's SES.

Time to complete the study. An important goal of this study was to test the hypothesis without the methodological problem related to the difference in time needed to perform the two types of assessments that we observed in Experiment 1. We analyzed the time taken by participants to complete the study in a regression including Assessment Method, Target's SES and the interaction as predictors⁷. The analysis indicated that participants took a similar amount of time when they used grades ($M = 13.51$, $SD = 3.29$, [12.93, 14.09]) and formative comments ($M = 13.15$, $SD = 3.92$, [12.47, 13.83]), $b = -0.36$, $t(254) = -0.78$, $p = .43$. No SES main effect or interaction reached significance, $b = -0.24$, $t(254) = -0.54$, $p = .59$ and $b = 0.44$, $t(254) = 0.48$, $p = .63$.

Number of mistakes. We analyzed the number of mistakes detected by the participants in the dictation test in a regression with Assessment Method, Target's SES and the interaction as predictors. Results showed no main effect of Assessment Method, $b = -0.01$, [-0.67, 0.65], $t(255) = -0.03$, $p = .98$, $\eta^2_p = .00$, [.00, .00] and a main effect of the Target's SES, indicating that again participants detected more mistakes in the dictation of low-SES targets ($M = 12.09$, $SD = 2.66$, [11.62, 12.55]) than in that of high-SES targets ($M = 11.29$, $SD = 2.674$, [10.83, 11.75]), $b = -.80$, [-1.46, -0.14], $t(255) = -2.39$, $p = .02$, $\eta^2_p = .02$, [.00, .07]. The predicted Target's SES x Assessment Method interaction was significant, $b = 1.37$, [0.06, 2.68], $t(255) = 2.05$, $p = .04$, $\eta^2_p = .02$, [.00, .06], Cohen's $d = .26$. As shown in Figure 3, when participants used assessment for selection, they found a greater number of mistakes in the dictation attributed to low-SES students ($M = 12.43$, $SD = 2.86$, [11.77, 13.09]) compared with high-SES students ($M = 10.95$, $SD = 2.69$, [10.29, 11.61]), $b = -1.48$, [-2.42, -0.55], $t(255) = -3.12$, $p = .002$, $\eta^2_p = .04$, [.01, .09]. This difference was not significant when participants used assessment for learning ($M_{low-SES} = 11.74$, $SD_{low-SES} = 2.41$, [11.09, 12.39]; $M_{high-SES} = 11.63$, $SD_{high-SES} = 2.77$, [10.97, 12.28]), $b = -0.11$, [-1.04, 0.81], $t(255) = -0.23$, $p = .81$, $\eta^2_p = .00$, [.00, .02]. The participants' self-reported GPA and social class did not account for, or moderate these results (see supplemental material for detailed analyses).

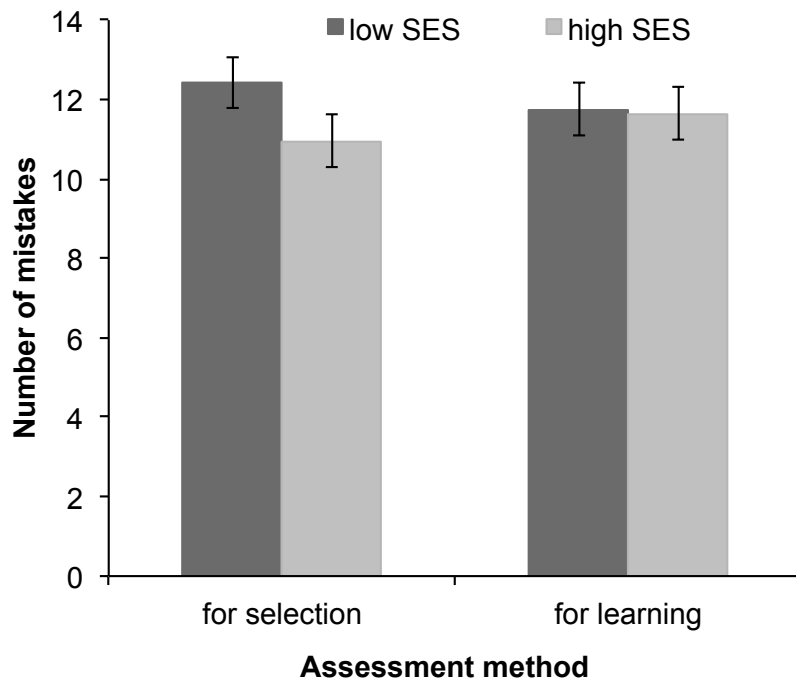


Figure 3. Experiment 2. Number of mistakes found in the dictation as a function of the target's SES and the assessment method. Error bars represent the 95% confidence intervals.

Discussion

This study intended to test our hypothesis without the interference of the effect of time. To do so, we asked all participants to underline the mistakes in the dictation test, and only mentioned that they would write the formative comments or provide a grade (depending on the condition) at a later stage. Results showed that after equalizing the motivational and cognitive costs of assessment, participants took approximately the same amount of time to complete the task, regardless of the condition. As in Experiment 1, participants found a greater number of mistakes in the dictation tests of low- as compared with high-SES students. More importantly, the predicted Assessment Method x Target's SES interaction was significant. As expected, a significant social class achievement gap was artificially produced by participants who used assessment for selection, but not by participants who used assessment for learning. Participants who used assessment for selection reported on average 1.48 more mistakes in the test of low-SES students than in the test of high-SES students. Again, the participants' characteristics did not moderate this effect.

In the theoretical development of our hypothesis, we argued that the impact of normative grading on the creation of social class inequalities is due to the fact that this method epitomizes the function of selection of educational institutions. This assumption was grounded in research showing that, from the perspective of students, assessment oriented toward selection triggered

a greater SES performance gap than assessment for learning (Smeding et al., 2013) and that, from the perspective of evaluators, adherence to the function of selection related to more support for grading (Autin et al., 2015). We conducted a third experiment to directly test the hypothesis that the selective purposes of assessment, usually conveyed by normative grading, is indeed what underlies evaluators' tendency to artificially produce performance differences based on students' SES, whatever the actual form assessment takes.

Experiment 3

To test this hypothesis, we manipulated the function of assessment, to induce either selective or educational purposes. We expected that evaluators would create a social class achievement gap when assessment is framed as a way to select the best students more than when it is presented as a tool to improve learning. This hypothesis could lead to observe two possible effects. The function of selection may potentiate the effect of normative grading in the creation of the social class gap and the educational function may potentiate the egalitarian effect of formative comments. In this case, a Function of Assessment x Assessment Method x Target's SES interaction should emerge. However, since we conceptualize assessment methods as tools to fulfill a specific institutional purpose it is also possible that the function of assessment overrides the effect of assessment tools (i.e., grading vs. formative comments). In this case, a Function of Assessment x Target's SES interaction should emerge.

Method

Participants. A total of 501 students from a medium-size French-speaking Swiss university voluntarily took part in the study in the cafeterias on campus or in class (data were collected in several classes, resulting in a field-related diversity similar to the data collected in cafeterias). We decided to double the sample size, and data collection was contingent on the class we had access to and the end of the semester. Each participant was randomly assigned to one of the experimental conditions in the Assessment Method (assessment for selection vs. assessment for learning) x Target's SES (low vs. high) x Function of Assessment (selection vs. education) between-participants design. To avoid increasing the complexity of the experimental design, and as target's sex was not a variable of interest, this factor was not included in the present design; we only used boys as targets. Data from 10 participants were excluded because they expressed suspicion, were unable to assess the test or were not students. Data from 117 participants were excluded because they failed the manipulation checks regarding the Target's SES ($N = 37$), the Function of Assessment ($N = 74$) or both ($N = 6$) (see supplemental material for analysis with the full sample). The number of participants per condition ranged from 40 to 52. We believe this high number of failures can be explained by the lack of involvement from

students in the collective sessions in class, a recruitment method that we did not use in the two previous experiments. Even though they were explicitly asked to carefully read the instructions, failure on the manipulations checks indicate that they did not read the main instructions or that they refused to comply with them. More importantly, including participants who were unable to accurately report the function of assessment might prevent us from properly testing the main hypothesis of this study: the underlying role of this structural factor in the creation of a SES gap. We thus considered that the validity of these data was questionable and that including them would increase noise (Oppenheimer, Meyvis, & Davidenko, 2009). The final sample of 374 students consisted of 212 female, 153 male, 9 unspecified ($M_{age} = 22.39$, $SD_{age} = 2.65$).

Material and procedure. The procedure was similar to the one followed in Experiment 2. After reading about the assessment method they have to use, and the profile of the target, participants were required to assess the dictation test. At the top of the page containing the dictation test, we presented a reminder of the assessment method and the specific instructions about the function of the assessment. Participants in the *selection* condition read that the mistakes they would find in the test would eventually help them to decide whether the student should move to next grade or not. Participants in the *education* condition read that the mistakes they would find in the test would help them to propose learning strategies that allow the student to improve. After they underlined the mistakes in the test, participants answered the manipulation checks and the socio-demographic questions⁸. Finally, participants were thanked and debriefed.

Results

Perceived SES. Perception of the students' socio-economic background was analyzed in a regression with Assessment Method (assessment for selection coded -0.5, assessment for learning coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5), Function of Assessment (selection coded -0.5, education coded 0.5) and all interactions as predictors. The analysis was conducted on the sample of non-suspicious participants ($N = 491$, but 3 missing values). The Target's SES influenced the perception of socio-economic background in the expected direction ($M_{lowSES} = 3.88$, $SD_{lowSES} = .92$, [3.77, 3.99]; $M_{highSES} = 5.97$, $SD_{highSES} = .79$, [5.86, 6.08]), $b = 2.09$, [1.93, 2.24], $t(480) = 26.49$, $p < .001$, $\eta^2_p = .59$, [.54, .64]. No other effects reached significance ($ts < 1.60$, $ps > .11$). Among the participants excluded, 37 were taken out from the final sample because they did not correctly report the target's socio-economic background.

Number of mistakes. The number of mistakes found in the test was analyzed in a regression with Assessment Method, Target's SES, Function of Assessment and all interactions

as predictors⁹. The analysis revealed a significant interaction between the Function of Assessment and the Target's SES, $b = 1.34$, $[0.12, 2.56]$, $t(365) = 2.16$, $p = .03$, $\eta^2_p = .01$, $[\.00, \.04]$, Cohen's $d = .20$. As shown in Figure 4, when participants thought the assessment was aimed at selecting the students, they found more mistakes in the test of a low-SES students ($M = 12.71$, $SD = 2.75$, $[12.07, 13.35]$) than in the test of a high-SES student ($M = 11.59$, $SD = 2.94$, $[10.98, 12.20]$), $b = -1.12$, $[-2.00, -0.24]$, $t(365) = -2.50$, $p = .01$, $\eta^2_p = .02$, $[\.00, \.05]$. This social class gap was not significant when the assessment was presented with an educational purpose, ($M_{lowSES} = 11.44$, $SD_{lowSES} = 3.35$, $[10.84, 12.05]$; $M_{highSES} = 11.66$, $SD_{highSES} = 2.84$, $[11.08, 12.14]$), $b = 0.22$, $[-0.62, 1.06]$, $t(365) = 0.51$, $p = .61$, $\eta^2_p = .00$, $[\.00, \.02]$. The three-way interaction between Assessment Method, Function of Assessment and Target's SES did not reach significance, $b = 1.72$, $[-0.72, 4.15]$, $t(365) = 1.38$, $p = .16$, $\eta^2_p = .01$, $[\.00, \.03]$. These results were not impacted or further moderated by the participant's level of competence or social class (see supplemental material).

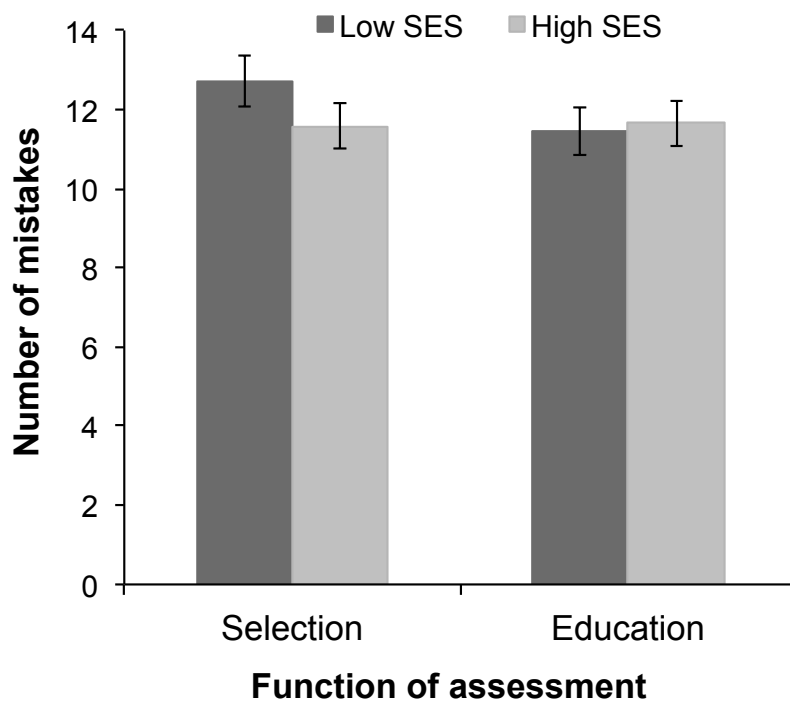


Figure 4. Experiment 3. Number of mistakes found in the dictation as a function of the target's SES and the function of assessment. Error bars represent the 95% confidence intervals.

Discussion

This study sought to test the hypothesis that the selective (rather than educational) role of assessment is the mechanism that leads evaluators to create a performance gap that

corresponds to existing status asymmetries in the absence of actual differences in performance. Results supported our hypothesis: The Function of Assessment x Target's SES interaction revealed that when assessment was presented as a way to select the best students, evaluators found on average 1.12 more mistakes in a dictation supposedly produced by a low-SES student than in that attributed to a high-SES student. This artificial performance gap was reduced when assessment was presented as a way to help students improve. The results did not show a significant moderating effect of the assessment method (i.e., assessment for selection vs. learning). These findings suggest that it is not so much normative grading and formative comments per se that lead evaluators to respectively create or not a social class performance gap, but rather the function attributed to the assessment tools.

However, a high number of participants had to be excluded in particular for not properly reporting the function of assessment. This raises concerns about the design and suggests a possible conflict between instructions about the assessment method and the function of assessment. For example, it might have been difficult for participants to understand or comply with the instruction of both looking for mistakes to help improve learning and decide whether the student should move to the next grade. This is actually not surprising if we consider that the function of selection is positively associated with support for grading whereas negatively associated with support for formative comments (Autin et al., 2015). Contradicting the usual associations might have led to unpredictable consequences on the participants' behavior.

Therefore, we designed a fourth study to test the hypothesis that it is the function of assessment that triggers or not the creation of a SES performance gap. To avoid confusion between the assessment tools and their functions, we kept the assessment tool constant. Because of the link between normative grading and formative comments, and selective and educational functions, we decided not to use these assessment methods. Rather, we relied on a less common procedure based on the highlighting of sections of the student's work. Participants had to highlight in two different colors the positive and negative aspects of an essay (see Croft & Schmader, 2012, for a similar design). The fourth study thus aims to replicate the previously observed findings on a different measure of evaluation.

Moreover, this assessment tool provides information about both positive and negative feedback, which could shed light on how the SES performance gap is created. Indeed, in the previous studies, we observed the creation of a difference between the low- and high-SES student but could not definitely determine whether this difference resulted from negative behavior against the low-SES student or advantage given to the high-SES student. Indeed, inequalities were traditionally framed as the product of discrimination, bias against low status

groups but they actually also result from favoritism, bias for high status groups (e.g., Adams et al., 2008). Some even argue that in societies where hostility toward low status groups and intergroup conflicts are not acceptable, favoritism is more prevalent (Brewer, 1999; DiTomaso, 2015; Greenwald & Pettigrew, 2014). Disentangling the processes at play behind the creation of the social class achievement gap is not the central question addressed in the present paper, yet we could expect that when evaluating an essay with a selective purpose, if participants discriminate against low-SES students, they will provide more negative feedback to this student compared to a high-SES student. If participants favor high-SES students, they might provide more positive feedback to this student compared to a low-SES student. When assessment is used with an educational purpose, these differences should be attenuated.

Finally, the fourth study investigated a potential conflation between the educational vs. selection function of assessment and a growth vs. fixed mindset. A sizable literature showed that individuals can adopt a growth mindset that refers to the belief that one's qualities are malleable and expandable through learning, or a fixed mindset that corresponds to the belief that qualities are unchangeable (Dweck, 2012). Rattan, Good and Dweck (2012) showed that instructors with a fixed theory of intelligence, compared to a malleable theory, attribute low ability to low-performing students and give them less engaging feedback. Because the induction of the educational function focuses evaluators on improvement and learning, it might be associated with a growth mindset. Conversely, the function of selection focuses evaluators on the student's stance relative to the requirement and might relate to a fixed mindset. We included a measure of the evaluators' perception of the malleability of students' intelligence to test whether the function of assessment affects their mindset.

Experiment 4

Method

Participants. A total of 335 students in a French university participated in the study, in exchange for course credit ($N = 227$) or were recruited in a university library ($N = 108$). We aimed for at least 50 participants per cell; as we anticipated attrition, we oversampled. Twenty-eight participants were excluded for not being able to report the function of assessment ($N = 7$), the SES of the target ($N = 19$) or both ($N = 3$) (see supplemental material for analyses on the full sample). The final 306 participants (246 women, 57 men, 3 unspecified, $M_{\text{age}} = 19.69$, $SD = 3.80$) have been randomly assigned to one of the experimental conditions in the Function of Assessment (selection vs. education) x Target's SES (low vs. high) between-participants design.

Material and procedure. Participants had to imagine that they were a history teacher who has to assess an essay produced by an 8th grade male student using a new assessment tool. They had to highlight in one color (yellow) the parts of the essay that were well written (i.e., clear, logical, important for the structure of the text) and in another color (orange) the parts that needed to be revised (i.e., unclear, misplaced regarding the logical organization of the text, spelling, syntax or grammar errors). An example was provided.

Manipulation of the function of assessment. To emphasize the *function of selection*, half of the participants read that their evaluation of the student's skills counted toward his semester GPA. Evaluating the essay would give them information to decide whether the student should move to the next grade or not by identifying his strengths and weaknesses in this kind of exercise. To focus the other half of the participants on the *educational function*, they read that their evaluation of the student's skills was part of a learning program. Evaluating the essay would give them information to help the student improve his learning by identifying strategies to make progress in this kind of exercise.

Manipulation of the student's SES. Participants were then asked to read the file of the student who supposedly produced the essay. The files were similar to the ones used in Experiment 3 but adapted to the French context. The target's SES was manipulated by changing the student's name, parental occupation and extracurricular activities.

Implicit theories of intelligence. Eight items were adapted from Souchal and Toczek (2010) to measure participants' conception of students' intelligence. Four items referred to an entity theory (e.g., "Students have a certain level of intelligence and no matter what they do, it can not change") and 4 to an incremental theory (e.g., "Students' intelligence grows with every new experience they live"). A factor analysis revealed one factor (value = 2.69, 33.6% of explained variance) including the four entity items and 2 incremental items (reversed). We then computed a score of entity by averaging the scores on these items (Cronbach's $\alpha = .78$).

After completing the questionnaire, participants assessed the essay. They were briefly reminded of the Function of Assessment and of the instructions regarding the use of highlighters to provide positive and negative feedback. The essay was a picture of a 20 line-long handwritten text inspired from actual essays. The number of characters highlighted in each color was computed as indicators of the quantity of positive (yellow) and negative (orange) feedback.

After the assessment of the essay¹⁰, participants reported the function of the assessment, two types of information presented in the student file and estimated his background on a 7-point scale (1 "highly disadvantaged" to 7 "highly advantaged"). They provided socio-

demographic information (age, sex, parental level of education and occupations), were thanked and debriefed.

Results.

Perceived SES. Participants' perception of the target's SES was analyzed on the full sample in a regression with the Function of Assessment (selection coded -0.5, education coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5), and the interaction term as predictors¹¹. Results showed a main effect of Target's SES, $b = 1.75$, [1.56, 1.94], $t(328) = 18.34$, $p < .001$, $\eta^2_p = .51$, [.43, .57]. The low-SES target was perceived as coming from a more disadvantaged background ($M = 3.98$, $SD = 0.86$, [3.84, 4.11]) than the high-SES target ($M = 5.72$, $SD = .88$, [5.59, 5.86]). The Function main effect and interaction did not reach significance, $b = -0.09$, $t(328) = -0.91$, $p = .36$ and $b = -0.09$, $t(328) = 1.13$, $p = .26$.

Ratio of negative feedback. We computed the number of characters highlighted in each color as indicators of negative and positive feedback. We calculated a ratio of negative feedback relative to the total amount of positive and negative feedback such that higher scores indicate more negativity in the evaluation. This ratio was created to have a negative evaluation indicator that is comparable to evaluation in our previous studies (i.e. finding mistakes in a test). This ratio was analyzed in a regression with the Function of Assessment (selection coded -0.5, education coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5), and the interaction as predictors¹². The results showed no main effect of the Target's SES, $b = -0.03$, [-0.05, 0.00], $t(300) = -1.82$, $p = .07$, $\eta^2_p = .01$, [.00, .05] or the Function of Assessment, $b = -0.004$, [-0.03, 0.02], $t(300) = -0.29$, $p = .77$, $\eta^2_p = .00$, [.00, .02]. The expected interaction between SES and Function did not reach significance, $b = 0.03$, [-0.03, 0.08], $t(300) = 0.91$, $p = .36$, $\eta^2_p = .00$, [.00, .03], Cohen's $d = .10$. However, this interaction was in the expected direction with a larger difference in ratio between low and high SES students when the assessment was meant to select ($M_{\text{low SES}} = .42$, $SD_{\text{low SES}} = .12$, [.39, .44] vs. $M_{\text{high SES}} = .38$, $SD_{\text{high SES}} = .13$, [.35, .41]) rather than to improve learning ($M_{\text{low SES}} = .40$, $SD_{\text{low SES}} = .12$, [.38, .43] vs. $M_{\text{high SES}} = .39$, $SD_{\text{high SES}} = .13$, [.36, .42]).

Positive and negative feedback. The number of characters highlighted was analyzed in a 2 (Function of Assessment: selection vs. education) X 2 (Target's SES: high vs. low) X 2 (Type of Feedback: negative vs. positive) mixed ANOVA with the last factor as a within-participant factor¹³. The analysis revealed a main effect of the Type of feedback, $F(1, 299) = 189.34$, $p < .001$, $\eta^2_p = .39$, indicating that participants gave more positive feedback ($M = 418$, $SD = 189$) than negative feedback ($M = 272$, $SD = 133$). This effect was qualified by an interaction with the Target's SES, $F(1, 299) = 7.05$, $p = .008$, $\eta^2_p = .023$, 90 % [.00, .06].

Participants gave more positive feedback to a high SES student ($M = 446$, $SD = 204$, [413, 479]) compared to a low SES student ($M = 392$, $SD = 171$, [365, 419]), $F(1, 299) = 5.98$, $p = .015$, $\eta^2_p = .02$, [.00, .05]. This difference between SES was not significant for negative feedback, $F(299) = .38$, $p = .54$, $\eta^2_p = .00$, [.00, .01]. No other effect reached significance $F_s < 2.53$, $p_s > .11$, $\eta^2_p < .01$, including the expected interaction between the Type of feedback, SES and the Function of Assessment, $F(299) = 0.03$, $p = .86$, $\eta^2_p = .00$, [.00, .01].

Entity theory of intelligence. The score of belief in an entity theory of intelligence was analyzed in a regression with the Function of Assessment (selection coded -0.5, education coded 0.5), Target's SES (low-SES coded -0.5, high-SES coded 0.5), and the interaction as predictors¹⁴. The main effect of Function that would indicate an impact of that induction on mindset did not reach significance $b = 0.02$, [-0.14, 0.18], $t(298) = 0.25$, $p = .80$, $\eta^2_p = .00$, [.00, .01]. The main effect of SES and the interaction also were non-significant, respectively $b = 0.05$, [-0.12, 0.21], $t(298) = 0.55$, $p = .59$, $\eta^2_p = .00$, [.00, .02] and $b = -0.23$, [-0.55, 0.10], $t(298) = -1.36$, $p = .17$, $\eta^2_p = .01$, [.00, .04].

Supplementary analyses investigating the impact of the participants' own social class were conducted (see supplemental material for the details) and showed no change or moderation of the described results.

Discussion

This study first aimed at testing the hypothesis that the function of selection, while keeping the assessment tool constant, triggers the creation of a SES performance gap, compared to the educational function. The analysis on the ratio of negative feedback showed a pattern that was congruent with this hypothesis, but the effect was not significant. The results on the number of characters highlighted showed an overall favoritism of the higher social class student. Irrespective of the function of assessment, participants provided more positive feedback to the high-SES student than the low-SES student. This result is in line with the idea that nowadays the creation of inequalities relies on a favorable bias for high status group members who are offered more positive experience (e.g., DiTomaso, 2015). However, further replication of this effect is needed as we initially predicted that it would appear only when the context emphasizes on selection. Moreover, a possible way to disentangle favoritism toward the high-SES student from negative treatment toward the low-SES student could be to include a control condition with no information about the target's SES (i.e., anonymous). This would provide information about whether it is the low-SES condition that triggers more negative assessment than the control or the high-SES condition that triggers more positive assessment, or whether both discrimination and favoritism are at play.

A secondary goal of this study was to examine whether the function of assessment could impact the evaluators' mindset, with selective purposes fostering a more entitative theory of the student's abilities than educational purposes. The results are not in line with this proposition. Previous research showing changes in mindset used direct intervention by telling participants that intelligence is fixed or can grow (Rattan, Savani, Chugh, & Dweck, 2015). It could be that information about the function of assessment is not sufficiently powerful to affect the mindset. Yet, some studies suggest that mindsets are also sensitive to subtle information such as praise or generic statements about categories (i.e., talking about boys in general instead of a boy in particular) (Cimpian & Markman, 2011; Mueller & Dweck, 1998). At this stage, the impact of the function of assessment on the belief in an entity theory of intelligence remains an open question although the effect size ($\eta^2_p = .00$, [.00, .01]) could suggest a possibly negligible effect.

Finally, it should be recognized that the sample of this experiment presents an imbalance in terms of gender and recruitment location. Such an imbalance makes it difficult to test the effects of these variables, but as the personal characteristics of the participants do not seem to alter the observed effects (see Supplemental Material), we believe that this asymmetry should not be a source of concern.

Meta-analysis

We ran a small-scale meta-analysis on the four experiments and combined the evidence from our studies to estimate more precisely the size of the effect of interest (Cumming, 2013). We estimated the effect size of the moderation of the SES performance gap by the orientation of assessment toward selection (i.e., grading or selection function) or education (i.e., formative comments or educational function). We computed the standardized mean difference corresponding to the difference of simple effects of SES between the selection and education assessment practices $[(\bar{X}_{lowSES_selection} - \bar{X}_{highSES_selection}) - (\bar{X}_{lowSES_education} - \bar{X}_{highSES_education})]/2*sp$ (where sp is the pooled SD) (Westfall, 2015). In Experiment 1, we used the effect size of the SES x Assessment Method interaction at a moderate time spent on the study. In Experiment 4, we used the effect size of the SES x Function of Assessment interaction on the ratio of negative feedback, as this measure is the functional equivalent to the number of mistakes measured in the previous three studies. We used a weighted random-effects model (Cumming, 2013). A weighted model lowers the contribution of studies with higher variance around the effect size. Random effects models take into account the heterogeneity between studies and postulates that different studies can estimate different effect sizes. The analysis revealed a small and significant effect size, $d = 0.19$, $p = .002$, [0.07; 0.30]. The variance index between the four studies was not significant, suggesting low heterogeneity

between studies $Q(df = 3) = 0.84, p = .84$. This internal meta-analysis provides evidence that evaluators artificially create a greater SES performance gap when assessment is used to select rather than foster learning. The effect size is small but we nonetheless believe it should be interpreted in light of the length of education and the frequency of assessment. Very small differences in repeated evaluations can have important consequences on the overall experiences and educational outcomes of students when they are accumulated.

General Discussion

A growing line of research has addressed the question of the cultural and structural determinants underlying the social class achievement gap (e.g., Croizet & Claire, 1998; Stephens et al., 2012). This endeavor has been particularly valuable in revealing the sociocultural influences that contribute to the social class inequalities. However the majority of these studies have focused on the psychological processes (e.g., stereotype threat, cultural mismatch) that actually impact the academic performance of students. In the present research, we argue that, in addition, a new stream of research should emerge that addresses how evaluators' behavior contributes to the social class achievement gap, independently of the students' actual performance. We proposed that the endemic use of normative grading in education, given its strong association with the meritocratic ideal and the function of selection of educational institutions, leads evaluators to reproduce existing social class asymmetries. On the contrary, assessment in line with the educational function and an egalitarian ethos should reduce the impact of the student's social class on evaluation. More specifically, we hypothesized that evaluators should differentially assess the work produced by low- and high-SES students when using assessment for selection, even in the absence of any objective differences. This tendency should be reduced when using assessment for learning.

Two experiments consistently showed that when evaluators used an assessment method oriented toward selection (i.e., normative grading; cf. Autin et al., 2015), they actively detected more mistakes for low-SES students than for high-SES students. This effect emerged in a dictation test that objectively contained the same number of mistakes in all conditions (with a moderation by the time spent on the task in Experiment 1). The creation of such an artificial social class achievement gap was not observed when evaluators used an assessment method oriented toward education (i.e., formative comments). We believe that a strong asset of these results is the use of a behavioral measure – the number of mistakes that participants actually found in the test – that did not allow participants to control the social desirability of their responses (Dompnier, Darnon, & Butera, 2009).

Two other experiments manipulated the mechanism that we assumed to explain the results observed in the first two experiments: the function of assessment. Indeed, we expected that evaluators reproduce in their assessment existing social class asymmetries when using normative grading because this form of assessment epitomizes the function of selection of educational institutions. The results provide convergent support for this hypothesis. In Experiment 3, making the function of selection of assessment salient led evaluators to find significantly more mistakes for low-SES students than for high-SES students, regardless of the assessment method they used. Such a differential treatment was no longer significant when the educational function of assessment was made salient. The replication of this finding with a different assessment tool (i.e., highlighting sections in the student's essay) showed a consistent but not significant pattern in the ratio of negative feedback. This is why we conducted a small-scale meta-analysis, to test the overall support to our main hypothesis received from the four studies. Overall, the results of the meta-analysis supports the hypothesis that even in the absence of objective differences in performance, social class inequalities can be perpetuated by evaluators who re-create an achievement gap, especially when the selective purpose of assessment is put to the fore.

The fourth study secondarily aimed at specifying how the social class achievement gap was created in the selection context, by using both negative and positive feedback. This question goes beyond the scope of the present article, as the primary goal here was to document the creation of a SES performance gap. Yet, we postulated that inequalities are the byproduct not only of negative treatment against low status individuals but also of the privilege of high status individuals (e.g., Adams et al., 2008). The results showed an overall effect of favoritism toward high-SES students. This unexpected effect calls for further investigation but is consistent with an understanding of the mechanisms of inequalities that emphasizes the implication of favoritism. For example, it has been observed that high-status individuals receive advantages, and especially better evaluation from both high- and low-status actors (DiTomaso, Post, Smith, Farris, & Cordero, 2007). Previous research documented how higher social class students benefit from many aspects of the educational institutions such as valued forms of knowledge, language or posture, compatible self-models and boosting evaluative settings (Bourdieu & Passeron, 1977; Croizet et al., 2017; Lareau, 2011; Stephens, Markus, et al., 2014). The present results suggest that evaluator's behavior during assessment might also be one of the privileges that enhance the academic experience of higher social class students.

Contribution to Ongoing Debates

The first contribution of the present research is to participate in the growing effort to bring the study of social class at the core of social and educational psychological investigations (Fiske & Markus, 2012). Alongside previous research directly studying student performance (e.g., Goudeau & Croizet, 2017; Jury et al., 2015), the present article unveils a new path through which social class inequalities are reproduced in schools via the assessment produced by evaluators. Our research suggests that, even if the educational system could offer a matching and non-threatening environment to all students, evaluators could still artificially create a social class achievement gap when they assess with selective purposes. Beyond the mechanisms that affect students' performance, educational institutions provide inequality of opportunities via the selective setting in which evaluators are socialized.

The second contribution pertains to research in sociology of education. Observing that evaluators create a social class achievement gap is in line with the classic sociological theory of social reproduction, and in particular with the proposition that agents of institutions play an important role in the reproduction of social inequalities (Bourdieu & Passeron, 1977). Our research provides experimental evidence of the evaluators' implication in social reproduction, and singles out an institutional factor that underlies the extent to which educational agents are prone to create social inequalities: the selection vs. educational function of assessment.

Finally, our findings are consistent with previous research in educational sciences showing discrimination by evaluators in assessing the same product attributed to students of different backgrounds (e.g., Sprietsma, 2013). However, the existing literature had only investigated this phenomenon in settings using grading, and the comparison with alternative forms of assessment offers new insights. Not only because this comparison shows that discriminatory behavior is not inherent to assessment, but also—and especially—because it shows that evaluators do not always act in a biased manner. Regarding the discriminatory behavior previously observed in grading, our results suggest that it would be better interpreted as the product of the selective purposes conveyed by such assessment practices, rather than biased individual evaluators. This result is consistent with qualitative work showing that changing the tools (e.g., replacing grades with formative comments) is not enough to change the vision of assessment, and that ultimately teachers use all forms of assessment primarily with quantifying and ranking purposes (McNair, Bhargava, Adams, Edgerton, & Kypros, 2003). Moreover, teacher's use of assessment has been related to the requirement of educational institutions stemming from their societal role of selection (Gewirtz, 2000; Hall, Collins, Benjamin, Nind, & Sheehy, 2004; Popham, 2001). Our research concurs with an analysis of

assessment practices as contingent on the institutional function they serve. Through the prism of selection, all forms of assessment might produce inequalities in evaluation.

Overall, the present research pleads for a sociocultural approach of inequalities (Adams et al., 2008; Markus & Stephens, 2017) that highlights the intertwining of individuals with institutions in their production (see also Kraus & Park, 2017). Social class inequalities cannot be reduced to consequences of direct and intentional actions of biased individuals (i.e., biased evaluators), or to byproducts of agentless institutions that mechanically exclude lower social class students and favor higher social class students (i.e., biased schools). We rather propose that the educational institutions' logic shapes evaluators' behavior, and in turn low- and high-SES students' experience. More specifically, the functions of educational institutions seem to affect the way evaluators make sense of the assessment situation and prompt them to differentially evaluate students' performance based on their social class.

Limitations and Conclusion

Several limitations of the present research should be acknowledged. First, the studies were conducted with students who were put in the position of a teacher, and not real teachers. Replicating these findings with teachers would certainly increase their ecological validity, but we do not expect any remarkable difference. Indeed, our theoretical approach is precisely that institutional norms and functions shape their agents' behaviors; thus, the observed effects should be reproducible with actual teachers, as they have been socialized in the very context that we have experimentally induced in our experiments. Furthermore, previous research used role-playing paradigms and showed that participants adjust their attitudes to the role (Covington & Omelich, 1979; Harari & Covington, 1981; Houston & Holmes, 1975). Finally, our results are consistent with those obtained in research conducted with teachers (e.g., Hinnerich, Höglin, & Johannesson, 2015; Rangvid, 2015, Sprietsma, 2013).

Second, more research is needed to understand the psychological mechanisms at play in the discriminatory behavior of evaluators. The present research proposed a sociocultural approach and therefore, in the last two experiments, we manipulated a structural-level mechanism (i.e., the function of selection vs. education) believed to underlie the creation of the social class achievement gap. However, future research may also be interested in individual-level variables induced by both functions of assessment. We argued that assessment for selection relates to a meritocratic ethos whereas the assessment for learning relates to an egalitarian ethos (Autin et al., 2015). Egalitarianism and meritocratic values have contrasted consequences in terms of stereotyping and attitudes towards groups (e.g., Wyer, 2003) and are involved in the reduction/maintenance of inequalities (e.g., Costa-Lopes, Dovidio, Pereira, &

Joste, 2013). The perception of egalitarian vs. meritocratic values is therefore a possible mechanism underlying the effect of assessment for learning vs. selection on the creation of a social class performance gap. Downstream mechanisms could also be explored. For example, assessment as an apparatus of meritocratic selection might give participants a greater sense of objectivity than assessment to foster learning. Feelings of objectivity are known to increase bias in decisions (Uhlmann & Cohen, 2007). Assessment for selection also requires more a firm, non-ambiguous response (to give a grade, to decide about grade repetition) than assessment for learning. The desire for clear-cut answer – known as need for closure – relates to biases in thinking (Webster & Kruglansky, 1998), and high need for closure can be involved in discrimination in grading (Kruglansky & Freund, 1983). It is therefore possible that the discriminatory behavior observed in the present studies is partly due to the higher need for closure triggered by the selection context compared to the educational context. It is also possible that different processes simultaneously occur when evaluators focus on educational purposes. For example, participants might feel more accountable for their evaluation when told that they have to write formative comments or suggest learning strategies to improve, and accountability reduces bias in decisions (Lerner & Tetlock, 1999; Uhlmann & Cohen, 2007). Finally, the possibility that the processes underlying the inequality-enhancing effect of selection are different from those underlying the inequality-attenuating effect of education relates to another limitation: the absence of a control condition for the function of assessment.

It is impossible to conclude from the present experiments whether the effects are due to the assessment for selection conditions or to assessment for learning conditions. However, in the current sociocultural and educational context it seems unlikely to have a control assessment condition that doesn't conjure an institutional function. Given that normative grading is by far the most widespread assessment method (Knight & Yorke, 2003), and that the social class achievement gap is present in all OCDE countries (OECD, 2013a), we believe that an “ecological” control condition (e.g., “please, assess this dictation test”) would probably be interpreted as the assessment for selection conditions. Moreover, creating a “neutral” control condition (without any form of assessment; e.g., “please, find all the mistakes in this dictation to prove your skills”) would be pointless, as in such a condition the participant would no longer be an evaluator. The difficulty to have a control condition explains why, as the majority of research investigating the factors contributing to inequalities in education (see Jury et al., 2017; Croizet et al., 2017), we compared a situation where these factors are at play to a situation where they are actively countered.

To conclude, this line of research challenges the idea that educational institutions operate a meritocratic selection based on an objective assessment of individuals' qualities. This idea is not only a fallacy, as shown by previous results (e.g., Croizet & Claire, 1998), but it might contribute in itself to the reproduction of social inequalities by leading evaluators to actively create a social class achievement gap. There is a growing literature demonstrating how the way educational institutions operate is involved in the reproduction of social inequalities (e.g., Croizet et al., 2017; Jury et al., 2017). Our research adds to this literature by identifying a structural factor –the function of selection of assessment– that shapes the role of evaluators in the creation of a social class achievement gap, even when there are no actual differences in performance.

Footnotes

¹ In the various lines of research presented in this section, social class is operationalized in different ways. In some studies, it refers to socio-economic status (e.g., Croizet & Claire, 1998), whereas in other to socio-cultural status (e.g., first/continuing generation to attend University; Stephens et al., 2012). A comparison of the various aspects of social class is beyond the scope of the present work, and has been reviewed by others (Goudeau, Autin, & Croizet, 2017; Kraus, Callaghan, & Ondish, 2017). We have referred to these various lines of research without highlighting the differences in operationalization to the extent that in all of these studies social class refers to a social background that relates to more or less chances of success in education.

² The booklet also included a questionnaire measuring the predicted future success of the target and the perception of the assessment method and of academic performance. These measures are not relevant for the hypothesis presented here, and we did not report the results, but they are available upon request from the authors.

³ Two values are missing because participants did not fill the item.

⁴ Three outliers were excluded from the analysis due to uncommon deleted studentized residual, centered leverage values and abnormal residuals.

⁵ One outlier was excluded from the analysis due to uncommon Cook's distance and deleted studentized residuals.

⁶ The booklet also included a questionnaire measuring the predicted future success of the target, the rating of the test and tracking recommendations. These measures are not relevant for the hypothesis presented here, and we did not report the results, but they are available upon request from the authors.

⁷ One missing value

⁸ The booklet also included a questionnaire measuring the predicted future success of the target and the rating of the test. These measures are not relevant for the hypothesis presented here, and we did not report the results, but they are available upon request from the authors.

⁹ One outlier was excluded due to uncommon deleted studentized residual.

¹⁰ The booklet also included an evaluation of the essay on a 10-point scale. The results are available upon request from the authors

¹¹ Three participants did not fill the item

¹² Two outliers were removed from the analysis due to elevated cooks' distances and studentized deleted residuals

¹³ Three participants were excluded due to abnormal residuals, elevated cooks' distances and studentized deleted residuals

¹⁴ Four outlier was excluded due to abnormal residuals, elevated cooks' distances and studentized deleted residuals

Supplemental Analyses

Impact of the participants' characteristics

In this section, we present analyses on the impact of the participants' characteristics on the results observed in each experiment. We included the participants' level of competence, gauged by self-reported GPA, and their own social class, indicated by whether at least one of their parents has a college degree ("continuing generation") or not ("first generation"). We used the generational status to represent social class because we collected the parents' level of education and occupation but not their income. Without this information and considering the ambiguity of occupation labels (e.g. "plumber" can refer to someone working as an employee or someone owning a business), it would have been difficult to create an SES index.

Experiment 1

GPA. We analyzed the total number of mistakes found in the dictation test in a regression that included target's SES, assessment method, time (centered), self-reported GPA (centered) and all interactions as predictors (15 participants did not report their GPA). GPA had no significant main effect on the number of mistakes, $b = 0.33$, $[-0.76, 1.43]$, $t(166) = 0.61$, $p = .55$. The interaction between SES and assessment method was not affected (i.e. similar parameters), $b = 0.61$, $[-1.08, 2.32]$, $t(166) = 0.72$, $p = .47$, $\eta^2_p = .00$, $[\.00, \.04]$. The interaction between target's SES, assessment method and time was not affected and remained significant, $b = 0.31$, $[0.02, 0.59]$, $t(165) = 2.13$, $p = .03$, $\eta^2_p = .03$, $[\.00, \.09]$. This interaction was not moderated by GPA, $b = 0.63$, $[-0.24, 1.51]$, $t(166) = 1.42$, $p = .16$, $\eta^2_p = .01$, $[\.00, \.06]$.

Social class. We analyzed the total number of mistakes and used target's SES, assessment method, time (centered), generational status (first generation coded -0.5, continuing generation coded 0.5) and all interactions as predictors (2 participants did not report their parent's level of education). Participants' own social class had no significant main effect on the number of mistakes, $b = -.09$, $[-0.92, 0.74]$, $t(179) = -0.21$, $p = .83$. The interaction between SES and assessment method was not affected, $b = 0.75$, $[-0.95, 2.46]$, $t(179) = 0.87$, $p = .38$, $\eta^2_p = .00$, $[\.00, \.04]$. The interaction between target's SES, assessment method and time was not affected and was significant, $b = 0.39$, $[0.11, 0.67]$, $t(179) = 2.73$, $p = .007$, $\eta^2_p = .04$, $[\.00, \.11]$. This interaction was not moderated by participant's social class, $b = 0.12$, $[-0.46, 0.70]$, $t(179) = 0.40$, $p = .68$, $\eta^2_p = .00$, $[\.00, \.03]$.

Experiment 2

GPA. We analyzed the number of mistakes found in the dictation test in a regression with assessment method, target's SES as predictors as well as self-reported GPA (centered) and

all interactions (11 participants did not report their GPA). GPA had no significant main effect $b = 0.19$, $[-0.68, 1.07]$, $t(240) = 0.43$, $p = .67$. The predicted interaction between assessment method and target's SES remained similar although no longer significant, $b = 1.24$, $[-0.09, 2.58]$, $t(240) = -1.83$, $p = .07$, $\eta^2_p = .01$, $[\.00, \.06]$. This interaction was not moderated by GPA, $b = -2.17$, $[-5.68, 1.32]$, $t(240) = -1.22$, $p = .22$, $\eta^2_p = .01$, $[\.00, \.04]$.

Social Class. A regression analysis was run with the two predictors Target SES and Assessment Method, and the participants' generational status (first generation coded -0.5, continuing generation coded 0.5) and all interactions (Two participants did not report their parent's level of education). The main effect of participants' own social class was not significant, $b = -.54$, $[-1.20, 0.13]$, $t(249) = -1.59$, $p = .11$. The interaction between SES and assessment method was not altered and remained significant, $b = 1.46$, $[0.13, 2.78]$, $t(249) = 2.16$, $p = .03$, $\eta^2_p = .03$, $[\.00, \.06]$. Participant's social class did not interact with the two other predictors, $b = -1.09$, $[-3.75, 1.56]$, $t(249) = -0.81$, $p = .42$, $\eta^2_p = .00$, $[\.00, \.03]$.

Experiment 3

GPA and Social Class. We analyzed the number of mistakes in two regressions including as predictors target's SES, assessment method, function of assessment along with self-reported GPA (centered) and all interactions or generational status (first generation coded -0.5, continuing generation coded 0.5) and all interactions (21 participants did not report their GPA and 2 their parent's level of education). GPA had no significant main effect $b = 0.28$, $[-0.49, 1.06]$, $t(336) = 0.71$, $p = .47$. The interaction between the function of assessment and the target's SES remained unaffected and significant, $b = 1.41$, $[0.13, 2.69]$, $t(336) = 2.17$, $p = .03$, $\eta^2_p = .01$, $[\.00, \.05]$. This interaction was not moderated by GPA, $b = -0.25$, $[-3.36, 2.86]$, $t(336) = -0.16$, $p = .87$, $\eta^2_p = .00$, $[\.00, \.01]$.

Participant's social class had no main effect on the number of mistakes, $b = -.39$, $[-1.00, 0.21]$, $t(355) = -1.23$, $p = .20$. The target's SES x function of assessment interaction was unaltered and significant, $b = 1.22$, $[0.01, 2.44]$, $t(355) = 1.97$, $p = .05$, $\eta^2_p = .01$, $[\.00, \.04]$. Participant's social class did not interact with target's SES and function of assessment, $b = 0.96$, $[-1.48, 3.39]$, $t(355) = 0.77$, $p = .44$, $\eta^2_p = .00$, $[\.00, \.02]$.

Experiment 4

The self-reported GPA was not recorded in this experiment.

Social Class. Participant's generational status (first generation coded -0.5, continuing generation coded 0.5) was included in a regression on the ratio of negative FB, with also target's SES, function of assessment and all interactions as predictors (2 participants did not report their parent's level of education). Participants' generational status had no main effect, $b = -.01$, $t(294)$

= -0.90, $p = .37$. The interaction between target's SES and Function was still non-significant, $b = .29$, $t(294) = 1.02$, $p = .31$ and not moderated by the participant's social class, $b = -.07$, $t(294) = -1.21$, $p = .23$.

The number of character highlighted was analyzed in a 2 (function of assessment: selection vs. education) X 2 (SES: high vs. low) X 2 (generational status: first vs. continuing) X 2 (type of feedback: negative vs. positive) mixed ANOVA with the last factor as a within-participant factor. Participants' social class had no main effect, $F(1, 292) = 0.00$, $p = .95$. The interaction between Type of feedback (negative vs. positive) and target's SES remained unaltered, $F(1, 292) = 6.55$, $p = .01$, $\eta^2_p = .02$, [.00, .06]. The expected interaction between SES, Function and Type of feedback was still non-significant, $F(1, 292) = 0.02$, $p = .88$, $\eta^2_p = .00$, [.00, .01] and was not significantly further moderated by the participant's social class, $F(1, 292) = 2.97$, $p = .09$, $\eta^2_p = .01$, [.00, .04].

Analysis on the full samples

In this section, we present the same analysis as those presented in the main manuscript but they were run on the full samples, that is including those who failed the manipulations checks.

Experiment 1

The analyses were conducted on the full sample of French-speaking participants ($N = 203$).

Number of mistakes. A preliminary analysis revealed that participants took more time to complete the study when they had to use formative assessment compared to normative assessment, $b = 6.88$, 95% CI [5.42, 8.35], $t(199) = 9.25$, $p < .001$, $\eta_p^2 = .30$, [.20, .39]. Time was not affected by the target's SES or the interaction between variables ($b = 0.50$, $t(199) = 0.67$, $p = .50$ and $b = 0.15$, $t(199) = 0.11$, $p = .91$). Consequently, we included the time taken by each participant to complete the study in the analysis of the number of mistakes detected in the dictation test. We performed a regression analysis on the total number of mistakes with assessment method (normative coded -0.5, formative coded 0.5), target's SES (low-SES coded -0.5, high-SES coded 0.5), time (centered) and all interaction terms as predictors¹.

Results showed a main effect of time, with participants detecting more mistakes as they took more time to complete the study, $b = 0.17$, [0.10, 0.23], $t(193) = 5.27$, $p < .001$, $\eta_p^2 = .13$, [.05, .21]. The main effect of the assessment method reached significance, $b = -1.63$, [-2.39, -0.87], $t(193) = -4.24$, $p < .001$, $\eta_p^2 = .09$, [.02, .17]. The target's SES main effect was not significant, $b = -0.56$, [-1.31, 0.20], $t(193) = -1.44$, $p = .15$, $\eta_p^2 = .01$, [.00, .06]. Time interacted with assessment method, $b = -0.16$, [-0.28, -0.03], $t(193) = -2.48$, $p = .01$, $\eta_p^2 = .03$, [.00, .09] but not with SES, $b = -0.08$, [-0.20, 0.05], $t(193) = -1.19$, $p = .24$, $\eta_p^2 = .01$, [.00, .05]. The expected interaction between SES and method was not significant, $b = 0.06$, [-1.46, 1.57], $t(193) = 0.08$, $p = .94$, $\eta_p^2 = .00$, [.00, .01]. Finally, these effects were qualified by a three-way interaction between time, assessment method and the target's SES, $b = 0.31$, [0.05, 0.56], $t(193) = 2.40$, $p = .02$, $\eta_p^2 = .03$, [.00, .09]. This interaction was decomposed by assessment method. In the normative condition, the positive relationship between time and the number of mistakes was significantly stronger for low-SES targets than for high-SES targets, $b = -0.23$, [-0.43, -0.02], $t(193) = -2.19$, $p = .03$, $\eta_p^2 = .02$, [.00, .08]. In the formative condition, the positive relationship between time and the number of mistakes did not statistically differ as a function of target's SES, $b = 0.08$ [-0.07, 0.22], $t(193) = 1.05$, $p = .29$, $\eta_p^2 = .01$, [.00, .04].

Grades. Grades were analyzed in a regression with the target's SES (low-SES coded -0.5, high-SES coded 0.5), the number of mistakes (centered) and the interaction term as predictorsⁱⁱ. The analysis revealed a main effect of the number of mistakes, such that the more mistakes were detected the lower the grade, $b = -.14$, $[-0.19, -0.10]$, $t(92) = -6.40$, $p < .001$, $\eta_p^2 = .31$, $[.16, .44]$. The main effect of SES was not significant, $b = .22$, $[-0.01, 0.45]$, $t(92) = 1.89$, $p = .06$, $\eta_p^2 = .04$, $[.00, .14]$. The interaction between the number of mistakes and the target's SES did not reach significance but was in the expected direction, $b = .09$, $[-0.00, 0.18]$, $t(92) = 1.95$, $p = .06$, $\eta_p^2 = .04$, $[.00, .14]$. The negative relationship between the number of mistakes and the grade was stronger for low-SES targets, $b = -.19$, $[-0.25, -0.12]$, $t(92) = -5.95$, $p < .001$, $\eta_p^2 = .28$, $[.13, .41]$, compared to high-SES targets, $b = -.10$, $[-0.16, -0.04]$, $t(92) = -3.13$, $p = .002$, $\eta_p^2 = .10$, $[.01, .22]$.

Experiment 2 ($N = 269$)

Time to complete the study. We analyzed the time taken by participants to complete the study in a regression including assessment method and target's SES and the interaction as predictors. The analysis indicated that participant took a similar amount of time when they used a normative method ($M = 13.49$, $SD = 3.25$, $[12.94, 14.04]$) and a formative method ($M = 13.13$, $SD = 3.94$, $[12.45, 13.80]$), $t < 1$. The main effect of target's SES and interaction did not reach significance, $ts < 1$, $ps > .74$.

Number of mistakes. We analyzed the number of mistakes detected by the participants in the dictation test in a regression with assessment method, target's SES and the interaction term as predictorsⁱⁱⁱ. Results showed no main effect of assessment method, $b = -.08$, $[-0.73, 0.57]$, $t < 1$, $p = .79$ and a main effect of the target's SES, $b = -.67$, $[-1.32, -0.02]$, $t(264) = -2.04$, $p = .04$, $\eta_p^2 = .02$, $[.00, .06]$. The predicted target's SES x assessment method interaction was no longer significant but in the expected direction, $b = 1.17$, $[-0.13, 2.47]$, $t(264) = 1.77$, $p = .08$, $\eta_p^2 = .01$, $[.00, .05]$. When participants used normative assessment, they found a greater number of mistakes in the dictation attributed to low-SES students' ($M = 12.39$, $SD = 2.81$, $[11.70, 13.07]$) compared with high-SES students ($M = 11.13$, $SD = 2.83$, $[10.45, 11.82]$), $b = -1.26$, $[-2.17, -0.34]$, $t(264) = -2.70$, $p = .007$, $\eta_p^2 = .03$, $[.00, .08]$. This difference was not significant when participants used formative assessment ($M_{low-SES} = 11.72$, $SD_{low-SES} = 2.37$, $[11.15, 12.30]$; $M_{high-SES} = 11.63$, $SD_{high-SES} = 2.76$, $[10.95, 12.32]$), $b = -0.09$, $[-1.01, 0.83]$, $t < 1$, $p = .84$, $\eta_p^2 = .00$, $[.00, .01]$.

Experiment 3 ($N = 501$)

Number of mistakes. The number of mistakes found in the test was analyzed in a regression with assessment method, target's SES, function of assessment and all interactions as predictors^{iv}. The interaction between the function of assessment and the target's SES was no longer significant, $b = 0.18$, $[-0.97, 1.32]$, $t < 1$, $p = .76$, $\eta_p^2 = .00$, $[\.00, \.01]$. In the selection condition, the SES performance gap was no longer significant, ($M_{lowSES} = 11.91$, $SD_{lowSES} = 3.27$, $[11.36, 12.47]$; $M_{highSES} = 11.60$, $SD_{highSES} = 3.30$, $[11.03, 12.16]$), $b = -0.32$, $[-1.08, 0.45]$, $t < 1$, $p = .42$, $\eta_p^2 = .00$, $[\.00, \.01]$. This social class gap was also not significant when the assessment was presented with an educational purpose, ($M_{lowSES} = 11.66$, $SD_{lowSES} = 3.31$, $[11.06, 12.25]$; $M_{highSES} = 11.60$, $SD_{highSES} = 2.88$, $[11.05, 12.15]$), $b = -0.05$, $[-0.89, 0.78]$, $t < 1$, $p = .90$, $\eta_p^2 = .00$, $[\.00, \.00]$. The three-way interaction between assessment method, function of assessment and target's SES did not reach significance, $b = 1.36$, $[-0.93, 3.64]$, $t(492) = 1.16$, $p = .24$, $\eta_p^2 = .00$, $[\.00, \.02]$. No other effects reached significance ($ts < 1$, $ps > .43$).

Experiment 4 ($N = 335$).

Ratio of negative feedback. The ratio of negative feedback relative to the total feedback was analyzed in a regression with the function of assessment (selection coded -0.5, education coded 0.5), target's SES (low-SES coded -0.5, high-SES coded 0.5), and the interaction term as predictors^v. The results showed no main effect of the target's SES, $b = -0.02$, $[-0.05, 0.01]$, $t(329) = -1.45$, $p = .15$, $\eta_p^2 = .01$, $[\.00, \.03]$ or the function of assessment, $b = 0.008$, $[-0.02, 0.03]$, $t(329) = 0.54$, $p = .59$, $\eta_p^2 = .00$, $[\.00, \.02]$. The expected interaction between SES and function did not reach significance, $b = 0.04$, $[-0.02, 0.09]$, $t(329) = 1.26$, $p = .21$, $\eta_p^2 = .01$, $[\.00, \.03]$. This interaction was in the expected direction with a larger difference in ratio between low and high SES students when the assessment was meant to select ($M_{lowSES} = .41$, $SD_{lowSES} = .12$, $[\.38, \.43]$ vs. $M_{highSES} = .37$, $SD_{highSES} = .13$, $[\.34, \.40]$) rather than to improve learning ($M_{lowSES} = .40$, $SD_{lowSES} = .11$, $[\.37, \.42]$ vs. $M_{highSES} = .40$, $SD_{highSES} = .14$, $[\.37, \.43]$).

Positive and negative feedback. The number of characters highlighted was analyzed in a 2 function of assessment (selection vs. education) X 2 SES (high vs. low) X 2 type of feedback (negative vs. positive) mixed ANOVA with the last factor as a within participant factor^{vi}. The analysis revealed a main effect of the type of feedback, $F(1, 328) = 193.32$, $p < .001$, $\eta_p^2 = .37$, indicating that participants gave more positive FB ($M = 419$, $SD = 194$) than negative FB ($M = 270$, $SD = 134$). This effect was qualified by an interaction with the student's SES, $F(1, 328) = 4.89$, $p = .03$, $\eta_p^2 = .01$, $[\.00, \.04]$. Participants gave more positive FB to a high SES student ($M = 442$, $SD = 207$, $[410, 474]$) compared to a low SES student ($M = 397$,

$SD = 176, [369, 424]$), $F(1, 328) = 4.59, p = .03, \eta^2_p = .01, [.00, .04]$. This difference between SES was not significant for negative FB, $F < 1, n.s., \eta^2_p = .00, [.00, .00]$. No other effect reached significance $F_s < 2.14, p_s > .14, \eta^2_p < .006$, including the expected interaction between the type of feedback, SES and the function of assessment, $F < 1, n.s., \eta^2_p = .00, [.00, .01]$.

Entity theory of intelligence. The score of belief in an entity theory of intelligence was analyzed in a regression with the function of assessment (selection coded -0.5, education coded 0.5), target's SES (low-SES coded -0.5, high-SES coded 0.5), and the interaction term as predictors^{vii}. The main effect of Function that would indicate an impact of that induction on mindset did not reach significance $b = 0.04, [-0.11, 0.19], t(327) = 0.52, p = .60, \eta^2_p = .00, [.00, .01]$. The main effect of SES and the interaction also were non-significant, respectively $b = 0.04, [-0.12, 0.19], t(327) = 0.45, p = .65, \eta^2_p = .00, [.00, .01]$ and $b = -0.17, [-0.48, 0.13], t(327) = -1.09, p = .28, \eta^2_p = .00, [.00, .02]$.

SECOND LINE OF RESEARCH

School Selection and the Social Class Divide:
How Tracking Contributes to the Reproduction of Inequalities

School Selection and the Social Class Divide: How Tracking Contributes to the Reproduction of Inequalities²

Abstract

Selection practices in education, such as tracking, may represent a structural obstacle that contributes to the social class achievement gap. We hypothesized that school's function of selection leads evaluators to reproduce social inequalities in tracking decisions, even when performance is equal. In two studies, participants (students playing the role of teachers, $N = 99$, or pre- and in-service teachers, $N = 70$) decided which school track was suitable for a pupil whose socioeconomic status (SES) was manipulated. Although pupils' achievement was identical, participants considered a lower track more suitable for lower-SES than higher-SES pupils, and the higher track more suitable for higher-SES than lower-SES pupils. A third study ($N = 160$) revealed that when the selection function of school was salient, rather than its educational function, the gap in tracking between social classes was larger. The selection function of tracking appears to encourage evaluators to artificially create social class inequalities.

Keywords: social class inequalities, achievement gap, selection practices, tracking, teacher

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School Selection and the Social Class Divide:

How Tracking Contributes to the Reproduction of Inequalities

Students from disadvantaged social classes are consistently under-represented in higher education in all industrialized countries (OECD, 2011). The present research addresses social class inequalities in education by adopting an approach that considers how societal structures shape individual experience (Adams, Biernat, Branscombe, Crandall, & Wrightsman, 2008; Kraus & Park, 2017; Markus & Stephens, 2017; Smeding, Darnon, Souchal, Toczeck-Capelle, & Butera, 2013). In particular, we study the educational practice of tracking—grouping students based on their achievement level—which is in use in most OECD countries (OECD, 2013b). Tracking is traditionally used because “a good fit between a student’s ability and the level of instruction is believed to maximize the efficiency and effectiveness of the instructional process” (Hallinan, 1994, p. 79), but research has shown that tracking is linked to increased social class inequalities in educational attainment and earnings (e.g., Brunello & Checchi, 2007). Drawing on research in social psychology and sociology of education that depicted the educational system as a contributor to the reproduction of social classes (Bourdieu & Passeron, 1990; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012), we contend that tracking is a structural obstacle that contributes to actively exclude lower social class pupils from higher education. In particular, we propose that tracking shapes the decisions of evaluators in a way that reproduces social class inequalities, even when achievement is equivalent, because it epitomizes a specific aspect of the educational system: its function of selecting the most deserving students.

Social psychology has recently produced a number of studies that experimentally manipulate the cultural and structural factors that might affect the results of *students* from different social classes (Goudeau, Autin, & Croizet, 2017). Here we present the first experimental investigation of the impact of students’ social class on tracking decisions of *evaluators*.

Tracking as Selection

The practice of grouping students by achievement levels into differentiated curricula can be found in all OECD countries (OECD, 2013b). Some countries, such as Austria, Germany, Hungary, the Czech Republic and Switzerland, track students into separate academic/vocational programs or schools for their full curriculum (i.e., full-curriculum tracking). This separation has lasting consequences, as students in the lower tracks are not allowed to directly access higher education. Other countries (e.g., the United States of America, Australia, Canada, the United Kingdom, and New Zealand) practice various forms of within-

school “ability grouping/streaming” or “course-by-course tracking” in their curriculum (Chmielewski, 2014). In this case, students are tracked for certain courses, not programs, and every student is presumably eligible to go to University. Students are usually tracked (into courses, programs or schools) during secondary schools at the age of 15 or 16. Nonetheless, early tracking (10-12 years old) occurs in European countries such as Germany, Austria, Switzerland, Belgium and the Netherlands (OECD, 2013).

Several authors have noted that tracking systems should be described in terms of degree of selection (countries/schools have a more or less restrictive tracking system), rather than consider tracking as a binary variable (tracking vs. no tracking; Bol, Witschge, Van de Werfhorst, & Dronkers, 2014; Chmielewski, 2014). Despite the above differences in application, these selection practices (tracking and ability grouping) have been argued to fulfill the same function, namely differentiating students by achievement levels and tailoring the curriculum to fit students’ academic needs and abilities (Chmielewski, 2014).

Tracking and Learning

However, the support for school tracking has been controversial. The arguments put forward in the controversy often revolve around a perceived trade-off between efficiency and equality, as educational systems aim for both a high level of achievement and equality of opportunities (Felouzis & Charmillot, 2013). Those who favor tracking have argued that homogeneous classes contribute to a more focused curriculum, leading to an optimal learning context for all students (Hallinan, 1994). Others argue against tracking because in heterogeneous classes weaker students profit from the presence of stronger students, without hindering the latter’s performance (Kerckhoff, 1986), or even favoring it (Konan, Chatard, Selimbegovic, & Mugny, 2010).

Empirical findings on the benefits of tracking on mean performance have been mixed. Whereas there is some evidence that the effects of tracking can be slightly beneficial for high-ability groups and detrimental for low-ability groups (Hattie, 2002; Huang, 2009), cross-national studies suggest that the overall impact of tracking on student performance is very small and most often negative (Betts & Shkolnik, 2000; Hattie, 2002; Huang, 2009). Consequently, some authors question the existence of the potential trade-off between efficiency and equality, as the evidence for an increase in performance is limited, yet the impact on the achievement gap between students of different levels is more robust (Schütz, Ursprung, & Wößmann, 2008; Van de Werfhorst & Mijs, 2010).

Tracking and Social Inequalities

Indeed, students' social background has been shown to yield a greater influence on students' chance of success in countries that practice tracking than in countries with comprehensive school systems (Brunello & Checchi, 2007; Chmielewski 2014; Hanushek & Wößmann, 2006; Schütz et al., 2008). Even when tracking is not operationalized as a binary variable but as a scale taking into account the age of first selection, the length of the tracked curriculum, and number of tracks, results show that an achievement gap due to the students' socio-economic background is larger in educational systems that are strongly tracked compared to more comprehensive systems (Van de Werfhorst & Mijs, 2010). Another study carried out with schools using academic/vocational tracking and schools using "ability grouping" concluded that they display rather similar achievement gaps due to students' SES (Chmielewski, 2014). In sum, international surveys suggest that the implementation of selection practices of various forms can impact the actual distribution of opportunities across social classes.

The Structure of Educational Institutions and the Social Class Achievement Gap

We contend that tracking is not just a device that allows the educational system to sort students as a function of their objective performance, but that it is a practice that paradoxically perpetuates existing social class inequalities. This contention builds on socio-psychological and sociological analyses of the role of educational institutions in reproducing social inequalities. In sociology of education, Bourdieu and Passeron (1990) argued that the school system is in some measure an active contributor to the social class achievement gap because it is structured and organized by the upper-class culture. Using an experimental approach, research in social psychology has provided evidence for the causal role of educational settings (e.g. institutional norms, classroom settings and educational practices) in restraining the success of lower social class students (Batruch, Autin, & Butera, 2017; Croizet, Goudeau, Marot, & Millet, 2017; Smeding et al., 2013). The literature on cultural mismatch demonstrated that the middle/upper-class norms and values promoted by higher education institutions interfere with the achievement of first generation students (who are the first member of the family who go to college; Stephens et al., 2012). Moreover, the literature on stereotype threat suggests that the evaluative situations put in practice in universities produce a fear to confirm negative stereotypes among lower status students, which contributes to the academic difficulties experienced by low social class students (Croizet & Claire, 1998; Croizet & Millet, 2012). Recently, a set of experiments showed that making social comparison salient can be detrimental for the performance of working-class pupils. When pupils were asked to raise their hand upon

finishing with a task, the performance of lower social class pupils decreased (Goudeau & Croizet, 2017). These studies indicate that the structure of the educational system can shape students' behavior and achievement, but we suggest that it could also shape the behavior of the agents implementing its institutional practices, notably teachers.

Evaluators' Decisions and Inequalities

It has long been proposed that teachers can affect student experience by holding biased beliefs and differential expectations of students (Dusek & Joseph, 1983; Riegler-Crumb & Humphries, 2012). Indeed, several studies have provided empirical support for discrimination based on factors such as nationality, gender, race or even SES in school contexts (Farkas, 2003; Hinnerich, Höglin, & Johannsen, 2015; Kiss, 2013). Regarding tracking, teachers are less likely to promote students with an immigrant background than native students to a higher track (Glock, Krolak Schwerdt, Klapproth, & Böhmer, 2013). The results of studies on teachers' discrimination have largely been interpreted as documenting biases in individuals. We rather contend that discrimination in tracking could be the byproduct of the institutional logic underlying the implementation of selective practices. Let us see why.

The Two Functions of Educational Institutions

The ongoing debate over tracking policies, between efficiency and equality, occurs at two different levels: educational and societal. Previous authors noted that the potential trade-off of tracking might not reside on its beneficial effect on student's performance but rather on its efficiency to provide the labor-market with differentially skilled workers (Bol & Van de Werfhorst, 2013). More generally, this debate reflects the ambivalence between two functions assigned to the school system: the educational function and the function of selection (Autin, Batruch, & Butera, 2015; Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009; Jury, Smeding, & Darnon, 2015). Since the development of compulsory education, the school system has been required to pursue democratic objectives, and provide education to all pupils by transmitting knowledge, skills and culture. In this regard, the school system fulfills an educational function. Nonetheless, the educational system is also expected to prepare students for their future positions in the social hierarchy (Darnon et al, 2009; Dornbusch, Glasgow, & Lin, 1996). The certifications of competence (i.e. grades or diplomas) awarded by the educational institutions are used to compare and rank students to determine which are worthy of following the most prestigious paths, thereby fulfilling the function of selection of the educational system.

Previous studies in social psychology have found that the function of selection could have detrimental effects on the performance of low-SES students. A study demonstrated that when academic assessment was presented to students as fulfilling a selective rather than an

educational purpose, the achievement gap between low and high-SES students was higher (Smeding et al., 2013). The mere activation of the function of selection of the university system has been shown to impair the performance of first-generation students compared to continuing-generation students (i.e. one or both parents finished high school; Jury et al., 2015). These studies conclude that the mechanism responsible for the impairment of performance is rooted in the structural functioning of the institution (i.e., its function of selection).

The Present Research

In the present research, we move beyond the study of how low-SES students underperform in a selective environment and investigate the active involvement of selection in education: We propose to study the link between the function of selection and the social class achievement gap from the perspective of the evaluators, to test whether a selective institutional context can lead evaluators to create the difficulties/advantages encountered by students of different social classes. Importantly, in this study, we experimentally manipulate the pupils' SES, but we keep the pupils' performance constant to overcome the limitations of previous correlational studies which could not conclude on causality in the relationship between tracking, SES and past performance.

In the case of selection practices such as tracking, decisions are meant to be primarily based on prior achievement, which is believed to be a fair reflection of the student's individual merit. This ideology, meritocracy, proposes that only individual inputs should be considered, and group-based considerations ignored, to determine one's social position (Sabbagh, Resh, Mor, & Vanhuyse, 2006). Paradoxically, even though meritocracy as a justice principle is perceived as being relatively bias-free (Son Hing et al., 2011), research has shown that meritocratic principles can have the opposite psychological effects. For instance, studies conducted by Son Hing, Bobocel and Zanna (2002) have shown that endorsement of the merit principle was associated with increased opposition to policies challenging the status quo in favor of disadvantaged group members. Meritocracy is often used as a justification to oppose affirmative action (Faniko, Lorenzi-Cioldi, Buschini, & Chatard, 2012). In the field of education, Darnon, Smeding and Redersdorff (2017) showed that beliefs in school meritocracy were negatively associated with interest or behavioral intention to implement an equalizing pedagogical method. Taking the perspective of evaluators, another study showed that an organizational culture emphasizing meritocratic principles led managers to favor men over equally competent women (Bernard & Castilla, 2010).

Contrary to the function of selection that can be linked to a meritocratic principle, the educational function seems to be related to an egalitarian principle as it aims at equalizing

individuals' level of instruction. Egalitarian principles have been associated with positive outcomes for disadvantaged group members. For instance, in an engineering college, implementing egalitarian social norms led to stronger intentions to speak out against racist behaviors, and more positive attitudes toward diversity in engineering (Bennett & Sekaquaptewa, 2014).

In light of these results, we propose that merit-based selective practices, like tracking, are structural contexts that encourage agents of the educational system, namely teachers, to maintain status inequalities between pupils of advantaged and disadvantaged social background, even when achievement is equal. Conversely, focusing agents on the educational function of the educational system could reduce such a tendency to maintain status inequalities.

Hypotheses and Overview

We tested the hypothesis that tracking decisions will be influenced by the evaluators' awareness of the pupils' socioeconomic status (SES), even if pupils' achievement is kept identical and will result in considering a lower track more suitable for a low-SES pupil than for a high-SES pupil, and the reverse for a higher track (Hypothesis 1). Two experiments tested this hypothesis, one with university students playing the role of teachers, and one with pre-service and in-service teachers. Furthermore, a third experiment tested that, if it is true that such discriminatory behavior in tracking judgments is the result of an institutional logic of selection, rather than purely individual prejudice, then the social class gap in tracking decisions will be stronger when the educational system's function is portrayed as being selective rather than educational (Hypothesis 2).

Experiment 1

Method

Participants. A total of 104 psychology students enrolled in a French-speaking Swiss university participated in this study in exchange for partial credit. A sensitivity analysis on G*power using a negative correlation between the tracking measures ($r = -.50$) and an 80% power returned a required effect size of $f = .24$, Cohen's $d = .48$ for the expected interaction between track and pupil's SES (Faul, Erdfelder, Buchner, & Lang, 2009). All participants have been randomly assigned to one of the four between-participants experimental conditions: Target's SES (low vs. high) X Target's Gender (girl vs. boy). The target's gender was included as a control variable. Data from 5 participants were excluded because they were suspicious of the aim of the study (final sample: $N = 99$, 85 women, 14 men, $M_{age} = 21.43$, $SD_{age} = 2.53$).

Material and procedure. Switzerland is a federal state, divided in relatively autonomous cantons (like in Germany or the USA); in most cantons, performance (grades) at

age 12 determines whether a pupil will follow a vocational or academic track (i.e. different curricular programs). Some schools allow for borderline cases (i.e. pupils whose grades are above the passing grade but only slightly below the usual requirements for the highest track) to be reviewed by teachers and the school director, to decide whether the pupil should be allowed to pursue the academic track (an average of 40% of pupils enter the academic track). For the present study, participants were asked to take the role of a teacher in this context and help decide which secondary school track was most suitable for a particular borderline case (the target pupil). Participants received a booklet¹ informing them about (1) the future consequences of sending the pupils to the higher or lower track (e.g., higher Track: leading to High school and University, lower Track: leading to an apprenticeship or General knowledge schools), (2) the grade requirements for tracks, and (3) the target's description including the pupil file (similar to the one actually in use), grades and a brief description of his/her extra-curricular activities. Relevant information about the target SES and gender were presented among neutral information (e.g., date of birth, address, nationality—all targets were presented as native pupils).

Manipulation of target's SES and gender. Gender was manipulated by changing the pupil's first name and the reported gender in the pupil file. SES was manipulated by altering the pupil's first name (using stereotypical names of high vs. low social class girls and boys: "Charlotte/ Louis" vs. "Cindy/Bryan"; cf. Coulmont, 2011), parental occupation (mother: director of marketing vs. waitress; father: architect vs. construction workman) and extra-curricular activities (e.g., traveling to London vs. local amusement park). Importantly, every target was presented with the same grades.

Measures of suitability of school tracks. We included two sets of measures² to estimate what participants thought was the appropriate track for the bogus pupil. Participants were to evaluate separately on 7-point scales the suitability of each track for the target (from 1, *Totally disagree*, to 7, *Totally agree*), once according to their own opinion as a teacher and again according to what they thought other teachers' opinion was (supposedly included in the decision). The first two measures (i.e., "In your opinion, to what extent the pupil should be sent to the lower/higher track?") were meant as an indicator of the participants' own decision, were they to be in this position. We included the two other measures to investigate participant's perception of the school system functioning (i.e. "In your opinion, to what extent the other teachers making the decision would send the pupil to the lower/higher track?"; the analyses on these measures are presented in the Supplemental Material).

The questionnaire ended with a manipulation check to make sure that participants had correctly perceived the target's background—participants were asked to recall information about the pupil they had seen and were told to report on a 7-point scale to what extent the pupil seemed to come from a *highly disadvantaged* (1) vs. *highly advantaged* (7) background—and socio-demographic questions, among which information pertaining to the participants' parental level of education and employment. Finally, participants were thanked and debriefed.

Results

Manipulation check. We analyzed the rating of the perceived socio-economic background of the target in a 2 (Target's Gender: girl vs. boy) x 2 (Target's SES: high vs. low) ANOVA. As expected, we found an effect of the target's SES indicating that low-SES targets were perceived as coming from a less advantaged background ($M = 3.88$, $SD = .94$, 95% CI [3.65, 4.10]) than high-SES targets ($M = 5.96$, $SD = .61$, [5.74, 6.19]), $F(1, 95) = 169.11$, $p < .001$, $\eta^2_p = .64$, Cohen's $d = 2.62$. No other effects reached significance ($F_s < 1$).

Suitability of school tracks. We examined the participants' assessment of the suitability of each track in a 2 (Target's Gender: girl vs. boy) x 2 (Target's SES: high vs. low) x 2 (Track: high vs. low) mixed ANOVA with the last factor as repeated measures. The analysis revealed no main effect of Target's SES, $F(1, 95) = 1.74$, $p = .19$, $\eta^2_p = .02$ and a main effect of Track, $F(1, 95) = 149.47$, $p < .001$, $\eta^2_p = .61$, indicating that participants considered the higher track ($M = 5.42$, $SD = 1.11$, [5.22, 5.65]) to be more suitable for all targets than the lower track ($M = 2.92$, $SD = 1.23$, [2.68, 3.14]). This main effect was qualified by the predicted interaction between Track and Target's SES, $F(1, 95) = 9.14$, $p = .003$, $\eta^2_p = .09$. As depicted in Figure 1, the lower track was deemed more suitable for the low-SES target ($M = 3.28$, $SD = 1.29$, [2.95, 3.61]) than for the high-SES target ($M = 2.54$, $SD = 1.06$, [2.21, 2.87]), $F(1, 95) = 10.01$, $p = .002$, $\eta^2_p = .10$, Cohen's $d = 0.6$. Symmetrically, the higher track was considered by participants to be more suitable when the target's SES was high ($M = 5.69$, $SD = 1.02$, [5.38, 5.99]) than when it was low ($M = 5.18$, $SD = 1.15$, [4.88, 5.48]), $F(1, 95) = 5.43$, $p = .02$, $\eta^2_p = .05$, Cohen's $d = 0.5$.

Target's gender was initially included as a control variable and the results indicated no significant main effect of Gender, or interaction between Gender and SES ($F_s < 1$; $p_s > .71$). However, the analysis revealed an unexpected Gender by Track interaction, $F(1, 95) = 9.13$, $p = .003$, $\eta^2_p = .09$ that was further qualified by an unexpected three-way interaction between Track, Target's SES and Gender, $F(1, 95) = 6.31$, $p = .01$, $\eta^2_p = .06$. The interaction indicated that the difference between high- and low-SES was not significant for the female targets in

either track ($F_s < 1$), whereas it was significant for the male targets on the assessment of both the lower track, $F(1, 95) = 14.87, p < .001, \eta^2_p = .14$, and the higher track, $F(1, 95) = 10.13, p < .001, \eta^2_p = .10$.

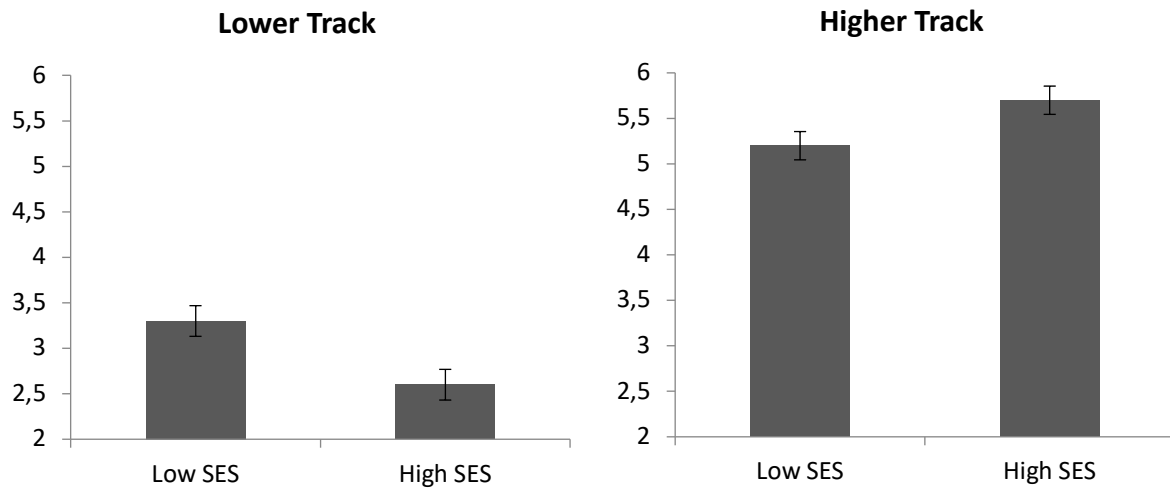


Figure 1. Mean suitability from the participants' point of view of lower and higher secondary school tracks as a function of target's SES in Experiment 1.

Note: Error bars represent standard errors of the mean.

Participants' background. One might argue that the participant's own social class may have an impact on their tracking judgment, under the form of an ingroup bias. Participants were considered as first-generation (e.g. none of the parents has a university degree) or continuing-generation (e.g. at least one parent has a university degree), following the procedure used in many social psychology studies on social class in educational context (Sirin, 2005; Snibbe & Markus, 2005; Stephens et al., 2012).

We performed a 2 (Participant's generation: first vs. continuing generation) x 2 (Target's gender: girl vs. boy) x 2 (Target's SES: high vs. low) x 2 (Track: high vs. low) ANOVA with the last factor as repeated measures. The analysis showed an effect of Track, $F(1, 90) = 148.91, p = .001, \eta^2_p = .62$, and the predicted and above-documented Target's SES X Track interaction, $F(1, 90) = 7.03, p = .009, \eta^2_p = .07$. Participants' generation did not interact either with track, $F(1, 90) = 2.52, p = .12, \eta^2_p = .03$, or with any other variables ($F_s < 1$).

Discussion

We designed this first experiment to examine whether individuals acting as agents of the educational system would reproduce existing social disparities when placed in the strategic

position of having to actively influence pupils' prospects, namely when asked to make a tracking decision. Results showed that pupils' SES was an influential factor in conceding academic opportunities. Although grades were the same for all targets, participants imagined that as teachers they would consider a lower track more suitable for a low-SES pupil when compared to a high-SES pupil, and reciprocally a higher track more suitable for a high-SES pupil than for a low-SES pupil.

To preserve the ecological validity of the study, the scenario was made to resemble actual tracking dilemmas in the Swiss system where teachers and the principal can offer a second chance to pupils who are borderline cases for the higher track (i.e. slightly below official standards). This specific characteristic is important for the interpretation of the effect, as most research in the discrimination literature focuses on targets from disadvantaged groups who meet the official criteria for an opportunity (e.g., for a job application) but are less likely to benefit from it in comparison with targets from advantaged groups (Quillian, Pager, Hexel, & Midtbøen, 2017). Allowing students who do not meet the criteria to follow an academic path, on the other hand, could be interpreted as offering these students a privilege. In the case of this study, this privilege appears to be more readily offered to high-SES students than to low-SES students. This result is consistent with the theorizing of researchers such as DiTomaso (2015) who suggest that the reproduction of inequalities is also a byproduct of favoritism processes, where advantaged group members are extended the benefit of the doubt in case of mistakes and might be rewarded for promise over performance.

We also observed that the effects were stronger for male than for female targets. This unexpected effect might be linked to different attributions to academic success depending on gender. According to Fennema, Peterson, Carpenter, and Lubinski (1990), teachers perceive boys' performance as being more related to essential qualities such as abilities, whereas girls' performance are seen as being more the results of effort. In the case of girls, it may be that the impact of the target's SES was reduced by the gender-based assumption regarding the effort involved in the academic path. However, this effect might also be explained by the fact that at this level of education, girls tend to generally outperform boys academically in many countries (OECD, 2011), and some research suggests that teachers and young children perceive behavioral and academic stereotypes in early education as being more favorable towards girls than boys (Jones & Myhill, 2004; Hartley & Sutton, 2013). Indeed, prior experimental work suggested that stereotypical boys are seen by teachers as less academically engaged when compared to non-stereotypical boys and girls (Heyder & Kessels, 2015). While this effect of Gender should be replicated before reaching any definitive conclusion, we think it possible that

the advantages/disadvantages of girls' SES could be less impactful for school decisions if their performance is seen as being more linked to efforts and if girls are seen by teachers as less of an academic risk.

Experiment 2

To ensure that the above results were not biased by participant's lack of teaching and selecting experience, we conducted a replication with a sample of pre-service and in-service teachers.

Method

Participants. Based on the observed effect size and the correlation between the tracking measures in Experiment 1 ($\eta_p^2 = .09$, $r = -.70$), an a priori analysis using SPSS effect size in G*Power revealed a minimum sample size of 70 for 80% power to detect the predicted within-between interaction (Track x Target's SES). A first sample of practicing and pre-service teachers enrolled in a masters' class in a teachers' college took part to the study ($N = 36$, 34 practicing teachers and 2 pre-service teachers). A second sample of practicing teachers was recruited by one of their colleagues ($N = 54$). In the second sample only the male target conditions were presented so we decided to exclude the participants from the first sample who saw the female targets ($N = 20$). However, preliminary analyses were performed with both samples and we found similar results (see Supplemental Material). The final sample consisted of 70 teachers ($M_{age} = 38.46$, $SD = 10.50$; 53 women, 15 men and 2 unspecified). Their mean teaching experience was 11.71 years ($SD = 9.77$).

Material and procedure. The descriptions of the target and the general procedure were identical to those used in experiment 1. The cover story was however adapted to fit with our sample. The study was presented as a comparison between individual and collective expert decision-making processes. All participants were told they were to answer individually and were asked to decide which track was most suitable for a borderline pupil (i.e., whose grades are just below the usual requirement to be tracked in the higher track). As agents of the Swiss school system, teachers are familiar with tracking decisions, but they received nonetheless the booklet informing them about the outcomes of tracking for pupils. They read the administrative file presenting the pupil's SES and grades and were then asked to indicate the suitability of each (low and high) track for the pupil³. Finally, they reported demographic information including their gender, age and number of years of teaching experience. At the end of the study, participants were thanked and debriefed.

Results

Manipulation checks. An ANOVA involving the target's SES (low vs. high) revealed that participants did indeed perceive the low-SES pupil ($M = 3.73$, $SD = .82$, [3.49, 3.99]) as being less advantaged than his high-SES counterpart ($M = 6.00$, $SD = .68$, [5.73, 6.28]), $F(1, 67) = 148.82$, $p < .001$, $\eta^2_p = .69$, Cohen's $d = 3.0$.

Suitability of school tracks. We performed a 2 (Target's SES) X 2 (Track) ANOVA with the last factor as a repeated measure. First, we observed no main effect of Target's SES, $F < 1$, *n.s.* and a significant main effect of Track, $F(1, 68) = 11.82$, $p = .001$, $\eta^2_p = .15$. Participants considered the higher track ($M = 4.91$, $SD = 1.57$, [4.54, 5.27]) to be more suitable for all targets than the lower track ($M = 3.63$, $SD = 1.74$, [3.22, 4.04]). Moreover, as depicted in Figure 2, the predicted interaction between Target's SES and Track was significant, $F(1, 68) = 4.83$, $p = .03$, $\eta^2_p = .07$. For the lower track, the low-SES target ($M = 4.03$, $SD = 1.90$, [3.48, 4.57]) was perceived as being marginally more suitable than the high-SES target ($M = 3.22$, $SD = 1.43$, [2.61, 3.83]), $F(1, 68) = 3.79$, $p = .06$, $\eta^2_p = .05$, Cohen's $d = 0.5$), whereas for the higher track, the high-SES pupil ($M = 5.32$, $SD = 1.30$, [4.78, 5.87]) was perceived as being more suitable than the low-SES pupil ($M = 4.49$, $SD = 1.68$, [4.00, 4.98]), $F(1, 68) = 5.17$, $p = .03$, $\eta^2_p = .07$, Cohen's $d = 0.6$. We thus replicated the results of experiment 1 with a sample of teachers.

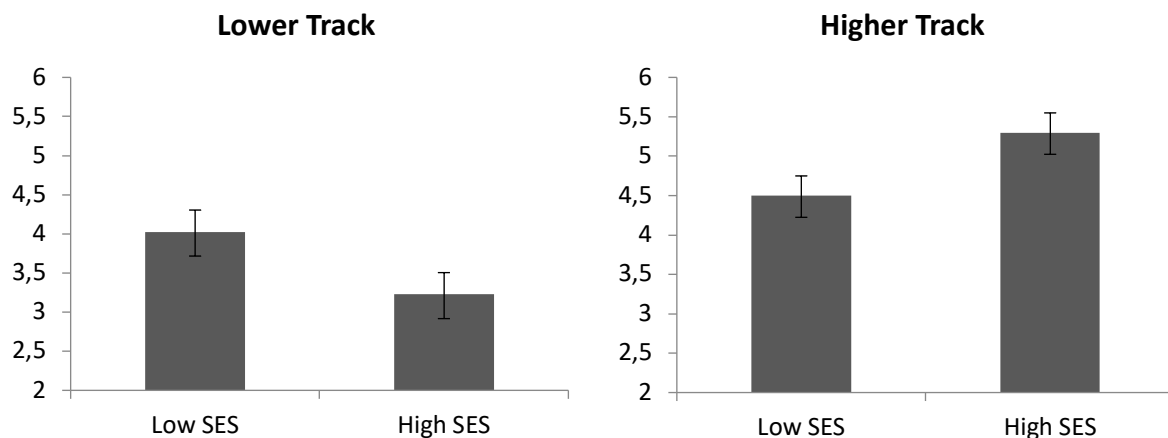


Figure 2. Mean suitability from the participants' point of view of lower and higher secondary school tracks as a function of target's SES in Experiment 2.

Note: Error bars represent standard errors of the mean.

Teachers' experience (in years). To test whether the documented gap in personal assessment of track suitability was affected by participants' experience in teaching, we

performed a regression analysis with the target's SES (low coded -0.5, high coded 0.5), the teacher's experience (centered; $N = 66$; 4 missing values), and the interaction as predictors of the difference score between the higher track and the lower track. Analyzing the difference score allows to include the within-participants "Track" factor in the analysis (Judd, McClelland, & Ryan, 2009). The previously reported interaction between SES and Track remained similar, $t(62) = 2.22, p = .03, \eta^2_p = .07$ and was not further moderated by the teachers' experience $t(62) = -.18, p = .86, \eta^2_p = .00$.

Experiment 3

Our hypothesis was that it is the selective role of educational institutions that drives the discriminatory behavior. In the two previous studies, the observed social class gap in tracking was neither affected by the respondent's social class, nor by the extent of their actual practice as teachers. The third study aimed to test whether it is indeed a structural mechanism that drives the social class gap in tracking: If the observed behavior is driven by a compliance with the function of selection of the system, rather than an individual's propensity to discriminate, then manipulating such function (i.e. either to select or to educate) should impact the tracking decisions. We hypothesized that the gap between the targets in the tracking decision should be wider in the condition where the function of the school system is presented as being selection rather than education. We expect a reduction of the effect of SES on tracking between the "education" condition and the "selection" condition because tracking in itself is a selective practice; therefore, using tracking with an educational mindset might reduce the discriminatory behavior, but not completely eliminate it.

Method

Participants. The sample consisted of 160 first-year Life science and Technology students from a Swiss polytechnical university (82 women, 71 men and 7 unspecified; $M_{age} = 20.08, SD = 1.19$). An a priori analysis using the correlation between the tracking measures ($r = -.70$) and the more conservative effect size observed in Experiment 2 ($\eta^2_p = .07$) returned a minimum of 128 participants to achieve an 80% power level to test the predicted within-between interaction (2: Tracks x 2: Target's SES x 2: School's function). Participants voluntarily and collectively took part in the study during a class. Participants were randomly assigned to one of the experimental condition in the School's Function (education vs. selection) x Target's SES (low vs. high) x Target's gender (boy vs. girl) between-participants design. As in Experiment 1, target's gender was used as a control variable.

Material and procedure. Participants were presented with the same scenario, in which they were asked to imagine they were teachers, and same targets used in Experiment 1. Again,

all targets were presented as having the same grades, which were slightly below the usual requirement for the higher track. Participants were also informed of the consequences of tracking (i.e. possibility for the student to pursue post-secondary education or not).

Manipulation of school's function. Before seeing the information about the target's case and the implications of tracking, participants read a paragraph about the characteristics of the Swiss school system, which served to render the function of the educational system (selection vs. educational) salient. In the educational function paragraph, the main goal of the educational system was described as imparting all students with knowledge and skills and to help everyone develop their competence. In the selection function paragraph, the main goal of the educational system was described as identifying and rewarding the most deserving students. For instance, in the *educational function* condition, they were told that the Swiss school system's goal was "to develop skills and give students the opportunity to progress in the mastery of their knowledge". In the *function of selection* condition, the school's goal was "to orient students according to academic abilities and lead everyone to the maximum of their potential".

Results

Manipulation checks. A 2 (Target's SES) X 2 (Target's Gender) X 2 (School's Function) ANOVA was conducted to analyze participants' perception of the target's SES. The results showed a marginal effect of Target's Gender, $F(1, 152) = 3.52, p = .06, \eta_p^2 = .02$, and confirmed that participants estimated that the low-SES target came from a less advantaged background ($M = 3.67, SD = .91$) than the high-SES target ($M = 5.55, SD = .73$), $F(1, 156) = 207.49, p < .001, \eta_p^2 = .58$, Cohen's $d = 2.3$). No other effects were significant ($ps < .22$).

We included a manipulation check to ensure that participants had correctly perceived the school system as being selective or educational. The vast majority (78% of participants-- i.e. 128) answered correctly. We tested our final model with samples including and excluding those participants and we found similar results. We decided to keep the full sample.

Suitability of school tracks⁴. Given the specific direction of the expected results, we recoded the experimental conditions into three orthogonal contrasts. We created a set of contrasts: the planned contrast testing our hypothesis and two orthogonal contrasts testing the remaining variance. The planned contrast predicts that the difference between low- and high-SES target will increase from the education condition to the selection condition (+1, -1, +2, -2 respectively for the high SES/education, low SES/education, high SES/ selection and low SES/selection conditions). The set of orthogonal contrasts tested the residual variance (+1, +1, -1, -1 and -2, +2, +1, -1). If the data support our hypothesis, the first contrast should be significant, but not the others (Brauer & McClelland, 2005; Judd & McClelland, 1989). It is

worth noting that the social class gap is in opposite directions in the two tracks (in the lower track, higher suitability for low-SES than high-SES vs. in the higher track, higher suitability for high-SES than low-SES). Consequently, we expected an interaction between Track and the contrast testing the increase of the social class gap between the education and the selection condition. The suitability of tracks was analyzed with the contrast-coded conditions as a between-participants factor and the tracks (higher vs. lower) as a repeated measure. The target's gender was originally included in the analysis, but as it did not result in any significant main or interaction effects, we did not include the variable in the final model. The analysis showed no main effect of the contrast-coded conditions, $F_s < 1$, *n.s.* and a main effect of Track, $F(1, 156) = 103.63$, $p < .001$, $\eta^2_p = .40$, revealing that participants found the higher track ($M = 5.23$, $SD = 1.52$, [5.00, 5.45]) to be more suitable for all targets than the lower track ($M = 3.09$, $SD = 1.45$, [2.86, 3.32]). We found the expected significant interaction between Track and the planned contrast, $F(1, 156) = 11.56$, $p = .001$, $\eta^2_p = .07$. The two contrasts testing the residual variance didn't interact with Track, $F_s < 1$.

The interaction between Track and the planned contrast, shown in Figure 3, was further decomposed by track. For the lower track, and as expected, the difference between low and high-SES targets to the detriment of the lower-SES pupil was larger in the selection condition ($M_{low-SES} = 3.56$, $SD_{low-SES} = 1.59$, [3.11, 4.02]; $M_{high-SES} = 2.54$, $SD_{high-SES} = 1.39$, [2.07, 3.01], Cohen's $d = 0.7$) than in the educational condition ($M_{low-SES} = 3.39$, $SD_{low-SES} = 1.49$, [2.92, 3.85]; $M_{high-SES} = 2.88$, $SD_{high-SES} = 1.41$, [2.42, 3.33], Cohen's $d = 0.3$), $F(1, 156) = 11.97$, $p = .001$, $\eta^2_p = .06$. For the higher track, and as also expected, the social class gap in suitability (to the benefit of the high-SES pupil) was larger in the selection condition suitable ($M_{low-SES} = 4.85$, $SD_{low-SES} = 1.59$, [4.41, 5.30]; $M_{high-SES} = 5.62$, $SD_{high-SES} = 1.53$, [5.16, 6.07], Cohen's $d = 0.5$) than in the educational condition ($M_{low-SES} = 5.00$, $SD_{low-SES} = 1.40$, [4.55, 5.45]; $M_{high-SES} = 5.44$, $SD_{high-SES} = 1.28$, [5.00, 5.88], Cohen's $d = 0.3$), $F(1, 156) = 7.50$, $p = .007$, $\eta^2_p = .05$.

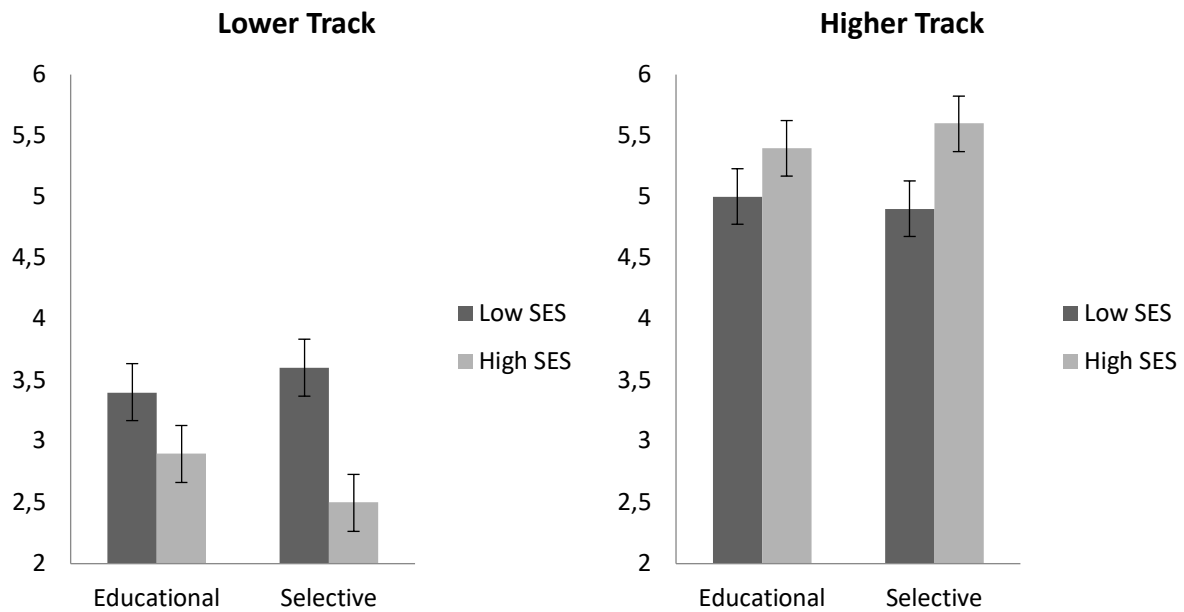


Figure 3. Mean suitability from the participants' point of view of lower and higher secondary school tracks as a function of target's SES and school's function in Experiment 3.

Note: Error bars represent standard errors of the mean.

Participants' background. We also tested the effect of participants' parental education to see if their social class had an effect on their tracking decisions. The analysis showed a significant effect of Track, $F(1, 156) = 72.13, p < .001, \eta^2_p = .33$, and the predicted interaction with the planned contrast, $F(1, 156) = 10.56, p = .001, \eta^2_p = .07$. Participants' parental education did not interact with any of the variables, $F_s < 1$.

Discussion

The results of the planned contrast appear consistent with our hypothesis that tracking in selective institutional context, more than in an educational context, encourage the reproduction of SES inequalities, even when achievement is kept constant. However, it should be noted that none of the remaining contrasts included in the analyses test for the main effect of target's SES. It is possible that the planned contrast's significant effect is driven to a certain extent by the main effect of SES. An alternative approach is to test the hypothesis in a 2 (Target's SES) X 2 (Tracks) X 2 (School's Function) ANOVA. The results⁵ of such an ANOVA were not significant ($p = .30$). The effect size for the three-way interaction observed in this test was also smaller than planned ($\eta^2_p = .006$)⁶. These results suggest that future studies should plan for increased sample sizes to reliably test the interaction between Target's SES and institutional function. Given these limitations, we consider that the results can only be interpreted as

preliminary support for our hypothesis, which should be replicated with larger sample sizes before reaching a more definitive conclusion.

General Discussion

A meritocratic educational system, by rewarding individual performance, is supposed to circumvent group-based considerations and therefore offer every student the same opportunities. Yet, in reality, socio-economic background remains one of the main predictors of future academic achievements in most countries (OECD, 2011). When comparing the effects of tracking between countries, reports present evidence for a link between tracking and social class inequalities in education (Brunello & Checchi, 2007; OECD, 2011; Schütz et al., 2008). The correlational relationships examined in past work were studied experimentally in the three studies presented here, to test that selection based on tracking can paradoxically favor social class inequalities. In other words, we aimed to uncover whether the social class gap in tracking that has been observed in numerous studies could partly be a byproduct of an institutional logic of selection.

Specifically, we predicted that (1) participants would consider the lower track more suitable for a low-SES pupil than for a high-SES pupil, and a higher track more suitable for a high-SES pupil than for a low-SES pupil; and (2) the difference in tracking decision between pupils of different SES would be wider when the school was presented as being selective rather than educational. The results of our first experiment confirmed our first prediction: Participants recreated the disparities observed in school when they were placed in the strategic position to actively influence pupils' prospects. These results were replicated with a sample of pre-service and in-service teachers. In all experiments, no individual factors (such as participant's own social class, and years of practice as a teacher) significantly moderated this effect. Finally, the third experiment was devised to test our second hypothesis that the artificial creation of a social class gap in tracking would be at least partly explained by the institutional function of selection. The results provide preliminary support to our interpretation that the function of selection of the educational system could drive educational agents to recreate the existing achievement gap.

Contributions

This research sheds light on a potential new mechanism informing the debate over the link between tracking policies and social inequalities: selective educational contexts might lead agents to produce biased academic decisions. Until now, this debate focused primarily on the cost vs. benefits for students to be in classrooms structured around the students' academic potential, presuming that pupils' achievement level was adequately assessed by the agents of the education system. Yet, the results of our research provide evidence of the contrary.

Regardless of their actual merit, lower-SES pupils were considered more suited for a lower track and less suited for a higher track comparatively to their higher-SES counterparts with the same grades. Proponents of tracking policies generally suggest that having differentiated curricula or classes based on the students' level of achievement can serve the improvement of learning for all students (Hallinan, 1994). But if, as we propose, teacher's biases might be prompted by selective educational contexts, then tracking policies could potentially instead lead teachers to artificially create academic differences among students. More generally, the implications of our research suggest that efforts towards raising lower social-class students' performance may not be sufficient to combat social class inequalities at school. Attention should also be devoted to the intent underlying institutional practices. Particularly, in a context where schools are often under political pressure to provide external proof of their productivity and of their high standards, increasing selection can seem a reasonable solution to achieve excellence. In light of our results, we would suggest to carefully consider the consequences of such strategies, as drawbacks on equality of opportunity may outweigh the potential benefits.

Moreover, the present research builds upon a growing literature in social psychology that has been directed towards examining cultural and structural factors involved in the perpetuation of the social class achievement gap (e.g., Adams et al., 2008; Croizet et al., 2017; Kraus & Park, 2017; Jury, Smeding, Stephens, Nelson, Aelenei, & Darnon, 2017). These studies have consistently demonstrated the importance of looking into the role of institutional contexts to fully understand the reasons why low-SES students or high-SES students are more susceptible to fail/succeed at school. However, by focusing on student's contextual ability to perform, previous studies did not directly address how performance could also be constructed by evaluators and, by extension, the institution. In this research, we went beyond individual performance by investigating the structural obstacles that contribute to actively exclude low social class pupils from higher education. Our research provides initial empirical support to the validity of this approach as the results were to certain extent consistent with the hypothesis that structural factors, such as the intended function of educational institutions, can also affect the agents' behavior, shaping and even creating the difficulties/advantages encountered by students of different social class.

Increased societal inequality has been identified as a social problem requiring urgent attention by the World Economic Forum report on the 2015 Global Agenda. In fact, their report also indicates that improved education is considered to be one of the top solutions to resolve the issue of deepening inequalities ("Outlook on the Global Agenda", 2016). A major contribution of our research is the experimental investigation of one specific structural factor

in the educational system that could hinder the potentially beneficial effect of the democratization of the educational system. The present results provide preliminary support to the hypothesis that the education system may encourage the reproduction of social class inequalities because its selective structure prompts evaluators to make decisions that hinder the chances of success of lower-SES students and favor those of higher-SES students. In this respect, our findings provide initial experimental evidence supporting a longstanding line of research that has linked social class inequalities to the functioning of the educational system (Bowles & Gintis, 1976; Bourdieu & Passeron, 1990; Marks, Cresswell, & Ainley, 2006; Oakes, 1985; Van de Werfhorst & Mijs, 2010). This research used experimental designs to study the structural causes of social class discrimination in tracking. To the best of our knowledge, it is the first to investigate the causal relationship between the function of the school system and unequal treatment of students of different social classes by agents of the system.

Limitations and Conclusion

Some limitations should be mentioned. First, the aim of our research was to uncover a structural mechanism (i.e. institutional function) to explain the social class gap in tracking. As it was beyond the scope of this research, the results did not address the individual mechanisms at stake in this specific phenomenon. Further research could build on our conclusions to examine how selective institutional contexts affect institutional agents' specific psychological processes. Second, Experiment 1 revealed an interaction between SES and Gender. While unexpected, this result is consistent with prior literature describing opposite academic gender stereotypes of teenagers, which could lead to social class disadvantages targeting boys more than girls. However, as this pattern of result is not replicated in Experiment 3, we think that further intersectional research is needed. Third, results of Experiment 3 provide initial support for the effect of institutional function on the SES gap, but future research should use larger samples in order to provide a replicative test (i.e. interaction between SES, institutional function and Track) of our hypothesis.

In sum, the SES achievement gap due to selection practices such as tracking may not entirely result from the lower ability of low-SES students or from some particularly prejudiced teachers. It could be that this institutional selection practice could play a central role in the reproduction of social inequalities. An OECD report suggests that tracking policies may have a general negative impact on equal opportunity for all in education and propose to delay selection to reduce its consequences (OECD, 2011). Our findings provide convergent

experimental evidence in favor of this position by highlighting the paradoxical effects of selection-based practices on equality of treatment for students.

Footnotes

¹ The booklet included a questionnaire measuring the perceived success factors at school. These measures are not relevant for the hypothesis presented here, and we did not report the results, but they are available upon request.

² They were also asked to answer what the school's headmaster would have answered. As the results are identical to those of the other measures, and as we did not include this measure in the other studies, we did not report the results. They are available upon request.

³ As in Experiment 1, participants also answered what they think other teachers and the headmaster would decide. Results about the decisions attributed to other teachers are presented in supplemental material and results about the headmaster are available upon request.

⁴ As in Experiment 1 and 2, see supplemental material for the decisions attributed to other teachers and results about the headmaster are available upon request.

⁵ A 2 (Target's SES) X 2 (Tracks) X 2 (School's Function) ANOVA was conducted. The results showed a significant effect of Track $F(1, 156) = 103.64, p < .001, \eta_p^2 = .40$ and a significant interaction of Target's SES and Tracks, $F(1, 156) = 10.58, p = .001, \eta_p^2 = .06$, confirming that participants found the low-SES target more suitable for the lower track ($M = 3.47, SD = 1.53$) than the high-SES target ($M = 2.71, SD = 1.41$), and inversely for the higher track ($M_{Low-SES} = 4.93, SD_{Low-SES} = 1.45; M_{High-SES} = 5.53, SD_{High-SES} = 1.41$). The interaction between School's Function and Track was not significant ($p = .8$), neither was the three-way interaction ($p = .30$).

⁶ An a priori analysis using the correlation between the tracking measures ($r = -.70$) and the effect size observed in the three-way interaction of Experiment 3 returned a minimum of 1540 participants to achieve an 80% power level to test the within-between interaction (2: Tracks x 2: Target's SES x 2: School's function).

Supplemental Analyses

Experiment 1

Suitability of school tracks, assessment attributed to other teachers

We performed the same mixed 2 (Track) X 2 (Target's Gender) X 2 (Target's SES) ANOVA on this set of measures. Results indicated a main effect of Track, $F(1, 95) = 5.12, p = .03, \eta^2_p = .05$. Participants considered that other teachers would perceive the higher track ($M = 4.54, SD = 1.33, [4.28, 4.80]$) as being more suitable for all targets than the lower track ($M = 3.97, SD = 1.47, [3.68, 4.24]$). We also found the same interaction with Target's SES, $F(1, 95) = 10.26, p = .002, \eta^2_p = .10$. The lower track was deemed more suitable for the low-SES target ($M = 4.44, SD = 1.32, [4.04, 4.83]$), than for the high-SES target ($M = 3.48, SD = 1.47, [3.08, 3.88]$), $F(1, 97) = 11.37, p < .001, \eta^2_p = .11$, Cohen's $d = 0.7$. Symmetrically, participants thought teachers would prefer the higher track for high-SES targets ($M = 4.88, SD = 1.31, [4.51, 5.25]$) than for low-SES targets ($M = 4.20, SD = 1.26, [3.84, 4.56]$), $F(1, 97) = 6.38, p = .01, \eta^2_p = .07$, Cohen's $d = 0.5$. No other effects reached significance ($F_s < 1.41; p > .24$).

Discussion

Respondents displayed a gap in tracking decision, whether they were answering for themselves in their capacity as teachers or for other teachers. The second measure was included to test if participants would distance their own decision from that of other teachers. Our results indicate that this was not the case. Although we cannot attest to whether this indicates a conscious perception of discrimination in the school tracking system, it does however suggest that they imagine other teachers would produce a tracking decision that artificially recreates the social class hierarchy despite achievement being equal.

Experiment 2

Suitability of school tracks, assessment attributed to other teachers

We performed the same repeated-measure ANOVA on the assessment attributed to other teachers (i.e. "To what extent the other teachers making the decision would place the pupil in the lower vs. higher track?"). The main effect of tracks was not significant, indicating that participants did not think other teachers would favor one track over the other, $F(1, 67) = 2.66, p = .11$, but we did find the same interaction between the target's SES and the Track, $F(1, 67)$

= 15.03, $p < .001$, $\eta^2_p = .18$. Once more, participants imagined other teachers would consider the low-SES target ($M = 4.61$, $SD = 1.46$, [4.15, 5.06]) to be more suitable for the lower track than the high-SES target ($M = 3.22$, $SD = 1.31$, [2.73, 3.73]), $F(1, 67) = 16.68$, $p < .001$, $\eta^2_p = .20$, Cohen's $d = 1.0$. For the higher track, the high-SES target ($M = 4.97$, $SD = 1.28$, [4.47, 5.46]) was seen as more suitable than the low-SES pupil ($M = 3.95$, $SD = 1.49$, [3.45, 4.34]), $F(1, 68) = 9.18$, $p = .003$, $\eta^2_p = .12$, Cohen's $d = 0.8$.

Suitability of school tracks, personal assessment with full sample ($N = 90$, 2 missing answers)

We performed a 2 (Target's SES) X 2 (Track) ANOVA with the last factor as a repeated measure. First, we observed a significant main effect of Track, $F(1, 86) = 19.28$, $p = .001$, $\eta^2_p = .18$. Participants considered the higher track ($M = 4.89$, $SD = 1.55$, [4.63, 5.27]) to be more suitable for all targets than the lower track ($M = 3.49$, $SD = 1.74$, [3.12, 3.86]). The predicted interaction between Target's SES and Track was significant, $F(1, 86) = 5.80$, $p = .02$, $\eta^2_p = .06$. For the lower track, the low-SES target ($M = 3.90$, $SD = 1.83$, [3.42, 4.38]) was perceived as being more suitable than the high-SES target ($M = 3.08$, $SD = 1.53$, [2.52, 3.63]), $F(1, 86) = 3.79$, $p = .03$, $\eta^2_p = .06$, Cohen's $d = 0.5$, whereas for the higher track, the high-SES pupil ($M = 5.36$, $SD = 1.39$, [4.88, 5.83]) was perceived as being more suitable than the low-SES pupil ($M = 4.56$, $SD = 1.59$, [4.14, 4.98]), $F(1, 86) = 6.17$, $p = .02$, $\eta^2_p = .07$, Cohen's $d = 0.5$. The interaction between Target's SES and Gender was not tested given the imbalance in number of participants per condition in the full sample (only 20 participants saw the female targets).

Experiment 3

Suitability of school tracks, assessment attributed to other teachers

We tested our model with the suitability of tracks for other teachers (what participants imagined other teachers would decide). The main effect of Track was significant $F(1, 156) = 21.16$, $p < .001$, $\eta^2 = .11$, indicating that participants thought the higher track most suitable for all pupils ($M = 4.60$, $SD = 1.36$, [4.40, 4.80]), than the lower track ($M = 3.74$, $SD = 1.32$, [3.55, 3.94]). The interaction between Track and our planned contrast was significant, $F(1, 156) = 25.40$, $p < .001$, $\eta^2 = .14$. but not the interaction between track and the two residual contrasts, $F_s < 2.03$, $p_s > .16$.

For the lower track, the first contrast was significant, $F(1, 156) = 23.04$, $p < .001$, $\eta^2 = .13$, but the other two were not $F_s < 1$. The gap between the means for the low vs- high-SES

target is slightly larger in the selection condition ($M_{low-SES} = 4.32$, $SD_{low-SES} = 1.33$, [3.93, 4.70]; $M_{high-SES} = 3.26$, $SD_{high-SES} = 1.31$, [2.86, 3.65], Cohen's $d = 0.8$) comparatively to the educational condition ($M_{low-SES} = 4.13$, $SD_{low-SES} = 1.14$, [3.73, 4.53]; $M_{high-SES} = 3.27$, $SD_{high-SES} = 1.16$, [2.89, 3.65], Cohen's $d = 0.7$). For the higher track, the first contrast was also significant $F(1, 156) = 15.21$, $p < .001$, $\eta^2 = .08$, and the other two were not $F_s < 1$. However, unsymmetrically, on the higher track measure, the difference of means between low and high-status target appear slightly smaller in the selection condition ($M_{low-SES} = 4.29$, $SD_{low-SES} = 1.43$, [3.89, 4.69]; $M_{high-SES} = 5.13$, $SD_{high-SES} = 1.30$, [4.71, 5.54], Cohen's $d = 0.6$) than in the educational condition ($M_{low-SES} = 4.03$, $SD_{low-SES} = 1.34$, [3.61, 4.44]; $M_{high-SES} = 4.95$, $SD_{high-SES} = 1.09$, [4.55, 5.35], Cohen's $d = 0.8$).

THIRD LINE OF RESEARCH

Re-Establishing the Social-Class Order:
Restorative Reactions against High-Achieving, Low-SES Pupils

Re-Establishing the Social-Class Order: Restorative Reactions against High-Achieving, Low-SES Pupils³

Abstract

This research investigates a barrier faced by low-SES pupils who are on an upward social mobility trajectory: resistance to their high-achiever status. We hypothesize that, as they disconfirm the usual social-class academic disparities (i.e. high-SES on average outperform low-SES pupils), they threaten the status quo and induce restorative reactions that may hinder their chances of success. Experiment 1 showed that participants remembered less accurately information about pupils when low-SES pupils were presented as outperforming high-SES pupils than when the reverse was true. The errors appeared to be congruent with existing social hierarchies. In Experiment 2, pre-service teachers assessed a test supposedly produced by a low- vs. high-SES pupil who was presented as being either high or low achieving. The evaluation was harshest when the test was produced by a high-achieving low-SES pupil. These results suggest that people attempt to recreate the social-class academic hierarchy when it is challenged.

Keywords: social class, status quo, pupils, social mobility, discrimination.

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Re-Establishing the Social-Class Order:

Restorative Reactions against High-Achieving, Low-SES Pupils

The aftermath of the Great Recession has been more devastating to employment than any other economic crisis since the Great Depression. The increase in unemployment rates related to the crisis still persists in most OECD countries (OECD, 2015b). However, this affects disproportionately those with less education (OECD, 2013c). During this period of economic uncertainty, a higher level of education thus served as a protection against the risk of unemployment. Yet, according to international surveys, the opportunity to access such education is not equal for all students, as their socio-economic status (SES) strongly and positively predicts scholastic outcomes (OECD, 2014). In a context where a high educational attainment is more than ever needed to avoid joblessness, it is important to understand the factors leading to social-class inequalities in the access to this form of social protection.

In particular, we propose to investigate the obstacles faced by the low-SES¹ pupils who could gain access to and thrive in higher education because they are high achievers. These pupils disconfirm the usual social hierarchy in school, with higher-SES pupils usually outperforming lower-SES pupils. High-achieving low-SES pupils challenge the existing hierarchy and raise the possibility of social change; thus, we argue that they generate an urgency to restore the social order that may result in hindering their chances of success.

Social Hierarchy in the Educational System

Most groups and organizations are structured as a function of social hierarchies (i.e. formal or informal ranking of individuals or groups), which organize the power dynamics of social relationships (Case, Iuzzini, & Hopkins, 2012; Magee & Galinsky, 2008). At times, the hierarchy is explicit, such as the explicit authority of teachers over students. Other hierarchies, however, take on a subtler form, as is the case of pupils in classrooms (Flores, 2007). A major source that signals the pupils' place in the hierarchy is their performance: Following evaluation, pupils are placed on a hierarchical scale that supposedly corresponds to their academic performance (Sabbagh et al., 2006). Good grades offer considerable rewards, as they are perceived to imply a certain level of merit, which in turn grants the student a certain status, and symbolic as well as material privileges (e.g. good reputation, admission to universities; Felouzis & Charmillot, 2013). This stratification further serves as a foundation for future professional opportunities, and in time will determine one's socioeconomic status (Duru-Bellat, Meuret, 2009).

Thus, schools are the institutions that afford pupils some social position. To preserve social justice and the possibility of social mobility, the educational system is supposed to offer

the same chances to every pupil, regardless of social background. In reality, international surveys systematically report more chance for low-SES pupils to underperform, repeat grades, or drop out (OECD, 2014): Academic status is unevenly distributed across social groups, and the academic hierarchy tends to reproduce the social-class hierarchy.

To explain why low-SES pupils systematically find themselves lower in the academic hierarchy, a growing body of research proposes that schools themselves may erect barriers that hinder low-SES pupils' academic performance. Indeed, the educational system conveys norms, values, forms of knowledge, and dispositions that fit higher SES culture. Pupils who grow up in a lower SES context are transmitted a culture that is not rewarded in the academic system; in turn, this greater distance between their own culture and the one needed at school hinders their success (Bourdieu & Passeron, 1977; Stephens, Markus, & Phillips, 2014). Moreover, low-SES pupils face from a young age additional daily concerns likely to affect their academic performance, such as the fear of confirming the negative stereotype targeting their social group (Désert, Preaux, & Jund, 2009). Thus, the education system, through its values and practices, may create a threatening context for low-SES pupils, which results in their under-representation in high-prestige tracks and curricula.

Furthermore, even when low-SES pupils manage to overcome these barriers and attend higher education, they continue suffering from several predicaments (Jury, Smeding, Stephens, Nelson, Aelenei, & Darnon, this issue). Successful low-SES students should represent the fulfillment of education's aim of ensuring social mobility and social justice. On the contrary, educational institutions seem to make these students feel unwelcomed, marginalized, and alienated (Nelson, Englar-Carlson, Tierney, & Hau, 2006; Ostrove & Cole, 2003; Ostrove & Long, 2007; Read, Archer, & Leathwood, 2003; Reay, 1998). Compared to high-SES students, low-SES students often report isolation (Rubin, 2012) and a lack of "fit" or belonging (Harackiewicz et al., 2014). Moreover, even at university, these students also struggle with the threat introduced by negative stereotype (Croizet & Claire, 1998) or unfamiliar cultural norms (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012).

These lines of research document that educational institutions can create conditions that result in the underperformance of low-SES students. However, not all low-SES pupils underperform. We propose that even when low-SES pupils overcome the aforementioned barriers and thrive at school, they face an additional and hitherto unstudied barrier: They are perceived as threatening the social order at school, which triggers hierarchy-restoring reactions in evaluators. To restore the academic hierarchy of social classes, evaluators would cognitively and behaviorally undermine their success.

Threat to Social Hierarchy

Several lines of research posit that individuals tend to justify the status quo and demonstrate the psychological benefits of upholding the existing social arrangements for both advantaged and disadvantaged groups. According to just-world theory, individuals have a basic need to believe that their world is just and people get what they deserve (Lerner, 1980). Evidence contradicting this belief can be threatening and lead to various strategies to reduce this threat. Just-world restoration strategies usually involve some form of reinterpretation of an unjust situation. Individuals can reinterpret either the cause of an injustice, by blaming the victims instead of the situation or the perpetrator, or the outcome of an injustice, by explaining its consequences as positive for the victim (Hafer & Bègue, 2005).

Likewise, but focusing more on social structure, system justification theory suggests that people tend to support the structure of their system and perceive it as legitimate and necessary, even if the distribution of outcomes is disadvantageous to the self or the group (Jost, Banaji, & Nosek, 2004; Jost, Pelham, & Carvallo, 2002). People legitimize social-class inequalities, and system-justifying beliefs lower support for reducing economic inequalities (Rodriguez-Bailon, Loughnan, Willis, Lopez-Rodriguez, Sturrock, & Bratanova, this issue). Perceiving the status quo as the best arrangement led some authors to hypothesize that disadvantaged group members must not only face obstacles that are embedded in the structure of the social system to achieve equality, but also challenge how people think the system should be structured (Kay et al., 2009). Beside the legitimation of the current social order, motivations to justify the system can elicit restorative reactions against a potential social change, which may further hinder disadvantaged group members.

Regarding restorative reactions, the status incongruity hypothesis (Moss-Racusin, Phelan, & Rudman, 2010) proposes that group members who deviate from their group's usual status face a backlash. For example, in the case of gender, women who pursue power violate status expectancies and therefore appear as status incongruent. Both genders consider this incongruence a threat to gender hierarchy, which prompts negative attitudes and behavior as a backlash (Rudman, Moss-Racusin, Phelan, & Nauts, 2012). In one study, agentic women applying for a university professorship were considered less likeable and hireable than agentic men, even though they were perceived as equally competent. A follow-up demonstrated that such a negative attitude toward agentic women was especially prompted by a threat to the current system. The authors also documented the emergence of active success-hindering behavior toward status-incongruent women. Participants played a computer role-playing game that manipulated the leader's gender and leadership qualities. Participants then chose for the

leader clues that varied in difficulty, to help him or her in the task. Women with high leadership skills were more likely to be sabotaged (i.e. receive harder clues) than men with comparable competence. In sum, this research shows that low-status individuals with status-incongruent positions suffer from reactions aiming at restoring the status quo.

The Present Research

Our goal was to investigate whether social-class mobility—in particular the presence of high-achieving low-SES pupils—could be construed as a threat to the social order, and whether the presence of such a threat would elicit an attempt to restore the existing hierarchy. We hypothesized that upward social-class mobility could be perceived as a systemic threat, prompting individuals to recreate the hierarchy.

We decomposed this general hypothesis into two specific hypotheses, tested in two studies. The first hypothesis is that social-class mobility is threatening. We build on the literature showing that when the system hierarchy appears illegitimate, people misremember information about inequalities (Haines & Jost, 2000). Our first-study participants tried to remember information about pupils in a class in which either high-SES pupils outperformed low-SES pupils (social order) or low-SES pupils outperformed high-SES pupils (social disorder). If low-SES pupils climbing the achievement ladder threaten the status quo, then this condition should interfere with memory more than the social-order condition.

The second hypothesis is that social class mobility prompts individuals to actively recreate the hierarchy. In Study 2, pre-service teachers had to assess a test that was allegedly produced by either a low- or a high-SES pupil, who was either in the high achievers' track or the low achievers' track. We predicted that evaluators would be harshest in their test evaluation with the high-achieving low-SES pupils, thus actively undermining their success.

Experiment 1

Method

Participants. Seventy-three psychology students ($M_{age} = 20.22$ years, $SD = 1.19$; 63 women, 10 men) attending a Swiss university participated in our study in exchange for partial course credit. Participant's SES was computed on the basis of parents' level of education. First-generation (parents did not go to university, $N = 44$) and continuing-generation (at least one parent went to university, $N = 28$; 1 unspecified) participants were treated as the low and the high socioeconomic group, to follow a procedure frequently used in social psychology studies on social class (Stephens et al., 2012). Participants were randomly assigned to one of two experimental conditions (social order vs. social disorder).

Material and Procedure. The study was separated into three sections: memorizing

information, delay, and recalling information. First, participants were to memorize six school files containing administrative and academic information about 12 year-old pupils: parental occupation, grades, and academic status (whether the pupil had to repeat a year) among other neutral information (i.e. address, date of birth). The academic files contained only information commonly found in files available to Swiss teachers. Manipulation of pupils' SES relied on the parental occupation. Parents of high-SES pupils occupied professional positions (i.e. doctor, lawyer, marketing director) that usually require a university degree and grant high salaries (median annual income 84,500 to 110,000 Swiss francs; OFS, 2016). Low-SES pupils' parents had occupations (i.e. waitress, construction worker, receptionist) that do not require a university degree and grant lower salaries (median annual income 28,600 to 67,600 Swiss francs; OFS, 2016). The target pupils (3 girls and 3 boys; 3 from a high-SES and 3 from a low-SES background) were all said to be enrolled in the same class.

The six administrative files were identical in both conditions; only pupils' grades were manipulated. In the Swiss educational system, grades range from 1 to 6 (with higher numbers indicating better performance), and pupils have to achieve at least an average of 4 to move on to the next school year. In the social-order condition, pupils' performances fit the existing social order: The three high-SES pupils had good grades (averaging around 5.5), whereas the three low-SES pupils had mediocre grades (around 4). In the social-disorder condition, the pupils' grades were reversed and therefore challenged the educational status quo: The three low-SES pupils had good grades, whereas the three high-SES pupils had mediocre grades. The second part of the study created a delay between the memorizing and the recall of information. In this section, participants had to answer a 5-10 minute questionnaire² for another study about the use of various assessment methods in school.

Finally, participants were told to recall the information about the six pupils. Specifically, participants received a grid with each of the six pupil's name written in the first column. Next to the pupil's name, participants were asked to write down (a) one of the two parents' occupation, (b) the pupil's grades, and (c) whether the pupil had to repeat a year or not³. The total information recalled could range from 0 (none) to 18 (all pieces of information recalled for the six pupils). Finally, participants were asked some socio-demographic questions, and upon completion they were thanked and debriefed.

Results and Discussion

Percentage of correct answers. We coded the total amount of correct information recalled, $M = 11.25$, $SD = 3.11$. Wrong or no information was coded as an incorrect answer. We then transformed the number of correct items recalled into the percentage of correct answers

relative to the total number of possible correct answers (i.e. 18) and analyzed it in a one-way (social order vs. social disorder) ANOVA. Initially, we included participant' SES in the analysis. However, because the results showed no main effect or interaction, this variable was dropped from the final model.

As expected, the social-disorder condition reduced recall of pupils' information, compared with the social-order condition, $F(1, 71) = 8.02, p = .006, \eta^2 = .10$. The percentage of correct answers was lower when low-SES pupils outperformed high-SES pupils ($M = 63.65; SD = 3.00$), than when the scholastic hierarchy corresponded to the status quo ($M = 75.44; SD = 2.88$). Thus, in support to our first hypothesis, the condition that subverted the social order resulted in participants reporting significantly less correct information than in the condition that maintained the status quo.

Supplementary analyses. The above results showed an impairment of recall in the condition with the reversal in social order, showing that evidence contradicting the status quo interfered with participants' memory and suggesting a threatening effect of that condition. However, one might wonder whether the subversion of the status quo by high-achieving, low-SES pupils indeed is threatening or whether the interference comes from some other source. To infer the meaning of the impaired recall, we analyzed the nature of the errors.

Frequency of errors. As mentioned, participants had to report, for each of the six pupils, the information they had read, in each of three categories: one parent's occupations, the pupil's grades, and whether the pupil had to repeat a year. Only one pupil was presented as having repeated a year; this measure showed no variability and was not analyzed. Thus, we analyzed the errors regarding (a) parent occupation and (b) pupil grades: We computed (a) the number of times participants reported a wrong parental occupation, and (b) the number of times participants recalled a grade at least 0.5 point higher or lower than the one presented (0.5 is the smallest grade point in the Swiss system—e.g. ..., 4.0, 4.5, 5.0, ...). Because three targets of each SES were presented, participants could give from 0 to 3 wrong answers for both the grades and the parental occupation. We analyzed the frequency of errors among participants depending on the targets' SES and the condition.

To account for the high incidence of zero counts in these measures (i.e. no wrong answers; Osgood, 2000), we analyzed the data with Poisson regressions (King, 1988) with the experimental condition (social disorder coded -0.5, social order coded 0.5) and the targets' SES as predictors. To account for the within-subject nature of the SES variable, we specified the model to produce standard errors based on sandwich estimator (Rabe-Hesketh & Skrondal, 2012). Participants' SES was first included in the model but showed no main effect or

interactions and was therefore trimmed from the final model.

We first tested the effect of the social order and the targets' SES manipulations on the frequency of mistakes regarding *grades*. Results revealed no significant main effect of condition $b = -.39$, Wald $\chi^2(1, N = 146) = 1.83, p = .18$ or SES $b = .27$, Wald $\chi^2(1, N = 146) = 1.64, p = .20$. However, their predicted interaction was significant, $b = 1.26$, 95% CI [.44; 2.07], $SE = .42$, Wald $\chi^2(1, N = 146) = 9.17, p = .003$. To decompose the interaction, we tested the effect of the condition on the frequency of errors in *grades* for each SES target separately. We analyzed the data with Poisson regressions featuring robust standard errors to control for violation of the assumption that the dependent-variable variance equals its mean (Cameron & Trivedi, 2009).

Concerning low-SES targets, more participants made mistakes in recalling the grades in the condition where low-SES grades exceeded those of high-SES pupils' (social disorder), in comparison to the condition where low-SES grades were mediocre (social order), as shown in Figure 1, $b = -1.02$, 95% CI [-1.76; -.28], $SE = .38$, Wald $\chi^2(1, N = 73) = 7.27, p = .007$, IRR = .36; 95% CI [-.17; .76]. The difference between the Incident Rate Ratio (IRR) and 1 indicates the change in the expected outcome between the two conditions. The IRR change in errors is a 64% decrease in the social-order condition compared to the social-disorder condition. Errors in the latter condition indicate that participants "remembered" lower grades than the ones low-SES pupils really had. No significant effects of the condition emerged for high-SES pupils' grades, $b = .24$, Wald $\chi^2 < 1$, n.s.

Testing for the impact of the condition and SES on the number of errors regarding *parental occupation*, the analysis revealed a significant effect of SES, $b = -.84$, 95% CI [-1.34; -.34], $SE = .25$, Wald $\chi^2(1, N = 146) = 10.99, p < .001$, IRR = .43, 95% CI [.26; .71]. More participants made mistakes when recalling the occupation of the low-SES pupils' parents compared with high-SES pupils' parents. If the target student was from a high-SES background, the participant's incidence rate for incorrectly recalling the parental occupation would be expected to change by a factor of .43 (57% decrease), while holding all other variables in the model constant. However, neither the effect of condition $b = .22$, Wald $\chi^2 < 1$, n.s., nor the interaction emerged, $b = -.60$, Wald $\chi^2(1, N = 146) = 1.42, p = .23$.

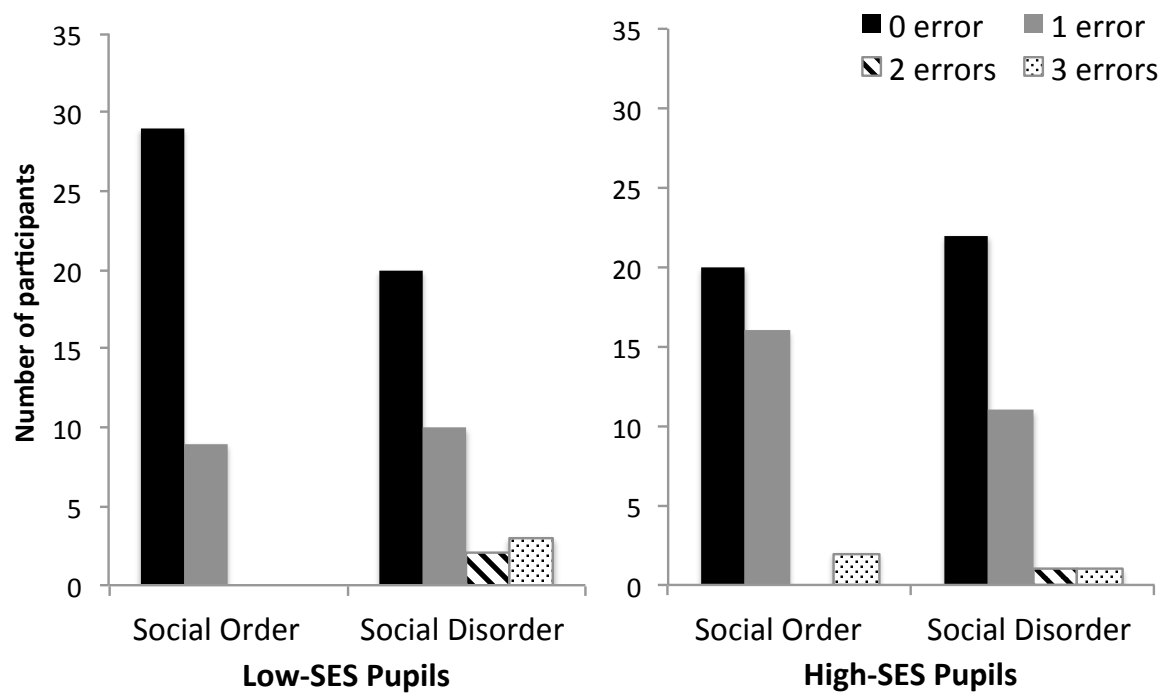


Figure 1. Experiment 1. Frequency of errors in the recall of pupils' grades as a function of the pupils' SES and the condition.

Thus, when the pupils' performance challenged the status quo (when low-SES pupils outperformed high-SES pupils), recall was less accurate than when the existing hierarchy was maintained. These results support the hypothesis that a disruption of the educational social order may induce a threat that affects participants' recall. Furthermore, exploratory analyses suggested that the elements that were not accurately recalled in the social disorder condition were not misrecalled at random: Participants appeared to misrecall information about these pupils in a manner that re-establishes social hierarchies. Under social disorder, more than in social order, participants frequently misrecalled low-SES pupils' grades by lowering them. In other words, participants had trouble remembering that low-SES pupils had good grades. When they misrepresented the grades of high-achieving, low-SES pupils, they reported lower grades, thereby actively redressing—at least in memory—the breached social order.

Experiment 2

The first experiment tested the first hypothesis and suggested that the disruption of social order, with low-SES pupils on the top of the achievement ladder, is threatening. The second experiment was then designed to test our second hypothesis that such threatening social class mobility prompts individuals to actively attempt to recreate the existing hierarchy. Pre-service teachers were asked to grade a test that was supposedly produced by a low vs. high-SES pupil, who was presented as being in either a high or a low secondary-school track. In

Switzerland, where the experiment took place, the higher secondary school track is accessible only to high-achieving pupils (about 40% in 2014) and gives access to higher education. A low-SES pupil in a track for high achievers benefits from a scarce resource typically benefitting high-SES pupils; this condition should prompt an attempt to actively restore the status quo, in this case by giving lower grades to that pupil.

Method

Participants. This study was conducted with pre-service teachers in a French-speaking Swiss teachers' college, who voluntarily took part in the study during a class ($N = 294$). Each participant was randomly assigned to one experimental condition in the Target's SES (low vs. high) x Track (high vs. low) between-participants design. Data from 8 participants were excluded because they expressed suspicion or were unable to assess the test. Data from 22 participants were excluded because they failed the manipulation checks related to the target's SES (i.e. high-SES target rated 4 and below or low-SES target rated 6 and above on the 7-point scale, $N = 8$) or the track ($N = 15$) or both ($N = 2$). The final sample included 224 women, 26 men, 11 unspecified ($M_{age} = 23.07$, $SD = 4.75$).

Material and procedure. Participants received a booklet containing the instructions, tasks, and questionnaire. They first read the cover story explaining that they had to imagine that they were a secondary school teacher, teaching French to 7th graders and that they would have to assess a dictation test using a specific assessment method.

Manipulation of the track. In the Swiss schooling system, the 7th grade is the first year of secondary school. Pupils have already been streamed towards one of two tracks, namely a lower track that is less demanding academically and directs pupils toward vocational education, and a higher track that is more demanding and gives access to higher education. Yet, change in tracking can still occur at the end of the 7th grade, especially if the pupils do not maintain the required level to remain in the higher track. One half of the participants read that they were teaching French to 7th graders who were in the lower track, whereas the other half read they were teaching to pupils in the higher track.

All participants were then informed they would have to assess the dictation using a norm-based method, based on grades, allowing them to gauge the students' learning, as well as where they stand compared to the norm defining success and compared to the others. An example of a math test graded accordingly was presented.

Manipulation of the target's SES. After reading the instructions about the assessment method, participants were presented with information about a pupil allegedly belonging to their class. Participants saw the pupil's file and a brief description of the pupil's extra-curricular

activities. Among neutral information (e.g. date of birth, address), SES was manipulated via the pupil's first name (typical of low- versus high-SES; cf. Coulmont, 2011), parental occupation (e.g. waitress vs. architect), and extra-curricular activities (e.g. visiting a local amusement park vs. traveling to London).

Dictation test. After reading the target's profile, participants had to assess a dictation test. They were asked to first underline the mistakes and then to give a grade (up to 6 with higher numbers indicating better performance). The test contained 15 obvious mistakes (wrong spelling, wrong verb conjugation, and wrong noun-adjective agreement) and 6 ambiguous mistakes (two possible conjugations or spellings).

Participants also rated the overall quality of the test they had to assess, on a 10-point scale (from 1 *very bad* to 10 *excellent*). The booklet ended with manipulation checks. One item asked for the pupil's track. Two items asked for information in the target description (i.e. number of siblings and favorite movie). The last item asked them to rate the target's socio-economic background (1 *highly disadvantaged* to 7 *highly advantaged*). Demographic questions were also collected. Upon completion, participants were thanked and debriefed.

Results and Discussion

Manipulation check. Participants' perception of the target's socio-economic status was analyzed in a 2 (track: lower vs. higher) x 2 (target's SES: low vs. high) ANOVA⁴. As expected, target SES had a main effect, $F(1, 264) = 123.83, p < .001, \eta^2_p = .31$. The low-SES target was perceived as coming from a less advantaged background ($M = 4.19, SD = 1.15$) than the high-SES target ($M = 5.73, SD = 1.10$). No other effect reached significance ($F_s < 1$). This analysis then excluded the 8 participants mentioned in the Participants section.

Total number of mistakes. We performed a 2 (track: lower vs. higher) x 2 (target's SES: low vs. high) ANOVA on the number of mistakes detected in the test by participants⁵. Results showed a main effect of track, $F(1, 254) = 7.07, p = .008, \eta^2_p = .17$. Participants found more mistakes in the test if the pupil was in the higher track ($M = 11.81, SD = 2.54$) than the lower track ($M = 10.95, SD = 2.54$). No other effect reached significance ($F_s < 1$).

Grade. We analyzed grade in a regression with track (lower track coded -0.5, higher track coded 0.5), target SES (low-SES coded -0.5, high-SES coded 0.5), number of mistakes (centered), and all interaction terms as predictors⁶. The main effect of the number of mistakes was significant, $b = -.06, 95\% \text{ CI } [-0.09; -0.03], t(232) = -4.47, p < .001, \eta^2_p = .08$, indicating that the more mistakes, the lower the grade. The main effect of the track also reached significance, indicating that pupils in the higher track received a lower grade than pupils in the

lower track, $b = -.17$, 95% CI [-0.32; -0.02], $t(232) = -2.24$, $p = .03$, $\eta^2_p = .02$.

Finally, the analysis revealed the predicted interaction between target's SES and track, $b = .30$, 95% CI [0.002; 0.61], $t(232) = 1.98$, $p = .05$, $\eta^2_p = .02$. As Figure 2 shows, participants gave lower grades to higher-track pupils of low SES ($M = 4.03$, $SD = .61$, 95% CI [3.88; 4.19]) than if they were high SES ($M = 4.31$, $SD = .56$, 95% CI [4.16; 4.47]), $b = .28$, 95% CI [0.06; 0.49], $t(232) = 2.55$, $p = .01$, $\eta^2_p = .03$. The SES difference in grades was not significant in the lower track ($M_{high-SES} = 4.33$, $SD_{high-SES} = .70$, 95% CI [4.18; 4.49]; $M_{low-SES} = 4.36$, $SD_{low-SES} = .58$, 95% CI [4.21; 4.51]), $b = -.02$, 95% CI [-0.24; 0.19], $t(232) = -0.24$, $p = .80$. No other effect reached significance ($ts < 1.63$; $ps > .10$).

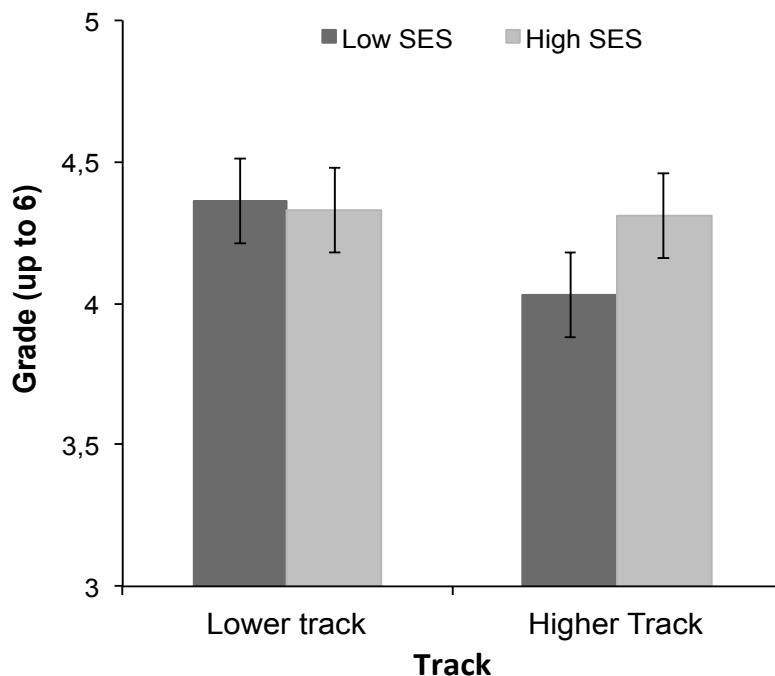


Figure 2. Experiment 2. Grade attributed to the test as a function of track and pupil's SES, controlling for the number of mistakes found in the test. Error bars represent the 95% confidence intervals.

Rating of the test. The overall evaluation of the test on a 10-point scale positively correlated with the grade, $r = .62$; $p < .001$. An analysis on this related, yet not strictly redundant, indicator of the test evaluation used target track, target SES, number of mistakes detected, and all interaction terms as predictors⁷. The analysis revealed a significant main effect of the number of mistakes, $b = -.17$, 95% CI [-0.24; -0.10], $t(247) = -5.10$, $p < .001$, $\eta^2_p = .09$. The interaction between target's SES and track was significant, $b = .69$, 95% CI [0.14; 1.37], $t(247) = 2.01$, p

= .05, $\eta^2_p = .01$. Participants assessing higher-track pupils rated the test quality lower if attributed to a low-SES pupil ($M = 5.74$, $SD = 1.22$, 95% CI [5.40; 6.08]) than to a high-SES pupil ($M = 6.36$, $SD = 1.33$, 95% CI [6.03; 6.70]), $b = .62$, 95% CI [0.14; 1.10], $t(247) = 2.58$, $p = .01$, $\eta^2_p = .02$. The SES difference in test rating was not significant in the lower track ($M_{high-SES} = 6.33$, $SD_{high-SES} = 1.64$, 95% CI [5.99; 6.68]; $M_{low-SES} = 6.40$, $SD_{low-SES} = 1.59$, 95% CI [6.05; 6.75]), $b = -.07$, 95% CI [-0.55; 0.41], $t < 1$, $p = .77$. No other effect was significant ($ts < 1.59$; $ps > .11$, marginal track main effect, $t = -1.82$, $p = .07$).

The results on the grade and dictation-test rating support our second hypothesis: In the higher track, which only high achievers can access, the test received lower grades and ratings when the pupil was of low-SES rather than of high-SES, even though the actual quality of the dictation test was the same. There was no significant SES difference when the pupils were said to be in the lower track, where general expectations of success are lower. These results suggest that high-achieving, low-SES pupils face a behavioral barrier from their evaluators (it is not trivial that the participants in the present experiment were pre-service teachers). To restore the academic hierarchy of social classes, evaluators seem to actively diminish the success of the low-SES pupils who are on their way toward social mobility.

General Discussion

Previous research has documented that pupils from lower-SES face a host of structural, cultural, and psychological barriers during their educational trajectory, which often contribute to their underperformance (e.g. Désert et al., 2009; Stephens et al., 2014). The present research aimed to investigate for the first time the barriers encountered by those low-SES pupils who do not underperform and sometimes even outperform their high-SES counterparts. We hypothesized that high-achieving, low-SES pupils may (1) threaten the social order and (2) prompt their evaluators to restore the usual educational hierarchy.

To test our first hypothesis, we sought to document that disruption of the education status quo induced a threat. In support, the first experiment revealed that participants presented with a classroom defying the current educational hierarchy (low-SES pupils outperforming high-SES pupils) displayed impaired memories about those pupils, as compared with a condition that maintained the status quo. More specifically, in the social-disorder condition more than in the social-order condition, participants mistakenly remembered low-SES pupils as being low achievers. This effect cannot be explained by better recall for expectancy-congruent information because they *misremembered* the information. Indeed, two meta-analyses on memory for schema-consistent/inconsistent (Rojahn & Pettigrew, 1992) and expectancy-congruent/incongruent information (Stangor & McMillan, 1992) have concluded

that, if anything, there is an overall tendency toward better recall for inconsistent information. Thus the present results could be interpreted as an interference with basic information processing and not as a tendency to remember information consistent with social expectations.

The second experiment tested our second hypothesis that, when confronted with high-achieving, low-SES students, evaluators would try to recreate the status quo by actively hindering the achievement of those pupils. To precisely identify the source of the threat, we manipulated target SES and achievement level in the school system (i.e. higher vs. lower track) to see if participants would specifically diminish the performance of high-achieving, low-SES pupils. Our results confirmed this hypothesis and supported our effects as restoring the hierarchy. Indeed, if the assessments by these pre-service teachers were influenced by social expectations (of social class), target's SES would have yielded merely a main effect, regardless of our manipulation of pupil position in the educational hierarchy. Conversely, evaluators could have solely been affected by the presentation of the pupil's prior achievement, which could have been deduced from position in the school's higher or lower track. Our results, however, indicated that the performance of only the high-achieving, low-SES pupils was negatively affected. One specific limitation for this study is that we were unable to collect participants' SES. Therefore, we could not assess whether the observed behavior was moderated by the pre-service teachers' own socio-economic background.

The first contribution of our findings is to present a new insight on the mechanisms favoring the perpetuation of the social-class achievement gap. A growing body of literature interested in low-SES underachievement has shown that educational institutions create contexts that directly hinder low-SES students' performance (e.g. Jury et al., this issue). Our research complements this research by providing evidence that reaching a high level of achievement, far from protecting low-SES pupils, actually induces additional academic obstacles. Indeed, their success seems to be threatening the social class hierarchy in schools and provokes cognitive and behavioral reactions to undermine it.

Additionally, a few investigations have examined the backlash behaviors toward low-status group members who defy their usual social position, with a focus on gender hierarchy (Rudman et al., 2012). Thus, the second contribution of our findings is to provide evidence for backlash toward low-SES pupils on an upward social-mobility trajectory. Specifically, evaluators actively under-rewarded the performance of high-achieving, low-SES pupils by lower grades and ratings, thereby interfering with their attempt to climb the academic ladder.

Potential practical implications of the present results relate to the current economic climate, even if such a discussion goes beyond what the data show. As mentioned, since the

Great Recession, the economy is unstable, with increased unemployment (OECD, 2015b). Previous research showed that displaying information about an instable economy favors backlash against status-incongruent women (Rudman et al., 2012). Combining this research with the present results, we could extrapolate that the current economic climate may trigger particularly negative reactions toward high-achieving, low-SES pupils. Moreover, as noted, since the economic crisis, reaching a high level of education is even more crucial to avoid unemployment than in the past (OECD, 2013c). In Switzerland, despite an overall small economic impact of the recession, the Swiss minister of economy has recently proposed to increase educational restrictions to further reduce the number of high-school diplomas delivered (in 2015, 20% of individuals of the same age group received the diploma) in order to reduce unemployment (Lugon Zugravu, 2016). However, since the recession, youth (25-34 year-old) unemployment rates have slightly increased for individuals with below secondary level of education (13.3% in 2010 vs. 16% in 2014), but have remained stable for individuals in the same age group with higher education (upper secondary or post-secondary non-tertiary: 5.4% in 2010 vs. 5.1% in 2014; tertiary: 4% in 2010 vs. 4.6% in 2014; OECD, 2015b). As a result, speculatively, the crisis might increase social-class inequalities, by fostering negative reactions toward high-achieving, low-SES pupils and then depriving them from a more-than-ever-needed protection against unemployment. The potential consequences of these effects could contribute to increase existing social inequalities in the education system. The experimental nature of our studies limits the external validity of our findings, which would benefit from further examination in order to effectively translate these results into interventions for teachers. In the achievement-gap literature, many interventions are geared towards students to help them improve their academic outcome (Yeager & Walton, 2011). In light of our results, it seems useful also to address the systemic barriers blocking low-SES students from academic success by devising interventions to raise teachers' awareness of these effects. Particularly in countries practicing early tracking, such as Switzerland, interventions might prevent biased academic decisions, which may affect low-SES students' entire academic journey.

One general limitation merits mention. Although our results are consistent with the hypothesis that disruption of the social class hierarchy is threatening, the evidence of threat in our studies is indirect. The measurement of threat is a classic problem in social psychological research (Scheepers & Ellemers, 2005). Using explicit measures of threat relies on the assumption that individuals are necessarily conscious of its presence. This assumption is questionable, as behavior can be affected by threat without participants being aware of it (Blascovich, Mendes, Hunter, & Lickel, 2000). Furthermore, trusting self-report measures can

be deceptive, as participants who are the most likely to experience it might also be the least likely to report it as a defense mechanism (Branscombe, Ellemers, Spears, & Doosje, 1999). Given the limitations of using explicit measures, we chose to rely on cognitive and behavioral measures that are consistent with a reaction toward a threat. One aim of future research in this area will be to measure the threat more directly. For instance, prior work has shown that societal instability and perceived system threat are associated with higher endorsement of conservative policies and support for the status quo (Jost et al., 2003; Bonanno & Jost, 2006). An interesting venue could be to test the effects of social-disorder exposure on measures of support for the social system to see if disruption of the social class hierarchy can also lead people to defend the system.

Although the dominant discourse in most educational systems is filled with promises of equal opportunity, when lower-SES students manage to overcome academic barriers to go the university, they report facing an unwelcoming environment (Jury et al., this issue). The present research set out to investigate, well before students arrive at university, one of the reasons why high-achieving, low-SES students are not welcomed in their upward social mobility, namely that their success threatens the educational hierarchy. Our studies' pattern of results seems consistent with this reasoning. Taken together, the present findings provide evidence that high-achieving, low-SES pupils threaten the status quo, and that given the opportunity, evaluators may be tempted to undermine their achievement.

Footnotes

¹ Research has operationalized social class in various manners, as for instance in terms of socio-economic status (e.g. Croizet & Claire, 1998), and socio-cultural status (e.g. first/continuing generation to attend University; Stephens et al., 2012). The present research focuses on socio-economic status but benefitted from the insights of research studying the effects of socio-cultural status. See Kraus, Piff, Mendoza-Denton, Rheinschmidt, and Keltner (2012) for a review of these differences.

² The measures of the questionnaire are not relevant for the hypothesis presented here, and we did not report the results. They are however available upon request from the authors.

³ Participants were also asked to recall the pupil's number of brother and sisters. We did not report the results, but they are available upon request from the authors.

⁴ There is a missing value in the analysis because a participant did not fill in the scales.

⁵ There is a missing value in the analysis because a participant did not fill in the scales.

⁶ Nineteen participants did not write the grade on the test. Two outliers were removed due to abnormal residuals, uncommon deleted studentized residuals, and Cook's distances.

⁷ Two participants did not fill in the rating scale. Three outliers were removed due to abnormal residuals, Cook's distances, and leverage values.

GENERAL DISCUSSION

I. Highlights of the present set of studies

The present dissertation stemmed from the observation that in spite of the educational system's meritocratic objectives, lower-SES students comparatively to higher-SES students are more likely to produce lower performance and be underrepresented in higher education institutions. Explanations of how social inequalities can become inequality of opportunities in school has drawn the attention of many scholars in sociology and psychology. While part of the research has been dedicated to understanding the family processes which underlie some difficulties encountered by lower-SES students in school (Halsey et al., 1980); the literature in social psychology has focused on the role that institutions play in creating situations that lead to the reproduction of disadvantages (Croizet et al., 2017, Stephens et al., 2012). Most of the relevant research in social psychology aimed its focus at students' variation of performance. The reasoning is that if schools contribute to social reproduction, then differences in performance from lower-SES should manifest as a function of the educational situations. Our research proposed to go beyond the study of students' performance to study how the gap can be created by investigating the effect of institutional function on evaluators' behavior. Our experiments were devised to examine the under-investigated relation between institutions, practices and individuals and how those intersect to exclude lower-social class pupil from academic opportunities.

In the first part of this work, we argued that selection practices contribute to the reproduction of social class inequalities in school. We predicted that educational practices used to fulfill an institutional selection function would produce differentiated academic outcomes which corresponds to students' initial status asymmetry. In the second part, we turned our attention to another form of disadvantage which could lead to the perpetuation of social class inequalities in school, targeting low-SES students who are in upward mobility process. Specifically, we investigated the negatives repercussions that arise for lower-SES students who deviate from usual status expectations. We proposed that evaluators undermine the academic achievement of lower-SES students when they are presented as high-achieving (i.e. when their performance is indicative of their upward mobility process).

I.1. The role of the selection function on the reproduction of SES inequalities

The objective of the first (Study 1.1 to 1.4) and second (Study 2.1 to 2.3) lines of studies was to provide an experimental demonstration that the selection function of institutions and selective institutional practices lead evaluators to artificially create differences between high

and low-SES students in spite of actual differences in performance. Our hypothesis was informed by a socio-cultural approach to social psychology which promotes the integration of cultural and psychological factors to understand how practices influence individuals within institutions. Drawing from this perspective, we hypothesized that the creation of a social class achievement gap would be the byproduct of individuals using practices that served an institutional purpose of selection. This hypothesis relies on the assumption that institutional practices convey to evaluators the function they serve in the institution. We contend that institutional functions then shape the behavior of evaluators in a manner that maintains, or not, the status quo. We relied on two separate paradigms. In the first line of studies, the comparison of the number of mistakes found in the dictation test of a high vs. low-SES student served as an indicator of a bias in evaluation. A more consequential academic evaluation (i.e. tracking) was used in the second set of studies to show that differences in evaluation between students can occur on measures that were said to affect students' entire academic trajectories.

In the first set of studies (1.1 to 1.4), we formulated a first hypothesis, namely an interaction between assessment method and pupil's SES on the number of mistakes found in a dictation test. More specifically, we expected more mistakes found in the dictation test of a low-SES student than in that of a higher-SES student when normative assessment but not when formative assessment was used to assess the test. Our second hypothesis predicted that the selection function underlies the effect of normative assessment. We therefore expected the selection function to override the effect of using a specific assessment method and interact with the student's SES to predict the number of mistakes found.

The results of Study 1.1 were congruent with the first hypothesis. On average, participants found 1.49 more mistake in the dictation test of the low-SES student comparatively to the high-SES student when using normative assessment vs. using formative assessment. The results of Study 1.1 revealed a methodological complication. The time used by participants to complete the study, conflated with the assessment method condition, interacted with our predictors.

We therefore conducted a second study (Study 1.2) to control for the effect of time by instructing participants to use a specific assessment method (normative vs. formative assessment) and start by underlining the mistakes. Participants were not asked to complete the second part of the task (i.e. giving grades or comments) to ensure that comparable time was spent in both conditions. Replicating the effects of Study 1.1 while controlling for the effect of time, findings of Study 1.2 confirmed our expectations. More mistakes (1.48 on average) were found in the low-SES student's test than in the higher-SES student's when participants were in

the normative assessment condition. No significant differences in number of mistakes appeared when participants were in the formative assessment condition.

In Study 1.3, the function of assessment (selection vs. educational) was manipulated along with the assessment method and the student's SES. In line with our second hypothesis, Study 1.3 revealed that the function of assessment, and not the assessment method, interacted with the student's SES to predict the number of mistakes underlined, thereby suggesting that it is the selective purpose of assessment rather than the assessment method itself that leads evaluators to differentiate between students. On average, when assessing to select, participants found 1.12 more mistakes in the low-SES student's test than in the high-SES's.

A fourth study (Study 1.4) expanded on those previous findings to explore the generalizability of this effect with a newly created assessment method and to disentangle whether biased evaluation is a product of low-SES discrimination or high-SES favoritism. Despite showing similar patterns, results of Study 1.4 did not significantly replicate our previous finding. To ensure the robustness of our effect, we conducted a small-scale meta-analysis; the results of which confirmed a small but significant effect size of selection in the creation of an achievement gap. Furthermore, results of this study indicated an overall favoritism effect for the high-SES student, such that when compared with the low-SES student, the high-SES student received more positive feedback on the same test.

In the second set of studies (Study 2.1-2.3), we tested the effect of student's SES with another common educational selective practice: Tracking. The target student's earlier performance was kept constant while the SES was manipulated (using similar information to Study 1.1 to 1.3) in order to predict tracking decisions. Results of study 2.1 confirmed our expectations that participants considered a lower track more suitable for a low-SES than for a high-SES student with the same performance and inversely for the higher track. Findings were replicated in a second study (Study 2.2) with a sample of teachers. Once again, differences in perception of tracking suitability for the higher and lower track corresponded to the status asymmetry. In Study 2.3, we hypothesized that the gap in tracking decisions would be wider following a presentation of the Swiss school system as serving a selection function comparatively to an educational function. We manipulated the function of institution (selection vs. educational) as well as the target's SES to test whether a selective institution would lead evaluators to a stronger gap in tracking decisions. Results were to some extent consistent with our hypothesis, providing convergent results with those of Study 1.3.

Together, the results of Studies 1.1 to 2.3 allow us to draw a two-fold conclusion. First, they suggest that educational practices can contribute to social class inequalities by leading

evaluators to generate a gap in academic outcomes even when performance is equal. Furthermore, the findings in Study 1.3 indicate that it might not be the use of those practices per se that is responsible for the gap, but it is the function these practices serve in the institution that drives the behavior in these studies. Specifically, the artificial gap either disappeared -or appeared smaller- when the practices served an educational purpose rather than a selective purpose.

1.2. Regulation of the social order in educational institutions

The objective of the third set of studies was to investigate if a threat to social order in school (in the form of unexpected academic performances of lower-SES students) prompted evaluators to undermine the academic achievement of low-SES students. Specifically, the second part of this work is an experimental examination of evaluators' reactions when faced with a disruption in the usual educational hierarchy. Drawing from the status-incongruity hypothesis, we predicted that low status students (i.e. low-SES in the case of our studies) who disconfirm usual expectations in terms of achievement would more likely suffer from backlash.

This hypothesis was tested in a first study (Study 3.1) in which social order was manipulated by presenting participants with six academic files containing information about the socio-economic status of 12-year-old students and their grades among other neutral information (i.e. address, date of birth, etc.). In one condition, the grades challenged social expectations (i.e. low-SES students were shown to have better grades than high-SES students), and in the second condition students' performances were congruent with the existing hierarchy in school.

Results of Study 3.1 show that participants were better able to recall correctly information of both high and low-SES students in the "social order" condition comparatively to the "social disorder" condition. Moreover, participants were more likely to make mistakes when participants had to recall low-SES students' good grades (i.e. by remembering the grades as being bad) comparatively to the condition where the grades were mediocre. No significant differences were found between conditions for the high-SES students. In sum, these results show that when students' performance was congruent with expectations, the recall task was easier to execute than when these expectations were disconfirmed. Moreover, the results suggest that participants tended to recall information about low-SES students in a manner that could disadvantage high-achieving low-SES students and affect their ability to engage in an upward mobility process.

We tested the same hypothesis in a second study (Study 3.2) with a similar paradigm to Studies 1.1 to 1.3 in order to extend the findings of Study 3.1 to evaluators' behavior. A sample of pre-service teachers were asked to grade the dictation of a student whose SES and academic track was manipulated. This design allowed us to directly compare whether low-SES student's achievement was undermined when the student was presented as a high-achieving and was therefore engaged in upward mobility process

Results of Study 3.2 showed an interaction effect between the student's SES and track. In the lower track, pre-service teachers gave the same grade to students independently of their SES. In the higher track -which gives access to higher education- the low-SES student received a lower grade comparatively to the high-SES student with the same dictation test.

Taken together, the results of Studies 3.1 & 3.2 indicate that high-achieving low-SES students are at a disadvantage. When the low-SES students were presented as being high-achievers, their achievement was more likely to be mistakenly reported as bad and received a lower grade by pre-service teachers for the same performance. The results are also congruent with our suggestion that evaluators could hold hierarchy-restorative motivations. Both studies indicate that achievement was undermined when low-SES students were high-achieving. Overall, our results are consistent with our main hypothesis of hierarchy-restorative behaviors in the educational systems.

2. Integrative summary

2.1. Comparison of the dependent variables

The three main dependent variables (number of mistakes, suitability of tracks and grades) were operationalized to reflect participants' propensity to (un)fairly distribute academic resources in specific educational contexts. However, each contain specificities that should also be discussed separately. To summarize, in the first line of research (Study 1.1 to 1.3), participants were asked to correct a dictation test. To ensure that the dependent measure remained directly comparable across assessment conditions (normative assessment vs. formative assessment) and to equalize time constraints in the conditions, the number of mistakes underlined served as the main dependent variable. In the third research line (Study 3.2), participants used specifically normative assessment to correct the dictation test and were asked to grade the performance. Finally, in the second research line (Study 2.1 to 2.3), the dependent variable was the extent to which participants found the lower vs. higher track suitable for the target student.

Specific differences of gap weren't expected between the three measures, but the objective in this thesis was to investigate whether SES differences arose across contexts potentially involving different levels of deliberate decision-making. Finding mistakes, grading and choosing tracks can be argued to implicate more or less active deliberation. For instance, finding mistakes should be less guided by conscious decisions processes when compared to grading or choosing tracks. We deemed it unlikely that participants would consciously refrain from finding errors in specific circumstances. This does not mean that variation in motivation to find errors (based on academic expectations and institutional function of assessment) weren't expected, but we hypothesized that this behavior could be less driven by conscious deliberate decisions as compared to grading or choosing tracks. Indeed, prior research on grading has shown that teachers explicitly adapt their criterias for a grade based on considerations other than just performance such as student's perceived effort or need (Resh, 2009). However, even in the case of grading, it can be presumed that the consequence of attributing one grade is not perceived to bear important repercussions over the entirety of an academic trajectory. This differentiate the process of grading and choosing track. In the second line of research, participants were explicitly reminded that tracking would either lead to high school and university or to a vocational school.

An additional difference between the measures is the punitive vs. rewarding nature of the dependent variables for the students. In Studies 1.1-1.3, finding mistakes is a punitive process for the student, even if this process can be used to fulfill different function, as hypothesized in Study 1.3. Participants could not report a positive feedback in this research design. In contrast, Studies 1.4-3.2 used measures that could hold either positive or negative repercussions for the student. For instance, in Study 1.4, participants underlined both good and bad sections of text. In Studies 2.1-2.3, participants indicated to what extent they found the high and the low track suitable. And finally, in Studies 3.1-3.2, remembering student's performance or giving a grade can be both punitive or rewarding for the students, depending on the outcome.

Yet in all three research lines, when using selection practices, the expected SES gap was observed (except for Study 1.4). Interestingly, this suggest that the effect of the target background is robust even in contexts that could be hypothesized to involve little conscious deliberation or independently of the valence of the measures. It is important to keep in mind that these studies were conducted in laboratory settings and no measure to discern the level of deliberation of participants or the perception of punitivity of the measures was included. We can only speculate over the extent to which these processes might have taken place in the mind of participants. The similar pattern found across the three research lines can however attest that

even when achievement is equal the effect of selection practices on SES inequalities appears at various stages of students' academic path and could potentially cumulate over a student's school trajectory.

2.2. Low-SES discrimination or high-SES favoritism?

In the three research lines, targets' SES was either manipulated with the same material (such as in Study: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3 & 3.2) or with similar information (Study 1.4 & 3.1). This allows for a direct comparison of the effect of SES in three separate fictional educational contexts. As none of the studies included a control no-SES condition, the differences can only be interpreted in comparison to the other SES-condition, but the specific characteristics of each of the research line can provide preliminary indication as to whether the effect appears to be related to a discrimination or to a favoritism process.

In the first line of research (1.1 to 1.3), participants received no prior information concerning the student's prior level of achievement nor were they given any information about the expectations for the test so as to render the assessment situation as neutral as possible. The performance of the target (i.e. actual number of mistakes intentionally included) and the costs involved with each assessment method was equalized across conditions. Therefore, the results of the first line of studies indicate how an average performance is partially constructed by evaluators in their correction in absence of additional information. The content of the dictation test (number of mistakes included) provides information as to the student's level of competence but the actual performance (number of mistakes found) is also a function of the evaluator's competence or motivation. On this matter, it should be noted that the number of mistakes intentionally included in Studies 1.2 & 1.3 (14 mistakes) is closer to the average number of mistakes found in the selection condition for the low-SES students (Study 1.2: $M = 12.43$ & Study 1.3: $M = 12.71$) than for the high-SES student (Study 1.2: $M = 10.95$ & Study 1.3: $M = 11.59$) or in the assessment to educate condition (Study 1.2: $M = 11.70$ & Study 1.3: $M = 11.55$). While this doesn't affect the interpretation of the role of the institutional function of assessment on the reproduction of inequalities, it could be seen as an indication that participants were more diligent when assessing to select the low-SES comparatively to the high-SES student or as compared to the assessment to educate conditions. Although speculative at this point as the studies' design do not provide a definite answer, a possible interpretation could be that participants are less attentive on average in the assessment to educate conditions independently of SES, while in the assessment to select condition, participants' high expectations of high-SES students lead to a less rigorous correction. In other words, participants could be searching for

more mistakes in the selection condition but less so for a high-SES student. Taken together with the result of Study 1.4, this could indicate that it is specifically high-SES students who are favored as compared to low-SES students.

In the second line of research, the dependent measures (i.e. suitability of tracks) was conceptualized as a measure of distribution of academic rewards. Specifically, the three studies (2.1 to 2.3) test whether this influential academic benefit is afforded to some groups of students rather than others. Given that the scenarios were based on specific circumstances naturally occurring in the swiss tracking system, the target students were presented as having an average performance that is below the usual expectations for the higher track. As such, rather than documenting a process of discrimination for individuals who meet the necessary criteria for an opportunity, the dependant variable in the second research line indicate the extent to which students are offered a second chance in the academic system. It should also be noted that tracking in itself is not a neutral practice, but a selection practice. The results of the second line of research should therefore be interpreted as an academic privilege (or the benefit of the doubt) that is more readily offered when using a selective practice to high-SES students comparatively to low-SES students when their performance is slightly below objective criterias.

Finally, in the third research line (Study 3.2), participants were asked to correct a dictation test but with an assessment geared towards selection (i.e. normative assessment). The dependent variable was changed from number of mistakes to grades in order to determine whether the gap would generalize to grading practices. Before the correction, participants were told the track in which the target student was, thereby informing them of the target's prior level of achievement. Results determined that the gap in grades appeared only when the targets were in the higher track. There could be two possible interpretations for this effect. On the hand, one could suggest that students should receive the same grade for the same objective performance in a dictation test, independently of track level. Following this logic, it is the low-SES student in the higher track who is discriminated. This interpretation is consistent with the results of Study 3.1, where the performance of high-achieving low-SES students is undermined by participants. On the other hand, it can be argued that students in the higher tracks should be graded more harshly than students in the lower tracks for the same performance. In this case, the gap in the higher track condition suggests that the high-SES student is afforded a more lenient grade than what can be expected. This interpretation is more in line with the speculative interpretation of a high-SES favoritism bias. At any rate, if there is a favorable high-SES bias, the effect does not extend to contexts where these students are presented as low-achievers or when the institutional function is to educate students. Results of Studies 3.1 and 3.2 indicate no

favorable treatment of high-SES students when they are presented as low-achievers or as being in the lower track.

In sum, we cannot definitely determine on the basis of our studies whether the underlying processes are driven by a favorable bias towards high-SES students or discriminatory bias against low-SES students, or even both. Except for the results of Study 1.4 (indicating a high-SES favorable bias) or Study 3.1 which more clearly suggest a less favorable outcome only for high-achieving low-SES students. For the remaining studies, the results can theoretically be interpreted as more in line with the hypothesis that it is high-SES students who are favored. This possible interpretation is not inconsistent with prior literature on the social class achievement gap, nor does it contradict the framework proposed by the sociocultural approach to educational inequalities or other social-psychological perspectives on the reproduction of inequalities. The selective structure of educational institutions can simultaneously provide threatening contexts for the performance of low-SES students but encourage agents to favor high-SES students. Importantly, the socio-cultural approach emphasizes the importance of focusing on the resulting outcome for the disadvantaged group members more than on the intent of perpetrators. In terms of outcome, the results of this thesis demonstrate that selection practices lead to the the differentiation of students in spite of achievement being equal. This differentiation could mean that low-SES students are less likely to benefit from advantages afforded to high-SES students or are discriminated against. In any case, low-SES students are at a disadvantage as compared to high-SES students.

As for other social-psychological perspectives on the reproduction of inequality, there remains some theoretical disagreements over the use of the term “discrimination” as encompassing both high-status group favoritism and low-status exclusion. Some see it as “two sides of the same coin”; others argue that these are completely independent processes (DiTomaso, 2015). On this matter, we would contend that this distinction is central for understanding processes focusing on the perpetrators but not necessarily when studying outcomes for disadvantaged group members. However, it has been recently suggested that exclusion of low-status groups may not be the most common mechanism through which the reproduction of inequalities occur (DiTomaso, 2015; Greenwald & Pettigrew, 2014). If so, then the study of processes favoring high-status groups could be crucial to better understand how the status quo is maintained.

2.3 Comments on teachers' biases: way forward?

Evaluators' own background (i.e. participants' SES) never significantly interacted with the target' SES or with the institutional function. The absence of evidence for an effect shouldn't necessarily be interpreted as evidence for its absence, but this pattern is nonetheless consistent with the initial prediction that the discriminatory behavior is driven by structural factors. Additionally, as educational institutions have been argued to be imbedded in socio-cultural contexts favoring high-SES norms and behaviors over low-SES's (Croizet et al., 2017), we expected evaluators to consensually discriminate in this specific institutional context.

This result is perhaps nonetheless surprising considering some existing evidence that matching teacher-student by group membership can have favorable effects on performance. But these studies have focused on groups such as race, ethnicity or gender (Cho, 2012; Dee, 2005; Dee, 2007). They also do not present evidence that this effect is due to a favorable bias and sometimes find that teacher-student matching do not affect majority students (Nixon & Robinson, 1999; Paredes, 2014). Moreover, a recent study shows that this increase of performance was due to teachers representing role models for minority groups and not to any (un)favorable treatment from teachers (Paredes, 2014). That is not to say, as mentioned previously, that teachers do not hold stereotypes or differential expectations, rather that there is little systematic evidence that those vary as a function of teacher's own group and that it extends to them enacting biased behaviors (Li, 1999; Sansone, 2017).

In sum, our results do not present a convincing case that the creation of an SES gap is related to intergroup conflict concerns, which is consistent with the available prior evidence on this issue and doesn't necessarily contradict SIT's predictions in the case of institutional norms promoting consensual discrimination (Rubin & Hewstone, 2004). This insight can be however important when considering the potential implications for schools wishing to promote egalitarian behaviors among teachers. For instance, increasing diversity among teaching staff may not reduce discrimination. Another common suggestion in the literature is to focus efforts on combatting teachers' stereotypes (Glock & Krolak-Schwerdt, 2014). We agree that this is a desirable and potential fruitful pursuit but are skeptical that there is any convincing evidence that the techniques currently in use are always successful at addressing these concerns (for a review on implicit bias training, see Forscher et al., 2018). Furthermore, there might be unintended consequences that can arise from focusing teachers on stereotypes or students' social groups (Duguid & Thomas-Hunt, 2015). On the one hand, deconstructing how educational systems erect barriers for disadvantaged students might be beneficial for teachers to avoid them conflating disadvantage with lower abilities. On the other hand, it is hard to anticipate whether

this can inadvertently trigger intergroup conflict, perpetuate the stigmatization of disadvantaged students and increase the chance that those who do succeed are perceived as stereotypically-incongruent. In the meantime, the present results indicate that if evaluators hold differential expectations or social class stereotypes, it only affects behavior when evaluators use institutional practices that serve a selection function. Until such time where reliable means to reduce stereotypes are found, it might be advisable for schools to focus initially on reevaluating the primary goal of their institution in collaboration with their teachers rather than focusing on either teachers' or students' social group.

3. Contributions of the present set of studies

“The challenge for social psychologists is to articulate models of racism and oppression that emphasize their systemic nature while maintaining an appreciation for individual agency.”
(Adams et al., 2008, p. 221)

This quote highlights the difficulties in reconciling institutions and individuals when engaging empirically with the study of social class reproduction at school. To move the field further in the articulation of these level of analysis, we adopted in this thesis a sociocultural perspective of educational practices to examine experimentally the structural disadvantage created by evaluators. The present thesis aimed at demonstrating that institutions can create context that shape individual behavior in a manner which reproduces inequalities.

3.1. A contribution to the literature on social class achievement gap in social psychology

The first and main contribution of our work resides in the inclusion of the perspective of agents of the system in our analysis of the social class achievement gap. By focusing on student performance, the current literature in social psychology could not directly address an essential question relevant to all democratic societies: Are educational systems ensuring the necessary conditions for teachers to provide fair and meritocratic reward allocations for the same performance? Our studies effectively demonstrate that even if students have equal performance, evaluators at times create an artificial gap which corresponds to status asymmetry.

Previous work successfully showed that the educational system is a sociocultural context which implements cultural standards and classroom practices that are disadvantageous for low-SES students' performance (Goudeau & Croizet, 2017). These studies suggest that unfair comparisons that do not reflect students' abilities are institutionalized in schools and lead

low-SES students to underperform. The underlying mechanism for these effects is that the educational system threatens these students' self-esteem and feeling of belonging. While we agree that by institutionalizing threatening conditions, the educational system is erecting structural disadvantages for low-SES students, we think it is also vital to consider the importance of teachers' direct implication in the process. The restriction of previous analyses to students' performance has precluded researchers from adopting a comprehensive view of the exact causes of institutions' contribution to the creation of a gap in the absence of threat. Especially as our studies effectively demonstrate that even if students have equal performance, evaluators still generate differences between them.

Furthermore, this literature has led to the creation of interventions which work at dissipating students' negative feelings and motivations to eliminate the gap (Stephens, Hamedani, & Destin, 2014). We contend that our work shows that these attempts are not sufficient to ensure that school fulfills its meritocratic objective of providing equal opportunities. Moreover, they can inadvertently convey the message that the responsibility remains with the individuals who are not able to deal psychologically with the challenges of educational systems. To avoid further propagating a deficitary approach to social class (i.e. that lower-social class students lack the necessary cultural or psychological resources, Goudeau et al., 2017) -or perceptions that individuals need to change in order to adapt to an unfair system- we suggest more research should propose a focus on the structural causes that remain outside of students' influence to also demonstrate an inequality of process. By highlighting how differences are manufactured by other actors (i.e. agents), we provide a novel perspective in the problematization of this research question, one that leads to a better understanding of how to achieve the goal of reducing inequality at school.

In view of our results, in order to tackle social inequalities at school, institutions need to consider, not only how their cultural environment affect students' performance, but also how their institutional goals align with the practices they use to allow teachers to enact their primary role of helping students improve. With the present work, we join other researchers' call to move beyond an individualistic study of social class inequalities which looks at low-SES individuals' inability to reach current standards towards an investigation of the structures that constrains their actual opportunities (Croizet, et al., 2017; Kraus & Park, 2017).

3.2. A contribution to the literature on social reproduction and the sociocultural approach

Classic theoretical work in sociology has proposed that institutions contribute to the creation of social inequalities through the work of agents of the system. Bourdieu previously contended that agents in educational institutions are embedded in cultural ideologies which lead them to reproduce inequalities (Bourdieu & Passeron, 1977). Institutions establish practices that are presented as neutral and meritocratic but that in fact communicate values of the institutions and standards of “gifted students” that encourage agents to express symbolic violence and uphold the existing hierarchy. Importantly, the practices are not neutral with regards to agents themselves: Educational practices inform agents of the expectations of their work and their role in defense of the institution. By repeatedly engaging with those culturally-embedded practices, agents are socialized to take the hierarchizing of students for granted and to justify these tools (Bourdieu & Passeron, 1977). This view is consistent with the sociocultural approach of oppression which theorizes an interdependence and co-construction between social systems, institutions, practices and individuals. Practices are seen as symbolic resources which provide meaning to existing realities. In this perspective, using practices can conjure meaning from their wider socio-cultural context present in institutions for individuals in specific situations (Adams et al., 2005).

The present thesis contributes to the above literature in two ways. First, it presents an experimental validation of the impact of institutional factors on teachers’ behavior. Indeed, while Bourdieu’s theoretical claims has reaped considerable influence on sociological and psychological research, prior evidence is primarily derived from qualitative and correlational studies. By manipulating the institutional function of assessment practices, we identify a causal underlying structural mechanism which drives the behavior of teachers when assessing students. Our data attest for the fact that teachers’ assessments do not exist in a social vacuum but are related to wider institutional contexts. Similarly, the sociocultural approach promotes an integration of structural, cultural and psychological factors, but the experimental work has been mostly devoted to testing the impact of standards of cultural model of selves in institutions (Stephens et al., 2012). The intersection between institutions, practices and individuals has not been experimentally tested. We therefore provide, to the best of our knowledge, the first experimental investigation of how these converge to structurally disadvantage low-SES students.

Second, building on this literature and drawing from the status-incongruity hypothesis, we identified a new mechanism which favors the reproduction of social class inequalities in

school. Our research shows that agents could be threaten by a disruption of the existing hierarchy prompting them to undermine the achievement of high-achieving low-SES students. Far from being protected, low-SES students climbing the academic ladder appear to elicit hierarchy-restorative reactions from agents. These results also widen the scope of the backlash literature which hitherto has been confined to gender and racial inequalities in organizations (Phelan & Rudman, 2010). Our data indicates that it can be applied to other low-status groups in different institutional contexts.

3.3. A contribution to the literature on educational practices and social inequalities

This thesis was also informed by the vast literature in educational science, sociology and psychology that reports the role of either educational practices and/or of teachers in the restriction of academic opportunities for low-SES students (Chiu & Khoo, 2005; Glock et al., 2013, Podell & Soodak, 1993). Tracking and normative assessment are widely criticized educational tools. Yet they remain ubiquitous in most educational systems. Tracking, for instance as an educational practice has consistently been linked to social inequalities for almost four decades. It has even been argued that it is maintained because it serves this specific purpose (Bowles & Gintis, 1976; Oakes, 1985; Lucas, 2001). Similar arguments have been mobilized for normative assessment, whose advantages as a learning tool pale off in comparison to other assessment methods (Black & William, 1998). In other words, researchers have been adamant that these practices are not maintained for their educational benefits –which are contested- but because they permit the stratification of students (Cliffordson, 2008; Jasso & Resh, 2002). In short, tracking and normative assessment have been faulted for prioritizing tools which facilitate institutional selection rather than learning.

Our contribution is to reveal that in addition to the negative consequences these selective practices entail for students' learning process, they also might affect teachers' prioritization of institutional goals and encourage them to artificially differentiate between students. We therefore combined literatures in sociology and educational sciences on the effects of selective practices to provide a demonstration of how their underlying institutional function work at the psychological level of teachers to favor inequality. Moreover, our research establishes that the discriminatory behavior is not inherent to the use of these assessment practices. The institutional function could be the underlying mechanism for the negative consequences rather than the use of tools themselves. This result echoes previous qualitative work showing that changing the tools (e.g. replacing grades with formative comments) does not alone change the

purpose of assessment, and that ultimately teachers can use all forms of assessment for ranking purposes (McNair et al., 2003). Our findings could therefore potentially inform better targeted policies or interventions by redirecting efforts towards managing the primary causes of unwarranted student differentiation: the institutional function of education.

Furthermore, our work is consistent with prior experimental research revealing that normative assessment and tracking in education can be biased against low-status groups (such as immigrant students; Sprietsma, 2013). Although some previous work has shown that student's social class can influence teachers' academic expectations (Darley & Gross, 1983), we demonstrate that students' SES can also predict differentiated academic outcomes. Until now however, research on discriminatory behavior has been framed as resulting from individual bias. Our research suggest that this could be a narrow interpretation of how bias operates in specific institutional contexts. By neglecting the broader sociocultural context, researchers could be left with the impressions that institutional issues are better dealt with at the individual level. Instead we propose that biased assessment can be seen as the product of the way educational institutions are structured and operate. Our data in the first line of research supports this perspective, as teachers' discriminatory behavior only occurred in specific circumstances. Emphasizing the educational institutional function (vs. the selection function) eliminated the gap. If, indeed, differences in assessment are related to teachers' individual bias or stereotypes, then it appears that educational systems can provide contexts which permits or attenuate their expression in teachers' assessment or tracking decisions.

Our second set of studies (Studies 3.1 & 3.2) also show that it is unlikely that teachers' lower expectations or stereotypes of low-SES pupils entirely drive the discriminatory behavior. If they did, we would have expected that independently of other manipulations (such as the assessment method in Studies 1.1 & 1.2, the institutional function in Studies 1.3 and the academic track in Study 3.2), all low-SES student conditions would lead to lower assessment. But in fact (for instance in Study 3.2) results indicated that only low-SES students in a high academic track receive a lower grade. In sum, by pursuing an institutional approach to highlight the structural barriers faced by students of low socio-economic status, our work has shown that the discriminatory behavior of teachers towards students of low socio-economic status was also part of an institutional logic.

4. Limitations of the present set of studies and future studies

4.1. External validity

Conducting experiments present the advantage of approaching the demonstration of causal relationships. On the other hand, the specific conditions created for the need of the experiments reduce our ability to generalize to real-world settings without some reservations.

In our studies, we attempted to re-create an environment akin to experience of teachers. However, despite the careful descriptions we provided for participants in our studies, we cannot claim that these experimental conditions are directly comparable to spending years in educational institutions with rather selective or educational policies or several months interacting with students. Our experiments were crafted to resemble actual tracking scenario, but in Switzerland, tracking decisions are not always entirely dependent on a teacher's sole opinion and procedures vary substantially across cantons. We nevertheless concluded that our results remain relevant for the following reasons. First, the material for the scenario were created so as to remain as close as possible to actual settings for instance by 1) providing student information that is accessible to teachers in Switzerland (and adding a general description of the student's classroom behavior to avoid a possible confound with social class expectations), 2) by reminding participants of what are the standard procedures and expectations in the canton of Vaud for tracking, and finally 3) by using actual excerpts from a Swiss teachers' conference to manipulate the selective or educational function of institutions. Second, our results may not reflect final institutional tracking decisions, but we believe they are indicative of teachers' individual decisions, which carry substantial weight in the real-life process.

The second limitation pertains to the population used for our samples. Our access to teachers or pre-service teachers' population was limited, given the restricted access to teachers in Switzerland. We therefore varied the samples with students playing the role of teachers, pre-service and in-service teachers. We believe that the socialization of the students in the educational institution renders them clear-sighted of the institutional functions, norms and practices (see Darnon et al., 2009) and we expected them to enact the practices as teachers would. Replicating these findings with teachers would certainly provide greater ecological validity, but we would expect similar results. Our theoretical approach relies on the assumption that it is the institutional norms and functions which shape the agents' behaviors. While students are usually on the receiving end of these practices, they are nonetheless socialized in that same sociocultural context, and as such, are well placed to reproduce the observed effects that have been experimentally induced. Indeed, previous research using role-playing paradigms have also evidenced that participants adjust their attitudes to the role they were given (Covington &

Omelich, 1979; Harari & Covington, 1981; Houston & Holmes, 1975). Previous studies showed similar results with students acting as teachers and actual teachers (Simon, Ditrichs, & Grier, 1995; Rattan, Good, & Dweck, 2012). Furthermore, in our own studies, the same tracking paradigm was conducted on a sample of students and in-service teachers which yielded similar results.

4.2. Function of selection: underlying mechanisms

The objective of the first two lines of research is to integrate institutions and practices to predict teacher's behavior. We therefore focused on uncovering a structural-level mechanism (i.e. the function of selection vs. education) to explain the discriminatory behavior. Although this approach is in line with the sociocultural perspective that has influenced our hypothesis, further investigation could examine the specific cognitions and motivations involved when teachers are aiming to select vs. to educate students. At this point, we cannot conclude on how selection orients individuals' thinking process. While we do consider that for practical considerations, concentrating on teachers' behavior rather than cognition is likely to be more informative for targeting solutions for discrimination at school; examining individual-level variables at play would be theoretically instructive for understanding the cognitive and motivational processes which inform the behavior.

Literature studying discrimination in educational settings have often proposed that teachers' biased behaviors are related to stereotypes (Glock & Krolak-Schwerdt, 2014). Given that teachers' (behavior or performance) expectations have been shown to vary as a function of students' social class (Auwarter & Aruguete, 2008; Dunkake & Schuchart, 2015; Mizala & Martinez, 2015), it is reasonable to hypothesize that social class stereotypes underlie lower expectations of these students. Indeed, previous research on social class stereotype threat at university is also based on the assumption that low-SES students are seen as less smart and competent (Croizet & Claire, 1998). This in turn could (un)intentionally affect teachers' behavior. Our research design does not permit us to conclude whether stereotypes are the mediating factor in the case of our studies. However, the postulate that discrimination in educational settings are driven by teachers' stereotypes is not in itself incompatible with the fact that structural variables, such as the use of selection practices, shape individual behavior. If selection practices conjure, as we surmise, a hierarchizing mindset; then this process may indeed lead to greater focus (or motivation to look for) information signaling existing hierarchies and activate related stereotypes. It would therefore be an interesting venue for future

research to test whether the use of selection practices facilitate the situational accessibility of social class stereotypes.

Another related hypothesis, derived from the SDT literature, could be that enacting institutional selection practices more generally affect individuals' tendency to create hierarchies. To quote Pratto (1999, p.195): "stereotypes can lead to discrimination, can stem from social structure, and reflect the social relationships and practices that constitute culture". As selection practices at their core rely on the hierarchizing of individuals, they might be considered as hierarchy-enhancing practices (or act as situational hierarchy-enhancing environments) which increase individuals' SDO. This hypothesis would however rely on the assumption that the practice of hierarchizing individuals would lead to a preference to hierarchize groups which, to the best of our knowledge, has not been tested before. Moreover, this hypothesis, as opposed to the previous one which postulated a temporary effect of selection, would predict that repeated exposure to selection practices would enhance individuals' SDO over time.

It is also possible that selective practices or the selection function do not directly activate stereotypes but trigger the salience of social norms which allow for their expression. Indeed, previous research has suggested that social norms exert strong influence for the expression of individual prejudice (Crandall, Eshleman, & O'Brien, 2002). Future studies could test if it is perceived as more normative to express stereotypes in selective rather than in educational contexts. Or conversely, following the theoretical predictions of the justification-suppression model of prejudice, we could hypothesize that using educational practices conveys the perception of an institutional normative climate endorsing egalitarian social norms, which would lead to the suppression of the expression of prejudice (Crandall & Eshleman, 2003). In this case, in both conditions (selection vs. education) stereotypes would be equally accessible, but the manipulation of the institutional function or the function of the practices to educate would reduce individuals' tendency to rely on them to guide their behavior.

In another domain, prior research examining hiring decision found that perceived objectivity induces a mindset that validates individual beliefs and facilitates expressions of prejudice. An experiment priming a sense of objectivity found that it leads to more gender-biased decisions (Uhlmann & Cohen, 2007). Similarly, research on moral credentials proposed that thinking of oneself as unbiased could also increase the expression of prejudice (Monin & Miller, 2001). Another experiment, set this time in an organization, showed that emphasizing meritocracy also led to more gender-biased pay rewards (Castilla & Bernard, 2010). Based on their results, the authors speculated that when individuals hold the impression that they are

conducting fair and objective evaluations -which could in itself act as a moral credential - they could be more inclined to trust their subjective impressions and biases, causing them to make more biased decisions. As we think that meritocratic principles underlie selection practices, we suspect that emphasizing the selection function could activate teacher's subjective impressions of objectivity and favor unequal decisions.

Another concept closely related to selection is competition which has been linked to rigid thinking (Carnevale & Probst, 1998), lower perception of similarity with a target (Toma, Yzerbyt, & Corneille, 2010) and higher level of prejudice (Sassenberg, Moskowitz, Jacoby, & Hansen, 2007). The function of selection may also trigger similar processes that could contribute to the discriminatory behavior in evaluation by affecting perception of competition between groups. An interesting research venue to explore is the perception of intergroup dynamics in selective vs. non-selective mindset. Perception of scarcity and zero-sum thinking beliefs in previous research has been linked to stereotyped perceptual differences in black and whites faces and differential resources allocation (Krosch, Tyler, & Amodio, 2017). It might be the case that in a selective mindset, individuals perceive more competition and less resources available which could elicit motivations to perceive more differences among individuals or to allocate more resources to members of favored groups.

Finally, a possible extension of our research could focus on teachers' identity-processes inside the institution depending on its function. We believe that teacher's professional identity and identification may shift with institutional goals, as proposed by the literature in institutional logic (Ocasio, 1997). This suggestion would be consistent with Social Identity Theory and Self-Categorization theory, which propose that making identities salient will structure the behavior of the individual to reflect the norms and beliefs of the group. Furthermore, Haslam (2017) suggests that learning in educational institutions is inherently a mutual process of influence which relies on a commonly shared identity membership between students and teachers. Cultivating a shared identity between students and teachers has been shown to increase learning outcomes and student engagement but is also linked to teachers' well-being (Christ, van Dick, Wagner, & Stellmacher, 2003). It may be that an institutional focus on selection vs. education could lead teachers to rather identify with either the institution or with students. Indeed, engaging in selection practices could cause teachers to identify with the institution and its hierarchizing goals and therefore see the students as an outgroup. Instead, the education function- which is focused on increasing students' learning outcomes - might encourage teachers to see themselves as closer to students and be encouraged to individuate them instead of perceiving them in a stereotyped manner.

4.3. Measuring systemic threat

The last limitation relates to the indirect measure of threat of Study 31. & 3.2. The results were consistent with our predictions: manipulation of social disorder (in the form of high-achieving low-SES students) prompted participants to either misremember the low-SES students' good grades as being mediocre or deliver a lower grade for the same performance. We therefore consider the results as supportive of the hypothesis that disruption of the social class hierarchy is threatening. Nevertheless, it is important to acknowledge that by indirectly measuring threat, we can only presume that threat is the underlying cause of the reaction.

Another possibility could have been to explicitly ask participants to report their feelings of threat as a manipulation check. We believe however that this operationalization of threat comprises some limitations which would render the measure unreliable. First, using explicit measures of threat relies on the assumption that participants are engaging altogether consciously with the information provided and carefully calibrating their reaction. Yet, behavior can be affected by threat without participants being aware of it (Blascovich, Mendes, Hunter, & Lickel, 2000). For these reasons, some researchers advise against using manipulation checks altogether (Fayant, Sigall, Lemonnier, Retsin, & Alexopoulos, 2017). Second, given the subject matter (i.e. hierarchies in school), we believe that, especially for pre-service teachers, responses would be subject to a strong social desirability bias. This could possibly lead to a floor effect which would render the measure unusable. Third, we think it possible that participants experiencing the threat the most be particularly motivated to deny it as a defense mechanism; either to dissipate the negative feelings engendered by threat or to rationalize their negative reactions/behavior in the study (Branscombe et al., 1999).

Finally, although our studies are the first to hypothesize that disruption of the social class hierarchy is threatening, other studies have relied on similar assumptions with regards to race relations to operationalize threat. For instance, Wilkins and Kaiser (2014) hypothesized that making racial progress salient elicits a threat for white individuals who believe the hierarchy is legitimate. Their results, which the researchers interpret as emerging from threat, show that participants are more likely to claim their group is victim of anti-white bias. Another study manipulated the perception of a majority-minority in racial relations shift in the U.S. to induce threat and observe that white participants express more conservative views (Craig & Richeson, 2014).

One aim of future research in this area should be to use other dependent variables consistent with manifestations of threat to decisively confirm its presence. For instance, perceived system-threat and societal instability have been associated with higher endorsement

of conservative policies and support for the status quo (Jost et al., 2003; Bonanno & Jost, 2006). One interesting venue could be to test the effects of social-disorder exposure on measures of support for the social system to see if it leads people to defend the system. An alternative could be to use physiological measures to infer participants' psychological state after exposure to social disorder. Cortisol levels have been associated in prior research with negative psychological states including social evaluative stress (Dickerson & Kemeny, 2004). Measuring them could test whether participants are experiencing more stress in the social disorder condition comparatively to social order.

Finally, to additionally test if disruption of the hierarchy is threatening, a future study could attempt to mitigate the threat before measuring the dependent variable. Self-affirmation techniques have previously been used to this effect (Sherman & Cohen, 2006). To buffer the effects of threat, half of participants describe a previous behavior that exemplified their most important value. Affirming one's self-integrity should alleviate feelings of threat and reduce the incentives to act on it afterwards comparatively to the control condition.

5. Conclusion

“Useful social psychological policy contributions, then, have typically been structurally grounded. Yet social psychology often broaches its findings and theory in a societal and institutional vacuum. Social policy, however, is embedded in societal and institutional contexts. Hence, the discipline’s socially ungrounded models appear irrelevant to policy makers – even though untested social psychological assumptions permeate their decisions.”

(Pettigrew, 2001, p.524)

Since the development of mass education in Western societies, the responsibility of insuring social mobility has been assigned almost exclusively to educational institutions. The primary objective of this work was to examine the merits of schools' claims of providing the necessary conditions for the implementation of fair reward allocations. Our studies suggest that this is not the case at the present time. Even when low-SES students overcome initial structural barriers to perform as well or better than other students, agents in educational institutions may not extend them the same academic recognition and/or opportunities. Importantly, our demonstration of the institutional function of selection's involvement in this process provides experimental evidence to the direct role of institutions in the reproduction of social class inequalities. Our findings indicate that biased evaluations do not represent a mere fallacy in an otherwise meritocratic system. Rather they suggest that the system in its current state promotes

unequal access of opportunity. Consequently, attempts focused at reducing the achievement gap would presumably be insufficient to effectively combat social class inequalities at school.

Indeed, the present results speak for the importance of considering the structural factors underlying social class inequalities such as the roles assigned to schools and by extent to teachers. Institutions may want to reassess whether preparing students for differentiated social positions is worth jeopardizing good learning conditions and a fair evaluation process. We would also encourage researchers and practitioners to prepare teachers for this specific predicament (i.e. conflicting objectives) in addition to preparing students for the disadvantages they are likely to face. Teachers do not practice independently of institutional forces; their work reflect the values and expectations of institutions. As such, teachers should be provided with tools that are adequately aligned with the objectives of the institution and made clear of the institution's priorities.

In sum, teachers evolve in a sociocultural context which has historically inherited structures and practices which were meant to create an elite. If institutions wish to “merit” their badge as engines of mobility, the first step is to prioritize this objective by implementing practices that actually lead to its fulfillment. The recommendations that comes with the present thesis may arrive at an opportune time as mounting social inequalities have been linked to more status competition (Delhey & Dragolov, 2013). Educational institution could find it hard to resist the appeal of implementing stricter selection practices to –at least in appearance- combat an increased climate of competition. In light of our results, we would urge them to carefully consider the implications to avoid propagating institutional norms and practices that encourages the perpetuation of social class inequalities.

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APPENDIXES

MATERIAL

First line of research

Experiment 1.1

8 experimental Conditions:

- Target' SES: Low vs. High
- Target' Gender: Male vs. Female
- Type of Assessment: Normative vs. Formative

Common sections in all conditions in Experiment 1.1:

Material (For Low-SES Male, Normative Assessment)

- o Description of the scenariop.231
- o Student dictation testp.235
- o Evaluation of the target and the assessment method.....p.236
- o Manipulation checks.....p.238
- o Socio-demographic questions.....p.239

Manipulation (i.e. varying sections depending on experimental conditions)

- Description of assessment method, Target description: Student administrative file and description of student's extra-curricular activities
 - o Formative Assessment.....p.241
 - o High-SES Male.....p.242
 - o Low-SES Female.....p.244
 - o High-SES Female.....p.246

Experiment 1.2

8 experimental Conditions:

- Target' SES: Low vs. High = Experiment 1.1
- Target's Gender: Male vs. Female = Experiment 1.1
- Type of Assessment: Normative vs. Formative

Common Sections in all conditions = Experiment 1.1; except Student dictation test

Manipulation (i.e. varying sections depending on experimental conditions)

- Student dictation test for Normative Assessment.....p.248
- Student dictation test for Formative Assessment.....p.249

Experiment 1.3

8 experimental Conditions:

- Target' SES: Low vs. High (Male in both conditions) = Experiment 1.1
- Type of Assessment: Normative vs. Formative = Experiment 1.2
- Assessment Function: Selection vs. Educational

Common sections in all conditions = Experiment 1.1; except: Description of Assessment method, Manipulation checks

Manipulation (i.e. varying sections depending on experimental conditions)

- Selection Function.....p.250
- Educational Function.....p.252
- Manipulation check.....p. 254

Experiment 1.4

8 experimental Conditions:

- Target' SES: Low vs. High (Male in both conditions) = Experiment 1.1
- Type of Assessment: Normative vs. Formative = Experiment 1.1
- Assessment Function: Selection vs. Educational

Common sections in all conditions = Experiment 1.1; except: Description of the scenario and Assessment method, Target Description, Student Test, Questionnaire about implicit theories of intelligence, Manipulation checks, Socio-demographic questions

Material (for High-SES, Selection Function)

- Description of the scenario, assessment method and Selection function.....p.255
- Target description.....p.257
- Student t..est.....p.258
- Questionnaire about implicit theories of intelligence.....p.259
- Manipulation checks.....p.260

- Socio-demographic questions.....p.261

Manipulation (i.e. varying sections depending on experimental conditions)

- Educational Function.....p.262
- Low-SES.....p.263

Second line of research

Experiment 2.1

4 experimental Conditions:

- Target' SES: Low vs. High = Experiment 1.1
- Target' Gender: Male vs. Female = Experiment 1.1

Common sections in all conditions in Experiment 2.1:

Material (for Low-SES Male)

- Description of the tracking system in Switzerland: grade requirements for each track and academic consequences of tracking for studentsp.264
- Instruction for borderline cases (i.e. students below requirements)p.265
- Student academic file: grades and teacher's comment about student's behavior.....p.267
- Measures of suitability of tracks.....p.268
- Questionnaire about perceived importance of success factors in school.....p.269
- Manipulation checks.....p.270
- Socio-demographic questions.....p.271

Manipulation (i.e. varying sections depending on experimental conditions)

- Target description: Student administrative file and description of student's extra-curricular activities
 - High-SES Male.....p.272
 - Low-SES Female.....p.273
 - High-SES Female.....p.274

Experiment 2.2

2 experimental Conditions:

- Target' SES: Low vs. High Male in both conditions = Experiment 2.1

Common sections in all conditions = Experiment 2.1, except Scenario description and Target description

- Scenario description.....p.275

Manipulation (i.e. varying sections depending on experimental conditions)

- Target description: Student administrative file and description of student's extra-curricular activities
 - Low-SES Male.....p.278
 - High-SES Male.....p.279

Experiment 2.3

8 experimental Conditions:

- Target' SES: Low vs. High = Experiment 1.1
- Target' Gender: Male vs. Female = Experiment 1.1
- Institutional Function: Selection vs. Educational

Common sections in all conditions = Experiment 2.1

Manipulation (i.e. varying sections depending on experimental conditions)

- Description of the Swiss educational system (presented together with the description of tracking system)
 - Selection Function.....p.280
 - Educational Function.....p.281

Third line of research

Experiment 3.1

2 experimental Conditions:

- Social Order vs. Social Disorder

Common sections in all conditions in Experiment 3.1:

Material (for Social Order)

- Instructionsp.282
- Target descriptionp.283
- Restitution of information.....p.290

- Socio-demographic questions.....p.292

Manipulation (i.e. varying sections depending on experimental conditions)

- Social Disorder.....p.292

Experiment 3.2

4 experimental Conditions:

- Target' SES: Low vs. High (Both male) = Experiment 1.1
- Academic Track: High vs. Low

Common sections in all conditions = Experiment 1.1

Manipulation (i.e. varying sections depending on experimental conditions)

- o High Academic Track.....p.293
- o Low Academic Track.....p.294

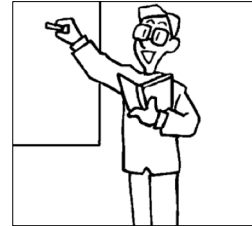
First line of research

Experiment 1.1

1. Normative Assessment, Low-SES Male (Material)

Description of the scenario and assessment method:

Dans cette étude, nous nous intéressons aux particularités de différentes méthodes d'évaluation utilisées par les enseignants dans leurs classes.



Nous vous demandons d'imaginer que **vous êtes enseignant(e)** de français dans un établissement secondaire.

Nous allons vous demander de corriger une copie selon une méthode d'évaluation particulière. Prenez bien connaissance de cette méthode pour pouvoir ensuite l'utiliser.

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des notes (pas de commentaires)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation normative ».

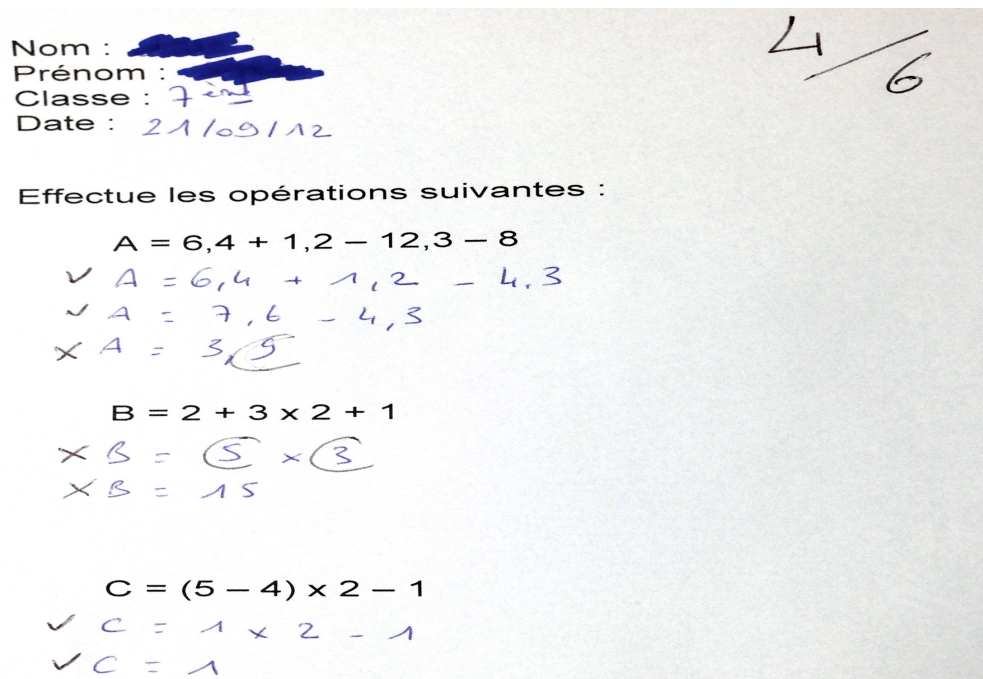


Une fois l'apprentissage terminé, vous attribuez une note à la performance des élèves en fonction des erreurs commises.

Cette méthode d'évaluation vous permet de vérifier le niveau de chaque élève et de savoir s'il/elle répond aux exigences du programme pédagogique.

Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport à une norme qui définit la réussite, et de le situer par rapport aux autres élèves.

Voici un **exemple** de copie corrigée selon cette méthode par un(e) enseignant(e) de mathématiques.



Question :

Lorsque vous corrigez une copie avec cette méthode (une seule bonne réponse) :

- Vous attribuez un chiffre sur 6 en fonction du nombre de bonnes et mauvaises réponses

Vous expliquez quelle est l'erreur de l'élève et ce qu'il faut faire pour ne pas la reproduire

- Vous mettez un commentaire général sur le niveau de la copie

Target description :

Imaginez maintenant que vous avez une classe de 8^{ème}. Vous avez fait faire une dictée à vos élèves. Nous allons vous présenter la copie d'un élève en particulier dont voici quelques informations pour vous aider à l'imaginer. Prenez bien connaissance de ces informations (des questions vous seront posées sur ces informations).

Dossier Administratif

1) ELEVE

Nom : Bétrisey Prénom : Bryan
(dénomination officielle)

Naissance (jour, mois, année) : 23 06 00 Sexe : F M

Domicile : Rue : Chemin des Estournelles 9 N° Postal 1003 Localité : Lausanne

Commune d'origine: Renens (VD) Nationalité (pays) : Suisse

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre de frère et sœur : <u>4</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Bryan Bétrisey est un jeune garçon de 13 ans. C'est un élève qui s'entend globalement bien avec ses camarades. Après les cours, Bryan aime bien rester discuter avec ses amis. Il rentre généralement chez lui à pied. Une fois à la maison, Bryan apprécie beaucoup d'écouter de la musique ou de regarder la télévision, en particulier son émission favorite, *Les anges de la télé-réalité*. Son film préféré est *Intouchables*. Le week-end, il fait du sport à la maison de quartier, où il joue avec ses amis. Cette année, pour son anniversaire, ses parents l'ont emmené lui et ses frères et sœurs à Aquaparc.

Student dictation test :

Voici la copie de l'élève. Vous devez repérer les erreurs en les soulignant. Vous devez ensuite indiquer la note (sur 6) en haut de la copie.

Bétrisey
Bryan

21 Janvier 2013
7ème

Dictée

L'été touchait à sa fin et avec lui, la saison des pluies. D'ici quelques jours, le vent balayerait les dernières averses et, en quelque semaine, le pays entier s'enfoncerait dans l'hiver. L'énorme camion ralentit, sembla hésiter, et s'engagea finalement à gauche. Désormais, tout demi tour devenait impossible, la piste était trop étroite. Mais cela, Ryham le savait.

"Désolé pour cet fois, murmura-t-il en souriant comme un gamin, mais j'ai trop envie de vous revoir!"

Tout de suite, la pente se raidit. Il chargea de vitesse et l'énorme moteur gronda un peu plus fort. Un rapide coup d'œil sur sa montre. D'ici deux ou trois heures, il arriverait au poste frontière. Ensuite ils seraient seuls, lui et son camion. Seuls pour grimper jusqu'au col des Tille Larmes, et seuls pour redescendre jusqu'au village de Baygülin. et partir de là, tout serait simple.

Evaluation of the target and the assessment method :

Toujours en imaginant que vous êtes enseignant(e) de français, veuillez maintenant répondre à ces quelques questions en entourant un chiffre qui correspond à ce que vous pensez. Il n'y a pas de bonne ou de mauvaise réponse, nous voulons connaître votre avis, sur la base de ce qu'il vous semble avoir compris de votre élève ; répondez spontanément.

Selon vous, quelle est la probabilité pour que Bryan:

Réussisse dans votre cours

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Obtienne d'excellents résultats dans votre cours

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Réussisse mieux que les autres élèves dans votre cours

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Maîtrise le contenu de votre cours

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Acquière toutes les connaissances transmises dans votre cours

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Développe de nouvelles compétences

Pas du tout probable 1 2 3 4 5 6 7 *Extrêmement probable*

Vous estimez que le niveau de la copie que vous venez de corriger est :

Médiocre 1 2 3 4 5 6 7 8 9 10 *Excellent*

Le résultat à ce type d'évaluation (i.e. évaluation basée sur des notes) peut être influencé par la relation entre l'enseignant et l'élève

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

On n'est pas toujours objectif avec ce type d'évaluation

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Ce type d'évaluation reflète ce que les élèves ont appris ou non

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Ce type d'évaluation ne permet pas de mesurer les connaissances réelles des élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Avec ce type d'évaluation, on ne peut pas bien juger des capacités intellectuelles des élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Le résultat à ce type d'évaluation est une bonne estimation des aptitudes des élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Ce type d'évaluation ne permet pas d'estimer les efforts produits par les élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Le résultat à ce type d'évaluation reflète le travail fourni par les élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Connaître le résultat d'un élève à ce type d'évaluation vous permet de prédire s'il/elle aura plus tard des difficultés scolaires

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Le résultat à ce type d'évaluation vous semble un bon indicateur de la réussite future des élèves

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

En général, un(e) élève qui réussit bien à l'école continuera à avoir de bons résultats, même s'il/elle change d'établissement ou d'enseignant.

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

En général, un(e) élève qui a des difficultés scolaires étant jeune peut difficilement devenir un(e) bon(e) élève

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

En général, les élèves qui réussissent bien à l'école et ceux qui ont des difficultés sont deux types distincts de personne : certaines personnes sont plus faites pour les études que d'autres

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

La réussite d'un(e) élève est généralement informative du type de personne qu'il/elle deviendra

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

La réussite d'un(e) élève reflète ses qualités propres

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Les élèves réussissent à l'école en fonction de dispositions naturelles.

Pas du tout d'accord 1 2 3 4 5 6 7 *Tout à fait d'accord*

Manipulation checks :

Rappelez-vous des informations que vous avez eues à propos de Bryan. Pour répondre à ces questions nous vous demandons de faire appel à votre mémoire et de ne pas retourner lire les informations.

D'après ces informations, il a :

- ni frère ni soeur
- une soeur
- Plusieurs frères et soeurs

D'après ces informations, son film préféré est :

- Intouchables
- Bienvenue chez les Ch'tis
- Astérix aux jeux olympiques

D'après ces informations, il vit dans un milieu:

1	2	3	4	5	6	7
Très désavantagé	Désavantagé	Plutôt désavantagé	Moyen	Plutôt Avantagé	Avantagé	Très avantagé

Socio-demographics questions :

Maintenant, merci de répondre à ces quelques questions à propos de vous.

Sexe : () Féminin () Masculin Année de Naissance :

Discipline étudiée : Majeure..... Mineure :
.....

En quelle année êtes-vous :

Langue Maternelle : Nationalité(s) :

Veillez indiquer le diplôme le plus élevé de votre mère:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer le diplôme le plus élevé de votre père:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer la profession exercée par chacun de vos parents (essayez d'être le/la plus précis(e) possible):

Mère :

Père :

Bénéficiez-vous d'une bourse pour vos études?

- Oui, car mes parents ont un revenu assez bas
- Oui, pour une autre raison
- Non

Veillez indiquer votre moyenne générale à la maturité (baccalauréat ou équivalent) :

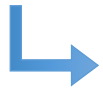
.....

Notez ici vos remarques à propos de l'étude :

2. Formative Assessment (Manipulation)

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des commentaires (pas de note)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation formative ».

21 Janvier 2014
gène générale



Au cours des apprentissages, vous faites des commentaires sur les performances des élèves pour les aider à tirer les leçons de leurs erreurs.

Cette méthode d'évaluation vous permet d'indiquer à chaque élève comment progresser et d'adapter les situations d'apprentissage de façon appropriée.

Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport aux objectifs d'apprentissages et de proposer des stratégies pour les atteindre.

Voici un **exemple** de copie corrigée selon cette méthode par un(e) enseignant(e) de mathématiques

Nom : ██████████
Prénom : ██████████
Classe : 7^{ème}
Date : 21/01/14

Effectue les opérations suivantes :

$$A = 6,4 + 1,2 - 12,3 - 8$$

$$A = 6,4 + 1,2 - 4,3$$

$$A = 7,6 - 4,3$$

$$A = 3,3$$

$$B = 2 + 3 \times 2 + 1$$

$$B = 5 \times 3$$

$$B = 15$$

$$C = (5 - 4) \times 2 - 1$$

$$C = 1 \times 2 - 1$$

$$C = 1$$

Tu as additionné les décimales. Il faut les soustraire aussi. Pour t'aider tu peux refaire des exercices de soustractions de nombres décimaux.

Il faut faire la multiplication avant l'addition. Tu devrais relire la leçon sur l'ordre des opérations.

3. High-SES Male (Manipulation)

Imaginez maintenant que vous avez une classe de 8^{ème}. Vous avez fait faire une dictée à vos élèves. Nous allons vous présenter la copie d'un élève en particulier dont voici quelques informations pour vous aider à l'imaginer. Prenez bien connaissance de ces informations (des questions vous seront posées sur ces informations).

Dossier Administratif

1) ELEVE

Nom : Demierre Prénom : Louis
(dénomination officielle)
Naissance (jour, mois, année) : 23 06 00 Sexe : F M
Domicile : Rue : Chemin des Estournelles 9 N° Postal 1003 Localité : Lausanne
Commune d'origine: Pully (VD) Nationalité (pays) : Suisse

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable marketing</u>
Nombre de frère et sœur : <u>1</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Louis Demierre est un jeune garçon de 13 ans. C'est un élève qui s'entend globalement bien avec ses camarades. Après les cours Louis rentre généralement à pied. Une fois chez lui, il aime travailler ses gammes au piano. Le soir, Louis aime bien écouter de la musique ou passer du temps à lire. Son livre de chevet favori est *Le chien des Baskerville*. Son film préféré est *Intouchables*. Le week-end, il est inscrit au tennis-club de son quartier dans lequel il joue en simple. Cette année, pour son anniversaire, ses parents l'ont emmené lui et sa petite sœur à Londres.

4. Low-SES Female (Manipulation)

Imaginez maintenant que vous avez une classe de 8^{ème}. Vous avez fait faire une dictée à vos élèves. Nous allons vous présenter la copie d'un élève en particulier dont voici quelques informations pour vous aider à l'imaginer. Prenez bien connaissance de ces informations (des questions vous seront posées sur ces informations).

Dossier Administratif

1) ELEVE

Nom : Bétrisey Prénom : Cindy
(dénomination officielle)

Naissance (jour, mois, année) : 23 06 00 Sexe : F M

Domicile : Rue : Chemin des Estournelles 9 N° Postal 1003 Localité : Lausanne

Commune d'origine: Renens (VD) Nationalité (pays) : Suisse

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre de frère et sœur : <u>4</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Cindy Bétrisey est une jeune fille de 13 ans. C'est une élève qui s'entend globalement bien avec ses camarades. Après les cours, Cindy aime rester discuter avec ses amies. Elle rentre généralement chez elle à pied. Une fois à la maison, Cindy apprécie beaucoup d'écouter de la musique ou de regarder la télévision, en particulier son émission favorite, *Les anges de la télé-réalité*. Son film préféré est *Intouchables*. Le week-end, elle fait du sport à la maison de quartier, où elle joue avec ses amies. Cette année, pour son anniversaire, ses parents l'ont emmenée elle et ses frères et sœurs à Aquaparc.

5. High-SES Female (Manipulation)

Imaginez maintenant que vous avez une classe de 8^{ème}. Vous avez fait faire une dictée à vos élèves. Nous allons vous présenter la copie d'un élève en particulier dont voici quelques informations pour vous aider à l'imaginer. Prenez bien connaissance de ces informations (des questions vous seront posées sur ces informations).

Dossier Administratif

1) ELEVE

Nom : Demierre Prénom : Charlotte
(dénomination officielle)
Naissance (jour, mois, année) : 23 06 00 Sexe : F M
Domicile : Rue : Chemin des Estournelles 9 N° Postal 1003 Localité : Lausanne
Commune d'origine: Pully (VD) Nationalité (pays) : Suisse

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable marketing</u>
Nombre de frère et sœur : <u>1</u>	

Puisque vous ne connaissez pas personnellement cette élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Charlotte Demierre est une jeune fille de 13 ans. C'est une élève qui s'entend globalement bien avec ses camarades. Après les cours Charlotte rentre généralement à pied. Une fois chez elle, elle aime travailler ses gammes au piano. Le soir, Charlotte aime bien écouter de la musique ou passer du temps à lire. Son livre de chevet favori est *Le chien des Baskerville*. Son film préféré est *Intouchables*. Le week-end, elle est inscrite au tennis-club de son quartier dans lequel elle joue en simple. Cette année, pour son anniversaire, ses parents l'ont emmenée elle et sa petite sœur à Londres.

Experiment 1.2

I. Normative Assessment (Manipulation)

Student dictation test:

Voici la copie de l'élève. Plus tard nous vous demanderons de créer un barème précis permettant de mettre une note à la copie (sur 6) et de la comparer facilement aux autres copies. Toutefois, dans un premier temps vous devez **seulement souligner** les erreurs.

Bretisay
Cindy

21 janvier 2013
8^{ème}

Dictée

L'été touchait à sa fin et avec lui, la saison des pluies. D'ici quelques jours, le vent balayerait les dernières averses et, en quelque semaine, le pays entier s'enfoncerait dans l'hiver. L'énorme camion ralenti, sembla hésiter, et s'engagea finalement à gauche. Désormais, tout demi tour devenait impossible. La piste était trop étroite. Mais cela Ryham le savait.

"Désolé pour cet fois, murmura-t'il en souriant comme un gamin, mais j'ai trop envie de vous revoir!"

Tout de suite, la pente se raidit. Il chargea de vitesse et l'énorme moteur gronda un peu plus fort. Un rapide coup d'œil sur sa montre. D'ici deux ou trois heures, il arriverait au poste frontière. Ensuite ils seraient seuls, lui et son camion. Seuls pour grimper jusqu'au col des Tilles Larmes, et seuls pour redescendre jusqu'au village de Baygülin. A partir de là, tout serait simple.

Experiment 1.2

2. Formative Assessment (Manipulation)

Student dictation test:

Voici la copie de l'élève. Plus tard, nous vous demanderons de mettre un commentaire à côté de chaque erreur pour expliquer à l'élève en quoi consiste son erreur et lui indiquer ce qu'il faut revoir pour progresser. Toutefois, dans un premier temps vous devez **seulement souligner** les erreurs.

Demiene
Charlotte

21 Janvier 2013
8^{ème}

Dictée

L'été touchait à sa fin et avec lui, la saison des pluies. D'ici quelques jours, le vent balayerait les dernières averses et, en quelque semaine, le pays entier s'enfoncerait dans l'hiver. L'énorme camion ralenti, sembla hésiter, et s'engagea finalement à gauche. Désormais, tout demi tour devenait impossible. La piste était trop étroite. Mais cela Ryham le savait.

"Désolé pour cet fois, murmura t'il en souriant comme un gamin, mais j'ai trop envie de vous revoir!"

Tout de suite, la pente se raidit. Il chargea de vitesse et l'énorme moteur gronda un peu plus fort. Un rapide coup d'oeil sur sa montre. D'ici deux ou trois heures, il arriverait au poste frontière. Ensuite ils seraient seuls, lui et son camion. Seuls pour grimper jusqu'au col des Mille Larmes, et seuls pour redescendre jusqu'au village de Baygülin. A partir de là, tout serait simple.

Experiment 1.3

I. Selection Function, Normative Assessment (Manipulation)

Description of the assessment method:

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des notes (pas de commentaires)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation normative ».



Une fois l'apprentissage terminé, vous attribuez une note à la performance des élèves en fonction des erreurs commises.

Cette méthode d'évaluation vous permet de vérifier le niveau de chaque élève et de savoir s'il/elle répond aux exigences du programme pédagogique.

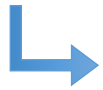
Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport à une norme qui définit la réussite, et de le situer par rapport aux autres élèves.

Experiment 1.3

3. Selection Function, Formative Assessment (Manipulation)

Description of the assessment method:

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des commentaires (pas de note)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation formative ».



Au cours des apprentissages, vous faites des commentaires sur les performances des élèves pour les aider à tirer les leçons de leurs erreurs.

Cette méthode d'évaluation vous permet de vérifier le niveau de chaque élève et de savoir s'il/elle répond aux exigences du programme pédagogique.

Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport aux objectifs d'apprentissages et de proposer des stratégies pour les atteindre.

Experiment 1.3

2. Educational Function, Normative Assessment (Manipulation)

Description of the assessment method:

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des notes (pas de commentaires)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation normative ».



Une fois l'apprentissage terminé, vous attribuez une note à la performance des élèves en fonction des erreurs commises.

Cette méthode d'évaluation vous permet d'indiquer à chaque élève comment progresser et d'adapter les situations d'apprentissage de façon appropriée.

Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport à une norme qui définit la réussite, et de le situer par rapport aux autres élèves.

Experiment 1.3

4. Educational function, Formative Assessment (Manipulation)

Description of the assessment method:

Dans votre classe vous utilisez une **méthode d'évaluation basée uniquement sur des commentaires (pas de note)**. C'est ce qu'on appelle en jargon pédagogique une « évaluation formative ».



Au cours des apprentissages, vous faites des commentaires sur les performances des élèves pour les aider à tirer les leçons de leurs erreurs.

Cette méthode d'évaluation vous permet d'indiquer à chaque élève comment progresser et d'adapter les situations d'apprentissage de façon appropriée.

Vous pensez que cette méthode permet de vérifier ce que les élèves ont appris. Elle vous permet de situer chaque élève par rapport aux objectifs d'apprentissages et de proposer des stratégies pour les atteindre.

Experiment I.3

Manipulation checks:

Rappelez-vous des informations qui vous ont été présentées. Pour répondre à ces questions nous vous demandons de faire appel à votre mémoire et de **ne pas retourner lire** les informations.

A quoi servaient les erreurs que vous repérez dans la dictée :

- Décider si l'élève devait être promu ou non dans la classe supérieure
- Proposer des stratégies pour que l'élève progresse dans ses apprentissages

Louis a :

- ni frère ni soeur
- une soeur
- Plusieurs frères et soeurs

Son film préféré est :

- Intouchables
- Bienvenue chez les Ch'tis
- Astérix aux jeux olympiques

Il vit dans un milieu:

1	2	3	4	5	6	7
Très désavantagé	Désavantagé	Plutôt désavantagé	Moyen	Plutôt Avantagé	Avantagé	Très avantagé

Experiment I.4

I. High-SES, Selection Function (Material)

Description of the scenario and assessment method:



Dans cette étude, nous nous intéressons aux particularités de différentes méthodes d'évaluation utilisées par les enseignants dans leurs classes.



Nous vous demandons d'imaginer que **vous êtes enseignant(e)** d'histoire dans un collège.

Nous allons vous demander de corriger une copie selon une méthode d'évaluation particulière. Prenez bien connaissance de cette méthode pour pouvoir ensuite l'utiliser.

Dans votre classe, vous avez demandé aux élèves d'écrire une synthèse. Les élèves avaient des documents historiques et des textes à disposition. A partir de ces documents, ils devaient écrire un texte pour répondre au sujet suivant :

Peut-on dire que l'Allemagne nazie était un régime totalitaire et raciste ?

Pour corriger cette synthèse, vous avez décidé d'utiliser une **méthode d'évaluation particulière**.

Vous surlignez des parties du texte en deux couleurs

- Vous surlignez en **jaune** ce qui vous semble **bien** écrit. Cela peut concerner ce qui est bien formulé, clair, important dans la logique du texte.
- Vous surlignez en **orange** ce qui doit être **réécrit**. Cela peut concerner ce qui est mal formulé, pas clair, mal placé dans la logique du texte mais aussi les fautes d'orthographe, de grammaire, de conjugaison ou de syntaxe.

Voici un exemple de phrase corrigée selon cette méthode sur un sujet différent :

Parce qu'il y a la mort de Robespierre,
la république est affaiblie. Napoléon
Bonaparte prend le pouvoir par un coup
d'état en novembre 1799 et cumule peu
à peu tous les pouvoirs.

La synthèse que vous allez corriger est un exercice **d'évaluation** qui compte pour la moyenne du 3^{ème} trimestre. L'évaluation que vous ferez vous donnera des informations qui vous aideront à décider si l'élève doit **passer en 3^{ème} ou redoubler** en identifiant **ses lacunes et ses forces** dans la rédaction des synthèses.

Target description:

Afin de vous aider à rentrer dans le rôle d'enseignant, lisez les informations ci-dessous. Elles présentent l'élève qui a fait l'exercice que vous allez corriger. Imaginez que vous êtes l'enseignant(e) de cet élève.

Dossier Administratif	
1) ELEVE	
Nom : <u>Demierre</u> <small>(dénomination officielle)</small>	Prénom : <u>Charles</u>
Naissance (jour, mois, année) : <u>23 06 00</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : <u>9 Chemin des Estournelles</u>	Code Postal <u>86000</u> Commune <u>Poitiers</u>
	Nationalité (pays) : <u>France</u>
2) PARENTS / RESPONSABLES LEGAUX	
<u>Père</u>	<u>Mère</u>
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>9 Chemin des Estournelles</u> <u>86000 Poitiers</u>	Adresse : <u>9 Chemin des Estournelles</u> <u>86000 Poitiers</u>
Téléphone : <u>05 49 36 63 49</u>	Téléphone : <u>05 49 36 63 49</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable marketing</u>
Nombre de frères et sœurs : <u>1</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Charles Demierre est un jeune garçon de 13 ans. C'est un élève qui s'entend globalement bien avec ses camarades. Après les cours Charles rentre généralement à pied. Une fois à la maison, il aime travailler ses gammes au piano. Le soir, Charles aime bien écouter de la musique ou passer du temps à lire. Son film préféré est *Avengers 2*. Le week-end, il est inscrit au tennis-club de son quartier dans lequel il joue en simple. Cette année, pour son anniversaire, ses parents l'ont emmené lui et sa petite sœur à Disney Land.

Student test:

Voici la copie que vous devez corriger. Cette synthèse compte pour la moyenne et vous aidera à décider si l'élève peut **passer en 3^{ème}** ou doit **redoubler**.

Surlignez en **jaune** ce qui vous semble **bien** écrit. Cela peut concerner ce qui est bien formulé, clair, important dans la logique du texte.

Surlignez en **orange** ce qui doit être **réécrit**. Cela peut concerner ce qui est mal formulé, pas clair, mal placé dans la logique du texte mais aussi les fautes d'orthographe, de grammaire, de conjugaison ou de syntaxe.

Demiere
Charles

21 janvier 2013
4^{ème} A

Sujet : Peut-on dire que l'Allemagne nazie était un régime totalitaire et raciste ?

L'Allemagne un pays nazi est une dictature totalitaire et raciste. A la faveur d'un contexte de crise économique, Hitler accède au pouvoir en 1933. Il gouverna l'Allemagne selon le slogan "Ein Volk, Ein Reich, Ein Führer". Hitler rêve de conquérir l'espace vital allemand.

Hitler est le seul et unique chef et maître du pays. Il se fait appeler le Führer, ce qui signifie le chef. Une partie de la population idolâtre Hitler. Il bénéficie ainsi d'un culte de la personnalité. Il impose ses lois qu'il a écrit dans un livre lorsqu'il était en prison "Mein Kampf". Hitler supprime une grande partie des libertés fondamentales telles que la liberté d'expression. De plus, Hitler encadre la jeunesse de son pays, à partir de 10 ans, les enfants dans une des organisations d'Hitler. Puis 4 ans plus tard il les place soit dans le parti, l'armée, la SA, les SS et le front du travail. Tous les opposants du régime sont emprisonnés.

Pour Hitler le monde est un ensemble de races où la race des signeurs et celle des allemands. Hitler souhaite créer un peuple de race totalement allemande. La race des citoyens qui est supposée être la race des gagnants, la race surhumaine etc... Les aryens sont blond, et les yeux bleus quand bien même Hitler lui-même est brun aux yeux marron. Les nazis

comparent les juifs à des parasites et veulent les éliminer. Le Führer ordonne à ses troupes de faire poser des affiches sur les portes et vitrines des magasins juifs en écrivant sur les affiches "ceci est un magasin juif n'achetez rien ici!". Les juifs doivent porter des étoiles jaunes pour être distingués dans la rue. Hitler les envoya dans des camps de concentration, peu d'entre eux en survécurent.

Hitler fit brûler tous les livres de bibliothèques qui pouvaient inciter à la rébellion contre le Führer.

En fin de compte l'Allemagne passe dans un désastre complet d'un peuple corrompu et d'un dirigeant psychopathe. C'est pour tout cela que l'Allemagne nazie était une dictature totalitaire et raciste.

Questionnaire about implicit theories of intelligence:

Toujours pour vous aider à rentrer dans le rôle d'enseignant, et ensuite décider si l'élève doit passer en 3^{ème} ou redoubler, imaginez la représentation que vous auriez des élèves en tant qu'enseignant. Lisez chaque phrase et indiquez si vous êtes d'accord ou pas avec cette phrase en entourant un chiffre entre 1 et 7. Répondez spontanément, il n'y a pas de bonne ou mauvaise réponse.

Même si les élèves peuvent apprendre de nouvelles choses, cela ne change pas vraiment leur niveau réel d'intelligence

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
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Tout ce que les élèves vivent leur permet de faire augmenter leur niveau d'intelligence

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
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Au cours de leur vie, l'intelligence des élèves ne peut pas beaucoup progresser

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

L'intelligence des élèves s'enrichit à chaque fois qu'ils rencontrent une nouvelle situation

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

Le niveau d'intelligence des élèves est fixé une fois pour toutes et il ne se modifiera jamais

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

Quel que soit le niveau d'intelligence des élèves, ils pourront toujours le faire progresser

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

Les élèves ont un certain niveau d'intelligence et, quoi qu'ils fassent, il ne peut pas changer

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

Si les élèves le veulent, ils peuvent devenir de plus en plus intelligent

<i>Pas du tout d'accord</i>	1	2	3	4	5	6	7	<i>Tout à fait d'accord</i>
-----------------------------	---	---	---	---	---	---	---	-----------------------------

Manipulation checks:

Vous estimez que le niveau de la copie que vous venez de corriger est :

Médiocre 1 2 3 4 5 6 7 8 9 10 Excellent

Rappelez-vous des informations qui vous ont été présentées. Pour répondre à ces questions nous vous demandons de faire appel à votre mémoire et de **ne pas retourner lire** les informations. C'est très important pour nous.

A quoi servaient votre évaluation de la synthèse:

- Décider si l'élève doit passer ou redoubler
- Proposer des stratégies pour que l'élève progresse dans ses apprentissages

Jimmy a :

- ni frère ni soeur
- une soeur
- Plusieurs frères et soeurs

Son film préféré est :

- Avengers 2
- Aladin
- Astérix et le domaine des Dieux

Il vit dans un milieu:

1	2	3	4	5	6	7
Très désavantagé	Désavantagé	Plutôt désavantagé	Moyen	Plutôt Avantagé	Avantagé	Très avantagé

Socio-demographic questions:

Merci de répondre à ces quelques questions à propos de vous.

Sexe : () Féminin () Masculin Date de Naissance :

Langue Maternelle : Nationalité(s) :

Quelle discipline étudiez-vous :

En quelle année êtes-vous :

Veillez indiquer le diplôme le plus élevé de votre mère/ tutrice/ 1^{ère} personne vous ayant élevé :

- Sans diplôme
- BEP
- CAP
- baccalauréat
- Quelques années d'études supérieures sans valider un diplôme
- Un diplôme de DEUG ou BTS (bac +2)
- Un diplôme de Licence (bac +3)
- Un diplôme de master/maîtrise (bac +4 ou 5)
- Un troisième cycle ou un doctorat
- Autre (précisez) _____

Veillez indiquer le diplôme le plus élevé de votre père/ tuteur/ 2^{ème} personne vous ayant élevé :

- Sans diplôme
- BEP
- CAP
- baccalauréat
- Quelques années d'études supérieures sans valider un diplôme
- Un diplôme de DEUG ou BTS (bac +2)
- Un diplôme de Licence (bac +3)
- Un diplôme de master/maîtrise (bac +4 ou 5)
- Un troisième cycle ou un doctorat
- Autre (précisez) _____

Veillez indiquer la profession exercée par vos parents/tuteurs (soyez précis-e):

Mère :

Père :

Vous avez principalement vécu chez :

- Vos parents
- Votre mère/tutrice
- Votre père/tuteur

Experiment 1.4

2. Educational Function (Manipulation)

Description of assessment method:

Dans votre classe, vous avez demandé aux élèves d'écrire une synthèse. Les élèves avaient des documents historiques et des textes à disposition. A partir de ces documents, ils devaient écrire un texte pour répondre au sujet suivant :

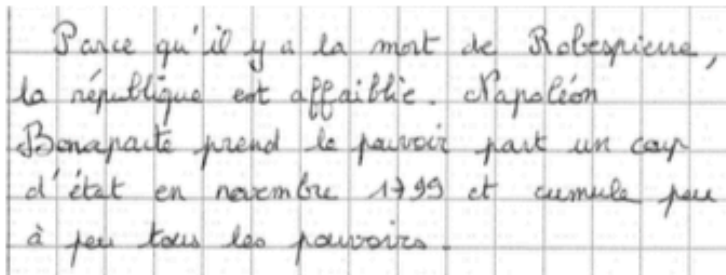
Peut-on dire que l'Allemagne nazie était un régime totalitaire et raciste ?

Pour corriger cette synthèse, vous avez décidé d'utiliser une **méthode d'évaluation particulière**.

Vous surlignez des parties du texte en deux couleurs

- Vous surlignez en **jaune** ce qui vous semble **bien** écrit. Cela peut concerner ce qui est bien formulé, clair, important dans la logique du texte.
- Vous surlignez en **orange** ce qui doit être **réécrit**. Cela peut concerner ce qui est mal formulé, pas clair, mal placé dans la logique du texte mais aussi les fautes d'orthographe, de grammaire, de conjugaison ou de syntaxe.

Voici un exemple de phrase corrigée selon cette méthode sur un sujet différent :



Parce qu'il y a la mort de Robespierre, la république est affaiblie. Napoléon Bonaparte prend le pouvoir par un coup d'état en novembre 1799 et cumule peu à peu tous les pouvoirs.

La synthèse que vous allez corriger est un exercice d'**évaluation des compétences** réalisé par vos élèves dans le cadre d'un programme d'apprentissage de l'histoire. L'évaluation que vous ferez vous donnera des informations qui vous permettront d'aider l'élève à **améliorer ses apprentissages** en identifiant les stratégies à lui proposer pour **progresser** dans la rédaction des synthèses

Experiment I.4

3. Low-SES (Manipulation)

Target description:

Afin de vous aider à rentrer dans le rôle d'enseignant, lisez les informations ci-dessous. Elles présentent l'élève qui a fait l'exercice que vous allez corriger. Imaginez que vous êtes l'enseignant(e) de cet élève.

Dossier Administratif	
1) ELEVE	
Nom : <u>Bétrisey</u> <small>(dénomination officielle)</small>	Prénom : <u>Jimmy</u>
Naissance (jour, mois, année) : <u>23</u> <u>06</u> <u>02</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : <u>9 Chemin des Estournelles</u>	Code Postal <u>86000</u> Commune <u>Poitiers</u>
Nationalité (pays) : <u>France</u>	
2) PARENTS / RESPONSABLES LEGAUX	
<u>Père</u>	<u>Mère</u>
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corine</u>
Adresse : <u>9 Chemin des Estournelles</u> <u>86000 Poitiers</u>	Adresse : <u>9 Chemin des Estournelles</u> <u>86000 Poitiers</u>
Téléphone : <u>05 49 36 63 49</u>	Téléphone : <u>05 49 36 63 49</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre de frères et sœurs : <u>3</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à l'imaginer.

Jimmy Bétrisey est un jeune garçon de 13 ans. C'est un élève qui s'entend globalement bien avec ses camarades. Après les cours, Jimmy aime bien rester discuter avec ses amis. Il rentre généralement chez lui à pied. Une fois à la maison, Jimmy apprécie beaucoup d'écouter de la musique ou de regarder la télévision. Son film préféré est *Avengers 2*. Le week-end, il fait du sport avec ses amis dans le parc de son quartier. Cette année, pour son anniversaire, ses parents l'ont emmené lui et ses frères et sœurs au centre aquatique.

Second line of research

Experiment 2.1

I. Low-SES Male Condition (Material)

Description of the tracking system in Switzerland:

Voici le scénario que l'on vous propose :

Imaginez que vous êtes un(e) enseignant(e) à l'école primaire.

Prenez quelques secondes pour imaginer que vous êtes dans la peau de cette personne.

A chaque fin d'année, la direction de l'école demande aux enseignants de participer à la conférence des maîtres. La conférence des maîtres est une réunion au cours de laquelle les enseignants discutent ensemble de dossiers d'élèves qui sont arrivés au terme de leurs études primaires (fin 6^{ème} primaire) afin de décider de leur orientation scolaire.

Dans le canton de Vaud, à l'issue des études primaires, les élèves sont orientés vers une des deux voies scolaires :

- La voie «prégymnasiale» accueillera les élèves qui pourront accéder directement aux études de maturité gymnasiale (baccalauréat) s'ils obtiennent leur certificat d'études. Cette voie scolaire prépare à la poursuite d'études supérieures
- La voie «générale» accueillera les élèves qui se destinent principalement aux écoles de culture générale et de commerce, ainsi qu'à la formation professionnelle (apprentissage).

Les décisions d'orientation suivent des exigences précises :

- Pour accéder à la voie prégymnasiale, la moyenne générale de l'élève doit être au minimum une moyenne de 4.75
- Les élèves qui ne répondent pas à ces critères sont orientés en voie générale.

Questions :

Si un élève a une moyenne de 4.5, il sera plutôt orienté vers :

- La voie prégymnasiale
- La voie générale

La voie générale donne accès à :

- Une formation professionnelle (apprentissage)
- Une formation universitaire

Instruction for borderline cases:

Bien que les exigences pour les voies scolaires soient d'ordinaire très claires, il arrive parfois de rencontrer parmi les élèves, certains « **cas limites** ». Dans le canton de Vaud, les cas limites sont:

- Des cas où les résultats de l'élève sont de très peu inférieurs à ceux qui sont nécessaires pour passer dans la voie prégymnasiale.
- Dans ce cas, la conférence des maîtres examine d'office si une admission à cette voie apparaît ou non pertinente.
- La décision doit être motivée *en fonction de chaque situation*. Il ne peut être question d'accorder systématiquement, ni de refuser systématiquement une admission à la voie prégymnasiale.

Imaginez désormais que vous êtes présent à la conférence des maîtres, en tant qu'enseignant(e).



Ci-dessous vous trouverez le dossier d'un élève, qui est mis à disposition de tous les enseignants présents à la conférence. **Prenez bien connaissance des informations données**, nous vous poserons ultérieurement des questions sur votre connaissance du dossier. Nous vous demanderons également de donner votre avis sur ce cas limite et d'indiquer quelle est la meilleure voie pour cet élève, selon vous.

Question :

Que faut-il faire avec un « cas limite » ? (Une seule bonne réponse)

- Laisser passer l'élève automatiquement en voie prégymnasiale
- Laisser automatiquement l'élève poursuivre en voie générale
- Laisser la décision aux enseignants présents à la conférence des maîtres

Target description:

Dossier Administratif

1) ELEVE

Nom : <u>Bétrisey</u> (dénomination officielle)	Prénom : <u>Bryan</u>
Naissance (jour, mois, année) : <u>23 06 01</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : Rue : <u>Chemin des Estournelles</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Commune d'origine: <u>Renens (VD)</u>	Nationalité (pays) : <u>Suisse</u>

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corinne</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 316 99 33</u>	Téléphone : <u>021 316 99 33</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre de frères et sœurs : <u>4</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à vous le représenter.

Bryan est un jeune garçon de 11 ans. A la sortie de l'école, Bryan aime bien rester discuter avec ses amis dans le préau de l'école. Il rentre généralement de l'école à pied. Lorsqu'il arrive à la maison, Bryan apprécie beaucoup d'écouter de la musique ou de regarder la télévision, en particulier son émission favorite *Les anges de la télé-réalité*. Son film préféré de l'année dernière était *Intouchables*. Le week-end, il fait du sport à la maison de quartier, où il joue avec ses amis. Cette année pour son anniversaire, les parents de Bryan l'ont emmené avec ses frères et sœurs à Aqua Parc.

Student academic file:

BULLETIN SCOLAIRE

Année scolaire 2012-2013

Ecole : Etablissement scolaire primaire des Estournelles

Elève : Bryan Bétrisey

Année de scolarité : 6^{ème} primaire

Résultats annuels

Français	4,5
Mathématiques	5
Allemand	4,5
Sciences	4,5
Moyenne générale :	4.61

Commentaire de l'Enseignant :

Bryan est un élève qui généralement s'entend bien avec ses camarades. Il est habituellement motivé, même s'il est parfois un peu dissipé. C'est un élève plutôt attentif, toutefois il a tendance à être un peu rêveur. Dans l'ensemble, les performances de Bryan sont convenables.

Measures of suitability of tracks:

Résumé de la situation :

Les dispositions cantonales exigent que l'élève atteigne 4.75 de moyenne. Dans le cas présent, Bryan est considéré comme un cas limite puisqu'il a obtenu une moyenne générale de 4.61.

Nous vous demandons de prendre position sur la situation de Bryan. Il n'y a pas de bonne ou de mauvaise réponse, nous cherchons seulement à comprendre comment les gens traitent les informations pour prendre une décision.

Veillez entourer le chiffre correspondant sur l'échelle de 1 à 7 ci-dessous.

Selon vous, Bryan devrait être orienté vers :

- La voie générale

Pas du tout d'accord Tout à fait d'accord

- La voie pré-gymnasiale

Pas du tout d'accord Tout à fait d'accord

D'après vous, les autres enseignants de la conférence des maîtres orienteront Bryan vers :

- La voie générale

Pas du tout Certainement

- La voie pré-gymnasiale

Pas du tout Certainement

D'après vous, quelle sera la décision de la direction de l'école :

- La voie générale

Pas du tout Certainement

- La voie pré-gymnasiale

Pas du tout Certainement

Dans l'hypothèse où Bryan serait orienté vers la voie générale, dans quelle mesure pensez-vous que les parents de Bryan seraient d'accord avec cette orientation ?

Pas du tout Certainement

Dans l'hypothèse où Bryan serait orienté vers la voie pré-gymnasiale, dans quelle mesure pensez-vous que les parents de Bryan seraient d'accord avec cette orientation ?

Pas du tout Certainement

Questionnaire about perceived importance of success factors in school:

Réfléchissez maintenant au système éducatif en général.

(Cette question ne concerne pas le cas spécifique de Bryan)

Dans quelle mesure, pensez-vous que la performance scolaire des élèves est déterminée par :

- l'effort fourni par l'élève

Pas du tout Complètement

- l'intelligence de l'élève

Pas du tout Complètement

- les enseignants de l'élève

Pas du tout Complètement

- les connaissances de l'élève

Pas du tout Complètement

- le milieu social de l'élève

Pas du tout Complètement

- la personnalité de l'élève

Pas du tout Complètement

- l'environnement familial de l'élève

Pas du tout Complètement

- la nationalité d'origine de l'élève

Pas du tout Complètement

Manipulation checks:

Rappelez vous des informations que vous avez eues à propos de Bryan

D'après les informations données, la moyenne générale de Bryan était de

- 4.51
- 4.61
- 4.71

D'après les informations données, Bryan rentre de la maison

- en voiture
- à pied
- à vélo

D'après le commentaire de l'enseignant, Bryan avait tendance à être un peu:

- timide
- bavard
- rêveur

D'après les informations données, son film préféré est :

- Intouchables
- Bienvenue chez les ch'tis
- Astérix aux jeux olympiques

D'après les informations données, Bryan provient d'un milieu:

1	2	3	4	5	6	7
Très désavantagé	Désavantagé	Plutôt désavantagé	Moyen	Plutôt avantagé	Avantagé	Très avantagé

Socio-demographic questions:

Maintenant, merci de répondre à ces quelques questions à propos de vous.

Sexe : () Féminin () Masculin Année de Naissance :

Filière d'Etude :

Année d'Etude :

Langue Maternelle :

Nationalité(s) :

Veillez indiquer le diplôme le plus élevé de votre mère:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer le diplôme le plus élevé de votre père:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer la profession exercée par chacun de vos parents (essayez d'être le/la plus précis(e) possible):

Mère :

Père :

Bénéficiez-vous d'une bourse pour vos études?

- Oui, car mes parents ont un revenu assez bas
- Oui, pour une autre raison
- Non

Avec tous nos remerciements pour votre participation !

Experiment 2.1

2. High-SES Male (Manipulation)

Target description:

Dossier Administratif

1) ELEVE

Nom : <u>Demierre</u> <i>(dénomination officielle)</i>	Prénom : <u>Louis</u>
Naissance (jour, mois, année) : <u>23 06 01</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : Rue : <u>Chemin des Estournelles 9</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Commune d'origine: <u>Pully (VD)</u>	Nationalité (pays) : <u>Suisse</u>

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable marketing</u>
Nombre de frères et sœurs : <u>1</u>	

Puisque vous ne connaissez pas personnellement cet élève, voici quelques informations supplémentaires pour vous aider à vous le représenter.

Louis Demierre est un jeune garçon de 11 ans. Habituellement, Louis rentre de l'école à pied. Lorsqu'il arrive à la maison, il aime travailler ses gammes au piano. Le soir, Louis aime bien écouter de la musique ou passer du temps à lire. Son livre de chevet favori est *Le chien des Baskerville*. Son film préféré de l'année dernière était *Intouchables*. Le week-end, il est inscrit au tennis-club de son quartier dans lequel il joue en simple. Cette année pour son anniversaire, les parents de Louis l'ont emmené lui et sa petite sœur à Londres.

Experiment 2.1

3. Low-SES Female (Manipulation)

Target description:

Dossier Administratif

1) ELEVE

Nom : <u>Bétrisey</u> <i>(dénomination officielle)</i>	Prénom : <u>Cindy</u>
Naissance (jour, mois, année) : <u>23</u> <u>06</u> <u>01</u>	Sexe : F <input checked="" type="checkbox"/> M <input type="checkbox"/>
Domicile : Rue : <u>Chemin des Estournelles</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Commune d'origine: <u>Renens (VD)</u>	Nationalité (pays) : <u>Suisse</u>

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corinne</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 316 99 33</u>	Téléphone : <u>021 316 99 33</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre de frères et sœurs : <u>4</u>	

Puisque vous ne connaissez pas personnellement cette élève, voici quelques informations supplémentaires pour vous aider à vous le représenter.

Cindy Bétrisey est une jeune fille de 11 ans. En sortant de l'école, elle aime bien rester avec ses amies dans le préau. Habituellement, Cindy rentre de l'école à pied. Lorsqu'elle arrive à la maison, elle aime bien écouter de la musique ou passer du temps à regarder la télévision, en particulier son émission favorite *Les anges de la télé-réalité*. Son film préféré de l'année dernière était *Intouchables*. Le week-end, elle fait du sport à la maison de quartier, où elle joue avec ses amies. Cette année pour son anniversaire, les parents de Cindy l'ont emmenée avec ses frères et soeurs à Aqua Parc.

Experiment 2.1

4. High-SES Female (Manipulation)

Target description:

Dossier Administratif

1) ELEVE

Nom : <u>Demierre</u> <i>(dénomination officielle)</i>	Prénom : <u>Charlotte</u>
Naissance (jour, mois, année) : <u>23 06 01</u>	Sexe : F <input checked="" type="checkbox"/> M <input type="checkbox"/>
Domicile : Rue : <u>Chemin des Estournelles 9</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Commune d'origine: <u>Pully (VD)</u>	Nationalité (pays) : <u>Suisse</u>

2) COMPOSITION FAMILIALE

<u>Père</u>	<u>Mère</u>
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable marketing</u>
Nombre de frères et sœurs : <u>1</u>	

Puisque vous ne connaissez pas personnellement cette élève, voici quelques informations supplémentaires pour vous aider à vous le représenter.

Charlotte Demierre est une jeune fille de 11 ans. Habituellement, Charlotte rentre de l'école à pied. Lorsqu'elle arrive à la maison, elle aime travailler ses gammes au piano. Le soir, Charlotte aime bien écouter de la musique ou passer du temps à lire. Son livre de chevet favori est *Le chien des Baskerville*. Son film préféré de l'année dernière était *Intouchables*. Le week-end, elle est inscrite au tennis-club de son quartier dans lequel elle joue en simple. Cette année pour son anniversaire, les parents de Charlotte l'ont emmenée elle et sa petite sœur à Londres.

Experiment 2.2

Scenario description:

Etude sur la prise de décision

Vous allez participer à une étude organisée par une équipe de recherche de l'Université de Lausanne, avec laquelle je travaille pour mon mémoire de Master en Sciences et Pratique de l'Education.

Dans cette recherche, nous nous intéressons à la façon dont les gens prennent des décisions individuelles en cas d'informations partielles. Nous aimerions savoir comment des personnes expertes réagissent lorsqu'on leur propose un scénario avec un dilemme. Nous allons donc vous présenter un scénario qui vous est familier: la conférence des maîtres.



Dans cette situation les décisions sont généralement prises en groupe et dans cette recherche nous voulons étudier comment les experts contribuent à la décision collective avec leurs réponses individuelles.

Le scénario qui vous est présenté contient plusieurs types d'informations pour que vous puissiez vous faire un avis sur la situation donnée.

Il est essentiel pour nous que vous preniez le temps de bien lire les consignes avant de répondre aux questions dans l'ordre où elles sont posées. Afin de nous assurer que vous ayez bien lu, nous vous poserons des questions sur ce qui vous a été présenté.

Vos réponses à cette recherche sont anonymes et confidentielles. Elles seront uniquement utilisées à des fins de recherche.

Recherche réalisée sous la responsabilité du Prof. Fabrizio Butera, Faculté des SSP.
Mémorante: Fabienne Bataillard (076.615.07.95)

Voici le scénario que l'on vous propose :

Imaginez que vous êtes un,e enseignant,e du cycle de transition à l'école primaire.

Comme à la fin de chaque année scolaire, vous participez à la conférence des maîtres. Durant cette réunion, les enseignant,e,s discutent ensemble de dossiers d'élèves qui sont arrivés au terme de leurs études primaires afin de décider de leur orientation scolaire.

Dans le canton de Vaud, à l'issue des études primaires, les élèves sont orientés vers une des deux voies scolaires :

° La voie «prégymnasiale» accueillera les élèves qui pourront accéder directement aux études de maturité gymnasiale (baccalauréat) s'ils obtiennent leur certificat d'études. Cette voie scolaire prépare à la poursuite d'études supérieures.

° La voie «générale» accueillera les élèves qui se destinent principalement aux écoles de culture générale et de commerce, ainsi qu'à la formation professionnelle (apprentissage).

Les décisions d'orientation suivent des exigences précises :

- Pour accéder à la voie prégymnasiale, l'élève de fin de 6ème année doit obtenir: 19 pts et plus pour le groupe 1 (français + mathématiques + allemand + sciences) et 9 pts et plus pour le groupe 2 (géographie + histoire).
- Les élèves qui ne répondent pas à ces critères sont orientés en voie générale.

Les cas limites

Bien que les exigences pour les voies scolaires soient d'ordinaire très claires, il arrive parfois de rencontrer parmi les élèves, certains « cas limites ». Dans le canton de Vaud, les cas limites sont:

- Des cas où les résultats de l'élève sont de très peu inférieurs à ceux qui sont nécessaires pour passer dans la voie prégyrnasiale.
- Dans ce cas, la conférence des maîtres examine d'office si une admission à cette voie apparaît ou non pertinente.
- La décision doit être motivée en fonction de chaque situation. Il ne peut être question d'accorder systématiquement, ni de refuser systématiquement une admission à la voie prégyrnasiale.

Imaginez désormais que vous êtes présents à la conférence des maîtres.



Ci-dessous vous trouverez le dossier d'un élève, qui est mis à disposition de tous les enseignant,e,s présents à la conférence des maîtres. Prenez bien connaissance des informations données, nous vous poserons ultérieurement des questions sur votre connaissance du dossier. Nous vous demanderons également de donner votre avis sur ce cas limite et d'indiquer quelle est la meilleure voie pour cet élève, selon vous.

I. Low-SES (Manipulation)

Target description:

BULLETIN SCOLAIRE

Année scolaire 2012-2013

Ecole : Etablissement scolaire primaire des Estournelles

Elève : Bryan Bétrisey

Année de scolarité : 6^{ème} année primaire

Résultats annuels

Groupe 1	
*Français	5
*Mathématiques	4.5
*Allemand	4.5
Sciences	4.5
Moyenne groupe 1	18,5 points
Groupe 2	
Géographie	4
Histoire	5
Moyenne groupe 2	9 points

Moyenne annuelle, exemple de calcul :

*Moyenne des notes obtenues en classe 4.8

**Note de l'ECR 4.5

Calcul : $(4.8 \times 0.7) + (4.5 \times 0.3) = 4.71$ Moyenne annuelle finale (arrondie au 1/2 point) 4.5

Commentaire de l'Enseignant,e :

Bryan est un élève qui généralement s'entend bien avec ses camarades. Il est habituellement motivé, même s'il est parfois un peu dissipé. C'est un élève plutôt attentif, toutefois il a tendance à être un peu rêveur. Dans l'ensemble, les performances de Bryan sont convenables.

Experiment 2.2

2. High-SES (Manipulation)

Target description:

BULLETIN SCOLAIRE

Année scolaire 2012-2013

Ecole : Etablissement scolaire primaire des Estournelles

Elève : Louis Demierre

Année de scolarité : 6^{ème} année primaire

Résultats annuels

Groupe 1	
*Français	5
*Mathématiques	4.5
*Allemand	4.5
Sciences	4.5
Moyenne groupe 1	18,5 points

Groupe 2	
Géographie	4
Histoire	5
Moyenne groupe 2	9 points

Moyenne annuelle, exemple de calcul :

*Moyenne des notes obtenues en classe 4.8

**Note de l'ECR 4.5

Calcul : $(4.8 \times 0.7) + (4.5 \times 0.3) = 4.71$ Moyenne annuelle finale (arrondie au 1/2 point) 4.5

Commentaire de l'Enseignant,e :

Louis est un élève qui généralement s'entend bien avec ses camarades. Il est habituellement motivé, même s'il est parfois un peu dissipé. C'est un élève plutôt attentif, toutefois il a tendance à être un peu rêveur. Dans l'ensemble, les performances de Louis sont convenables.

Experiment 2.3

I. Selection Function (Manipulation)

Description of Swiss educational system:

Voici le scénario que l'on vous propose :

Imaginez que vous êtes un(e) enseignant(e) à l'école primaire.

Prenez quelques secondes pour imaginer que vous êtes dans la peau de cette personne.

En Suisse, le système scolaire obligatoire comprend les degrés primaire et secondaire. L'école suisse est basée sur les principes de la gratuité de l'enseignement et de la sélection, dans l'effort de conduire chaque élève au maximum de ses possibilités. Les élèves sont donc orientés selon leurs aptitudes scolaires afin que chacun ait la possibilité d'atteindre le maximum de ses potentialités. Les études PISA ont démontré que le système suisse produit de bons résultats.

Au sein du système scolaire suisse, à chaque fin d'année, la direction de l'école demande aux enseignants de participer à la conférence des maîtres. La conférence des maîtres est une réunion au cours de laquelle les enseignants discutent ensemble de dossiers d'élèves qui sont arrivés au terme de leurs études primaires (fin 6^{ème} primaire, ou 8^{ème} Harmos) afin de décider de leur orientation scolaire.

Dans le canton de Vaud, à l'issue des études primaires, les élèves sont orientés vers une des deux voies scolaires :

- La voie «prégymnasiale» accueillera les élèves qui pourront accéder directement aux études de maturité gymnasiale (baccalauréat) s'ils obtiennent leur certificat d'études. Cette voie scolaire prépare à la poursuite d'études supérieures
- La voie «générale» accueillera les élèves qui se destinent principalement aux écoles de culture générale et de commerce, ainsi qu'à la formation professionnelle (apprentissage).

Les décisions d'orientation suivent des exigences précises :

- Pour accéder à la voie prégymnasiale, la moyenne générale de l'élève doit être au minimum une moyenne de 4.75
- Les élèves qui ne répondent pas à ces critères sont orientés en voie générale.

Experiment 2.3

2. Education Function (Manipulation)

Description of Swiss educational system:

Voici le scénario que l'on vous propose :

Imaginez que vous êtes un(e) enseignant(e) à l'école primaire.

Prenez quelques secondes pour imaginer que vous êtes dans la peau de cette personne.

En Suisse, le système scolaire obligatoire comprend les degrés primaire et secondaire. L'école suisse est basée sur les principes de la gratuité de l'enseignement et de la formation, qui intègre des tâches d'éducation et d'instruction permettant à tous les élèves d'apprendre, et d'apprendre à apprendre. Les élèves sont donc formés pour qu'ils développent leurs savoirs et qu'ils aient la possibilité de progresser dans la maîtrise de leurs connaissances. Les études PISA ont démontré que le système suisse produit de bons résultats.

Au sein du système scolaire suisse, à chaque fin d'année, la direction de l'école demande aux enseignants de participer à la conférence des maîtres. La conférence des maîtres est une réunion au cours de laquelle les enseignants discutent ensemble de dossiers d'élèves qui sont arrivés au terme de leurs études primaires (fin 6^{ème} primaire, ou 8^{ème} Harmos) afin de décider de leur orientation scolaire.

Dans le canton de Vaud, à l'issue des études primaires, les élèves sont orientés vers une des deux voies scolaires :

- La voie «prégymnasiale» accueillera les élèves qui pourront accéder directement aux études de maturité gymnasiale (baccalauréat) s'ils obtiennent leur certificat d'études. Cette voie scolaire prépare à la poursuite d'études supérieures
- La voie «générale» accueillera les élèves qui se destinent principalement aux écoles de culture générale et de commerce, ainsi qu'à la formation professionnelle (apprentissage).

Les décisions d'orientation suivent des exigences précises :

- Pour accéder à la voie prégymnasiale, la moyenne générale de l'élève doit être au minimum une moyenne de 4.75
- Les élèves qui ne répondent pas à ces critères sont orientés en voie générale.

Third line of research

Experiment 3.1

I. Social order

Instructions:

Dans cette recherche (durée : 20 minutes), nous nous intéressons à la façon dont les gens retiennent les informations en mémoire dans un contexte scolaire. L'étude se déroule en trois parties. Dans la première partie, nous allons vous fournir des fiches scolaires avec des informations sur un échantillon de six élèves d'une classe de dernière année d'école primaire (8^{ème}, anciennement 6^{ème} primaire). Nous vous demandons d'essayer de retenir le maximum d'informations sur ces élèves sans prendre de notes.

Lorsque vous pensez avoir terminé la phase de mémorisation, pour créer un délai entre mémorisation et restitution, vous répondrez à une deuxième étude, dans laquelle quelques questions sur votre perception du système scolaire vous seront posées. Après la première partie, vous ne pourrez plus revenir voir les dossiers d'élèves.

Finalement, dans la dernière partie, vous reviendrez à la première étude, et nous vous demanderons de vous remémorer les informations de la première partie. Il faudra répondre à des questions sur les élèves qui vous ont été présentés pour voir quelles ont été les informations retenues.

L'étude dure en moyenne 20 minutes.



Vos réponses à cette recherche sont anonymes et confidentielles. Elles seront uniquement utilisées à des fins de recherche.

Avec tous nos remerciements pour votre participation.

Target descriptions:



Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Bryan</u> <small>(dénomination officielle)</small>	Nom : <u>Knoll</u>
Naissance (jour, mois, année) : <u>23 06 01</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : Rue : <u>Chemin des Estournelles</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville]: <u>Renens (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Knoll</u>	Nom : <u>Knoll</u>
Prénom : <u>Eric</u>	Prénom : <u>Fiona</u>
Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Estournelles 9</u> <u>1003 Lausanne</u>
Téléphone : <u>021 316 99 33</u>	Téléphone : <u>021 316 99 33</u>
Profession : <u>Frigoriste</u>	Profession : <u>Auxiliaire de vente</u>
Nombre d'enfants : <u>3</u>	Nombre d'enfants : <u>3</u>

Classe : <u>801</u>	Salle de classe : <u>302</u>	Maître de classe : <u>Dominique Dubois</u>
Etablissement : <u>Grand-Pré</u>		
Parcours : Promotion <input type="checkbox"/> Maintien <input checked="" type="checkbox"/>		

Moyennes Annuelles Finales

	Notes requise	Notes obtenue
Français ¹	4	4
Allemand ¹	4	4
Mathématiques ¹	4	3.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)



Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Cindy</u> <i>(dénomination officielle)</i>	Nom : <u>Bétrisey</u>
Naissance (jour, mois, année) : <u>14 08 01</u>	Sexe : F <input checked="" type="checkbox"/> M <input type="checkbox"/>
Domicile : Rue : <u>Rue des Deux-Ponts 7</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville] : <u>Lausanne (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Bétrisey</u>	Nom : <u>Bétrisey</u>
Prénom : <u>Rémy</u>	Prénom : <u>Corinne</u>
Adresse : <u>Rue des Deux-Ponts 7</u> <u>1003 Lausanne</u>	Adresse : <u>Rue des Deux-Ponts 7</u> <u>1003 Lausanne</u>
Téléphone : <u>021 744 32 98</u>	Téléphone : <u>021 744 32 98</u>
Profession : <u>Ouvrier du bâtiment</u>	Profession : <u>Employée de restauration</u>
Nombre d'enfants : <u>5</u>	Nombre d'enfants : <u>5</u>

Classe : <u>801</u> Salle de classe : <u>302</u> Maître de classe : <u>Dominique Dubois</u>
Etablissement : <u>Grand-Pré</u>
Parcours : Promotion <input checked="" type="checkbox"/> Maintien <input type="checkbox"/>

Moyennes Annuelles Finales

	Notes requise	Notes obtenue
Français ¹	4	4
Allemand ¹	4	3.5
Mathématiques ¹	4	4.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)

Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Enzo</u> <i>(dénomination officielle)</i>	Nom : <u>Grognuz</u>
Naissance (jour, mois, année) : <u>26 05 01</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : Rue : <u>Route du Châtelet 45</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville] : <u>Ecublens (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Grognuz</u>	Nom : <u>Grognuz</u>
Prénom : <u>Serge</u>	Prénom : <u>Brigitte</u>
Adresse : <u>Route du Châtelet 45</u> <u>1003 Lausanne</u>	Adresse : <u>Route du Châtelet 45</u> <u>1003 Lausanne</u>
Téléphone : <u>021 436 27 69</u>	Téléphone : <u>021 436 27 69</u>
Profession : <u>Mécanicien Automobile</u>	Profession : <u>Réceptionniste</u>
Nombre d'enfants : <u>4</u>	Nombre d'enfants : <u>4</u>

Classe : <u>801</u>	Salle de classe : <u>302</u>	Maître de classe : <u>Dominique Dubois</u>
Etablissement : <u>Grand-Pré</u>		
Parcours : Promotion <input checked="" type="checkbox"/> Maintien <input type="checkbox"/>		

Moyennes Annuelles Finales

	Notes requis	Notes obtenues
Français ¹	4	4.5
Allemand ¹	4	4
Mathématiques ¹	4	4.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)

Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Capucine</u> <i>(dénomination officielle)</i>	Nom : <u>Rochat</u>
Naissance (jour, mois, année) : <u>18 03 01</u>	Sexe : F <input checked="" type="checkbox"/> M <input type="checkbox"/>
Domicile : Rue : <u>Chemin des Marais 12B</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville] : <u>Pully (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Rochat</u>	Nom : <u>Rochat</u>
Prénom : <u>Philippe</u>	Prénom : <u>Catherine</u>
Adresse : <u>Chemin des Marais 12B</u> <u>1003 Lausanne</u>	Adresse : <u>Chemin des Marais 12B</u> <u>1003 Lausanne</u>
Téléphone : <u>021 316 99 33</u>	Téléphone : <u>021 316 99 33</u>
Profession : <u>Médecin</u>	Profession : <u>Juriste</u>
Nombre d'enfants : <u>1</u>	Nombre d'enfants : <u>1</u>

Classe : 801 Salle de classe : 302 Maître de classe : Dominique Dubois
 Etablissement : Grand-Pré
 Parcours : Promotion Maintien

Moyennes Annuelles Finales

	Notes requise	Notes obtenue
Français ¹	4	5.5
Allemand ¹	4	6
Mathématiques ¹	4	5.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)

Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Charlotte</u> <small>(dénomination officielle)</small>	Nom : <u>Mahault</u>
Naissance (jour, mois, année) : <u>05 04 01</u>	Sexe : F <input checked="" type="checkbox"/> M <input type="checkbox"/>
Domicile : Rue : <u>Avenue des Tranchées 35</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville] : <u>Lutry (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Mahault</u>	Nom : <u>Mahault</u>
Prénom : <u>Jules</u>	Prénom : <u>Béatrice</u>
Adresse : <u>Avenue des Tranchées 35</u> <u>1003 Lausanne</u>	Adresse : <u>Avenue des Tranchées 35</u> <u>1003 Lausanne</u>
Téléphone : <u>021 721 22 50</u>	Téléphone : <u>021 721 22 50</u>
Profession : <u>Avocat</u>	Profession : <u>Journaliste</u>
Nombre d'enfants : <u>2</u>	Nombre d'enfants : <u>2</u>

Classe : 801 Salle de classe : 302 Maître de classe : Dominique Dubois
 Etablissement : Grand-Pré
 Parcours : Promotion Maintien

Moyennes Annuelles Finales

	Notes requis	Notes obtenue
Français ¹	4	5.5
Allemand ¹	4	5.5
Mathématiques ¹	4	5.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)

Document pour le contrôle des données concernant un élève.

Année scolaire 2012-2013

Prénom : <u>Louis</u> <i>(dénomination officielle)</i>	Nom : <u>Demierre</u>
Naissance (jour, mois, année) : <u>17 04 01</u>	Sexe : F <input type="checkbox"/> M <input checked="" type="checkbox"/>
Domicile : Rue : <u>Avenue des Peupliers 14</u>	N° Postal <u>1003</u> Localité : <u>Lausanne</u>
Origine [Ville]: <u>Lausanne (VD)</u>	Nationalité (pays) : <u>Suisse</u>

Autorité parentale

Père	Mère
Nom : <u>Demierre</u>	Nom : <u>Demierre</u>
Prénom : <u>François</u>	Prénom : <u>Christine</u>
Adresse : <u>Avenue des Peupliers 14</u> <u>1003 Lausanne</u>	Adresse : <u>Avenue des Peupliers 14</u> <u>1003 Lausanne</u>
Téléphone : <u>021 432 25 34</u>	Téléphone : <u>021 432 25 34</u>
Profession : <u>Architecte</u>	Profession : <u>Responsable Marketing</u>
Nombre d'enfants : <u>2</u>	Nombre d'enfants: <u>2</u>

Classe : <u>801</u>	Salle de classe : <u>302</u>	Maître de classe : <u>Dominique Dubois</u>
Etablissement : <u>Grand-Pré</u>		
Parcours : Promotion <input type="checkbox"/> Maintien <input checked="" type="checkbox"/>		

Moyennes Annuelles Finales

	Notes requis	Notes obtenue
Français ¹	4	4
Allemand ¹	4	4
Mathématiques ¹	4	3.5

¹ En fin de 8P, pour le français, l'allemand et les mathématiques, la moyenne annuelle finale est déterminée par le résultat de l'ECR (à la hauteur de 30%) et par la moyenne annuelle décimale (à la hauteur de 70%)

BILAN

Protocole des propositions du (des) maître(s) responsable(s)


Etablissement : Grand-Pré
Classe : 8'01

Maître(s) responsable(s) : Dominique Dubois

Parcours	Promotion	Maintien
1 Bryan Knoll	<input type="radio"/>	<input checked="" type="radio"/>
2 Louis Demierre	<input checked="" type="radio"/>	<input type="radio"/>
3 Cindy Bétrisey	<input checked="" type="radio"/>	<input type="radio"/>
4 Enzo Grognoz	<input checked="" type="radio"/>	<input type="radio"/>
5 Capucine Rochat	<input checked="" type="radio"/>	<input type="radio"/>
6 Charlotte Mahault	<input checked="" type="radio"/>	<input type="radio"/>

Français	Allemand	Mathématiques
4	4	3.5
6	5	5.5
4	3.5	4.5
4.5	4	4
5.5	6	5.5
5.5	5.5	5.5

Lieu et date : 13/06/13, Lausanne

Le(s) maître(s) responsable(s) : 

Restitution of information:

Maintenant, rappelez-vous des informations que vous avez eues à propos des élèves.

Rapportez le maximum d'informations que vous avez retenu dans le tableau ci-dessous sur les six élèves qui vous ont été présentés.

	Nombre de frères et soeurs	Statut scolaire de l'élève (Promu ou non promu ?)	Prénom d'un des parents	Profession d'un des parents	Moyenne générale de l'élève
Bryan Knoll					
Louis Demierre					
Enzo Grognuz					
Cindy Bétrisey					
Capucine Rochat					
Charlotte Mahault					

Socio-demographic questions:

Merci de répondre à ces quelques questions à propos de vous.

Sexe : () Féminin () Masculin Année de Naissance :

Filière d'Etude :

Année d'Etude :

Langue Maternelle :

Nationalité(s) :

Veillez indiquer le diplôme le plus élevé de votre mère:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer le diplôme le plus élevé de votre père:

- Sans Diplôme
- Diplôme de fin d'études obligatoires
- Diplôme Certificat Fédéral de Capacité (Apprentissage professionnel ou équivalent)
- Diplôme d'une école de commerce ou de culture générale
- Diplôme de Maturité (ou baccalauréat, ou équivalent)
- Diplôme universitaire

Veillez indiquer la profession exercée par chacun de vos parents (essayez d'être le/la plus précis(e) possible):

Mère :

Père :

Bénéficiez-vous d'une bourse pour vos études?

- Oui, car mes parents ont un revenu assez bas
- Oui, pour une autre raison
- Non

Quelle était votre moyenne générale à la maturité (ou équivalent baccalauréat)

.....

Avec tous nos remerciements pour votre participation !

Experiment 3.1

2. Social Disorder (Manipulation)

BILAN

Protocole des propositions du (des) maître(s) responsable(s)


Etablissement : Grand-Pré
Classe : 8101

Maître(s) responsable(s) : Dominique Dubois

Parcours	Promotion	Maintien
1 Bryan Knoll	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Louis Demierre	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Cindy Bétrisey	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Enzo Groguz	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Armand Rochat	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Charlotte Mahault	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Français	Allemand	Mathématiques
5.5	6	5
3.5	4.5	4
6	5.5	5
5.5	5.5	5.5
4.5	3.5	4
4	4	4

Lieu et date : Lausanne, le 13/06/13

Le(s) maître(s) responsable(s) : 

Experiment 3.2

I. High Academic Track (Manipulation)

Track manipulation:

Dans cette étude, nous nous intéressons aux particularités de différentes méthodes d'évaluation qui peuvent être utilisées par les enseignants dans leurs classes.

Nous vous demandons d'imaginer que vous êtes **enseignant(e) de français** pour une classe de **9^{ème} en voie pré-gymnasiale**

(Pour rappel : après l'entrée en vigueur de la Loi sur l'Enseignement Obligatoire, le collège se divise en voie générale et voie pré-gymnasiale. Après l'entrée en vigueur d'HarmoS, la 7ème est maintenant la 9ème).

Nous allons vous demander de corriger une copie selon une méthode d'évaluation particulière. Prenez bien connaissance de cette méthode pour pouvoir ensuite l'utiliser

Experiment 3.2

2. Low Academic Track (Manipulation)

Track manipulation:

Dans cette étude, nous nous intéressons aux particularités de différentes méthodes d'évaluation qui peuvent être utilisées par les enseignants dans leurs classes.

Nous vous demandons d'imaginer que vous êtes **enseignant(e) de français** pour une classe de **9^{ème} en voie générale**

(Pour rappel : après l'entrée en vigueur de la Loi sur l'Enseignement Obligatoire, le collège se divise en voie générale et voie pré-gymnasiale. Après l'entrée en vigueur d'HarmoS, la 7ème est maintenant la 9ème).

Nous allons vous demander de corriger une copie selon une méthode d'évaluation particulière. Prenez bien connaissance de cette méthode pour pouvoir ensuite l'utiliser
