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Author

Odgers, Candice L

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Income Inequality and the Developing Child: Is It All Relative?

Candice L. Odgers

Abstract

Children from low-income families are at heightened risk for a number of poor outcomes, including depression, antisocial behavior, poor physical health and educational failure. Growing up in poverty is generally seen as toxic for children’s development. However, less is known about how the “economic distance” between children and their peers influences behavior and health. This paper examines how *both* poverty and the growing divide between low-income children and their peers may be influencing low-income children’s life chances. Among wealthy nations, children growing up in countries with higher levels of income inequality consistently fare worse on multiple indices of health, educational attainment and wellbeing. Although evidence has been mixed, new research suggests that low-income children may be experiencing worse outcomes, and a form of “double disadvantage”, when they live and attend school alongside more affluent versus similarly positioned peers. The role that subjective social status (SSS) may play in understanding why some low-income children appear to be suffering in the shadow of wealth is explored, alongside a call for additional research focused on how children come to understand, and respond to, their perceived social status.

Keywords

poverty; income inequality; subjective social status; relative deprivation; child and adolescent development; mental health; well-being; education

The life chances of children depend heavily on the resources that are present in both the family and the zip code that they are born into (Leventhal & Brooks-Gunn, 2000; Marmot et al., 2008). The graded effects of socioeconomic status (SES) on health emerge prior to birth and have been observed well into adulthood (Bradley & Corwyn, 2002). Growing up in poverty is known to have particularly toxic effects on children (Brooks-Gunn & Duncan, 1997; Yoshikawa, Aber, & Beardslee, 2012). However, we know much less about the role that income inequality, or the “economic distance” between children and their peers, plays in the lives of young people.

Understanding the effects of both poverty and income inequality on children’s development is important as approximately one in five – or 4.7 million – children in the United States are currently living in families with incomes below the federal poverty threshold (Jiang, Ekono, & Skinner, 2015). At the same time, the divide between the rich and the poor in the US and elsewhere is growing rapidly. Income inequality has been steadily increasing since the 1970s

(Gardiner, 1997; Jenkins, 1995) with the gap between the richest and poorest individuals in the US increasing by 40% to 50% over the last four decades (Duncan & Murnane, 2011). In a 2013 speech on economic mobility, President Obama labeled income inequality as the “defining problem of our time” and the question of whether low-income children are able to find a “path out of poverty” has become a topic of intense interest for researchers and policy-makers alike (Chetty & Hendren, 2015). Unfortunately, we currently know very little about how the growing distance between the rich and the poor is seen and experienced through the eyes of a child positioned on the bottom rungs of the income ladder.

Understanding how low-income children are influenced by *both* poverty and income inequality is important for the following reasons. First, cross-national comparisons indicate that children (Pickett & Wilkinson, 2007), adolescents (Elgar et al., 2015), and adults (Pickett & Wilkinson, 2010) all suffer worse outcomes when they grow up in countries with higher versus lower levels of income inequality. Moreover, disparities in mental and physical health appear to be amplified in countries with high versus low levels of income inequality (Elgar et al., 2015). Wilkinson and Pickett (2009) have famously made the point that high levels of inequality in a society are bad for everyone. However, income inequality appears to be especially harmful for young people at the lowest ends of the income distribution as they both fare worse, and are subject to greater disparities, in their health outcomes (Elgar et al., 2015).

Second, new evidence suggests that low-income children who grow up alongside more affluent neighbors and peers may suffer from a type of “double disadvantage” in that they have been shown to experience more mental health problems, poorer educational attainment (e.g., Crosnoe, 2009) and worse behavior (e.g., Odgers, Donley, Caspi, Bates, & Moffitt, 2015) than their low-income peers living/attending school in concentrated disadvantage. Notably, not all studies have supported the finding that low-income children do worse when they grow up in the shadow of wealth (e.g., Chetty, Hendren, & Katz, 2015; Martens et al., 2014; Schwartz, 2010). For example, a recent reanalysis of data from the Moving to Opportunity (MTO) Study has provided many with renewed hope that growing up in better quality neighborhoods can positively impact the adult earnings of low-income children, provided that children are moved out of high-poverty settings prior to adolescence (Chetty et al., 2015). In short, research in this area has been mixed. Nonetheless, evidence that some low-income children may be faring worse in neighborhoods and schools with relatively high concentrations of middle-to-high income peers challenges a commonly made assumption in policy and practice that low-income children will automatically benefit from access to lower-poverty neighborhoods and schools.

Third, with each step up the income ladder health and wellbeing have been shown to improve (Adler et al., 1994; Chen & Paterson, 2006; Marmot, 2004). The robustness of the SES-gradient, even after controlling for objective SES, and among relatively affluent groups, suggests that how individuals perceive their relative standing may also play a role in explaining the strong SES-health connection. Interestingly, individual’s perceptions of their social status, referred to as subjective social status (SSS), often emerges as a stronger predictor of health than objective SES (Singh-Manoux, Adler, & Marmot, 2003). Most prior research has examined SSS among adults, with a more recent focus on how SSS evolves

across adolescence (Goodman, 2001, 2007) and is related to mental and physical health during this time (Quon & McGrath, 2014). Very little attention has been paid to the role of SSS in children, in part because children may not yet fully understand and/or be able to articulate their perceived social status. Nonetheless, social hierarches are known to emerge very quickly among children, can be reliably indexed by observers, and predict a wide range of physiological, social and emotional outcomes (Boyce et al., 2012). These dominance hierarches are tied closely, albeit not exclusively, to family SES and their reliable presence in early childhood raises the question of how children's rank within these settings relates to their later SSS.

This paper highlights research documenting how the economic distance between low-income children and their peers within countries, neighborhoods and schools may influence their mental health and wellbeing. In doing so, two key questions are addressed: 1) do low-income children experience a form of "double disadvantage" when they live and attend school alongside more affluent peers? And, 2) how is poverty seen and felt among low-income children? That is, when, and to what extent, are children first able to understand, articulate and "feel" their perceived social status?

Children embedded in countries, states and (sometimes) schools with high income inequality experience worse outcomes than their peers in more egalitarian settings

Children and adolescents who grow up in countries with higher versus lower levels of income inequality are more likely to suffer from a wide range of poor outcomes (Elgar et al., 2015; Pickett & Wilkinson, 2007). In a recent report, the United States and United Kingdom ranked at the bottom of 23 rich nations on indices of both income inequality and average child and youth wellbeing. A strong linear association between income inequality within each country and child wellbeing was observed, such that as income inequality increased, young people's wellbeing decreased (Pickett & Wilkinson, 2007). A similar story has emerged in studies focused on adolescents' psychological and physical health. A survey of approximately 500,000 adolescents (aged 11–15), drawn from across 34 North American and European countries, found that adolescents in countries with higher levels of income inequality were, on average, less physically active, more likely to be overweight, less satisfied with their lives, and experiencing more physical and psychological symptoms (Elgar et al., 2015). The gap between the least versus most well-off adolescents was largest in countries with the highest levels of income inequality, suggesting that country-level income inequality is associated with both worse outcomes and greater health disparities among young people. These findings align with other research illustrating that a wide range of problems associated with relative deprivation, including morbidity, obesity, teenage birth rates, school bullying, mental illness, social cohesion and children's educational performance are more prevalent in unequal societies (Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009; Wilkinson & Pickett, 2007).

In a related set of cross-setting comparisons using data drawn from eight wealthy nations, relative disadvantage – that is, how much lower an individual is positioned relative to those

in the same school and region – was more strongly associated with psychological (e.g., irritability, feeling low) and somatic symptoms (e.g., sleeping difficulty, headaches) than was an inventory of the families' assets (i.e., objective affluence) (Elgar et al., 2013). In this study, relative deprivation continued to predict adolescents' symptoms after controlling for objective affluence, and relative deprivation was more predictive of mental health among adolescents with the lowest levels of affluence. Within the United States, differences in income inequality across states has also been shown to predict important health outcomes for children, including preterm birth, low birth rate and infant mortality (Olson, Diekema, Elliott, & Renier, 2010) as well as teenage pregnancy and school drop-out among adolescents (Kearney & Levine, 2011).

A meta-analysis of 155 papers (168 analyses) provides relatively strong support for the claim that higher income inequality has a negative influence on population health, with 70% of the reviewed studies “wholly” or “partially” supporting this finding (Wilkinson & Pickett, 2006). Across studies, the estimated effects of income inequality on population health were less consistent as the size of the unit being examined decreased from larger areas, such as whole countries, states, and large metropolitan areas, to smaller units of observation, such as census tracts, counties or parishes (Wilkinson & Pickett, 2006). Notably, fewer studies have been conducted with children and adolescents, and more research is needed to understand the extent to which such between country and state-level findings are driven by compositional effects (e.g., differences in ethnic composition or political ideology), and whether exposure to inequality may operate differently across country, state and more local (e.g., neighborhood and school) levels. However, taken together, income inequality, at both the national and more local levels, appears to be a key marker of poor child and adolescent health.

Do low-income children suffer a form of “double disadvantage” when they grow up alongside more affluent peers and neighbors?

A commonly proposed solution for offsetting the toxic effects of poverty on children has been to encourage the creation of economically mixed neighborhoods and schools. In theory, the creation of economically mixed settings should provide low-income families with access to higher quality educational experiences, more prosocial peers and enhanced safety, all of which should improve child outcomes. In practice, very little is known about whether policies designed to create economically-mixed communities have achieved their intended effects (Cheshire, 2012). Similarly, within educational settings, results have been mixed as to whether, for example, school voucher programs designed to provide low-income children with access to better quality schools have improved educational outcomes (Ladd, 2002). Economically-mixed versus high-poverty settings should offer increased safety and better physical living conditions (Evans, 2004). But what does it take for a child from a low-income family to thrive and feel as though they belong in these communities? Can low-income children realize the promise offered by better schools and neighborhoods from the bottom rung of the income ladder?

Recently, we tested whether low-income children would benefit from living in more affluent neighborhoods. Children (n=1,600) living in urban and suburban areas of England and

Wales participating in the Environmental Risk (E-Risk) Longitudinal Twin Study were followed from birth to age 12. We conducted intensive home assessments, surveyed teachers and neighbors, and collected additional data including census information and parent reports. Google Street View images were used to gauge neighborhood conditions within a half-mile radius of each child's home. We examined this question in the British context, as economically mixed neighborhoods have a long history in Britain and, as a result, the low-income children in our study lived across a diverse range of neighborhoods, ranging from those characterized by concentrated poverty (18% of the low-income children lived in concentrated poverty) to neighborhoods where the vast majority of residents were middle-to-upper class. In the end we found that low-income boys living alongside more affluent neighbors engaged in more antisocial behavior across childhood, including lying, cheating, stealing, and fighting than their low-income peers growing up in concentrated poverty (Odgers et al, 2015).

These findings were troubling as children who engage in persistent antisocial behavior are also at heightened risk for later mental health problems, use of illegal substances, school dropout, and even emergency visits (Moffitt, Caspi, Harrington, & Milne, 2002; Odgers et al., 2008). For low-income girls, there was no evidence that the relative wealth of their neighbors influenced behavior (Odgers et al., 2015). Similar results have been documented among the close to 8000 children from the Millennium Cohort Study in England where low-income children reported engaging in more conduct problems when they lived in more "socially fragmented" communities, that is, in communities where neighbors were more dissimilar from each other (Flouri, Midouhas, Joshi, & Sullivan, 2015). Other research has shown that residents living in economically and demographically diverse neighborhoods are less likely to develop high levels of collective efficacy and social cohesion (Kawachi & Kennedy, 1997). A lack of cohesion among neighbors has also been directly linked to children's mental health (e.g., Xue, Leventhal, Brooks-Gunn, & Earls, 2005), while high collective efficacy among neighbors has been shown to buffer the negative effects of poverty for low-income children at school entry (Odgers et al., 2009).

Do our findings in Britain generalize to how low-income children in the United States and elsewhere may fare when they grow up alongside more affluent peers?

Unfortunately, there is evidence that our findings related to the "shadow of wealth" may generalize beyond Britain. For example, Crosnoe (2009) reported that low-income students drawn from across the U.S. as part of the Adolescent Health Study did worse in math and science, and also reported more psychosocial problems, when they attended schools that had higher proportion of students from middle and high-income families. Low-income minority versus non-minority children who attended school with more affluent peers were the most negatively affected. Notably, not all studies have documented this effect. For example, a recent study of low-income families in Canada reported that children living in public housing units had better health and educational outcomes when their housing unit was in a wealthier neighborhood (Martens et al., 2014). Similarly, evidence from a quasi-experimental study in Montgomery County, Maryland has shown that low-income students, who were able to attend low-poverty schools due to inclusionary zoning policies, performed 8 points (0.4 s.d.) higher at the end of elementary school than their public

housing counterparts who were enrolled in moderate-poverty schools (Schwartz, 2010). The Maryland study is unique in that researchers were able to approximate random assignment to lower versus higher poverty schools due to zoning policies that were unrelated to characteristics of the families; thus, for younger children (versus the older children followed in the Adolescent Health Study), there is some compelling evidence that exposure to lower-poverty schools may boost educational performance during the elementary school years.

Of course, without an experimental study, it is impossible to say that exposure to more affluent neighbors or peers *caused* low-income children to do better or worse in these settings. The Moving to Opportunity (MTO) Study tried to overcome this problem by randomly assigning housing vouchers to move families out of high poverty neighborhoods. Unfortunately, for behavioral problems, the long-term evaluation of the MTO experiment tells a similar story to ours. That is, ten to fifteen years on, the boys in the study whose families were offered the housing vouchers were suffering from higher rates of mental health problems and engaging in more antisocial behavior than their peers in the control group (Kessler et al., 2014). With that said, the MTO intervention appeared to reduce both depression and conduct disorder among girls (Kessler et al., 2014) and has some documented positive impacts on physical health (Ludwig et al., 2011) and wellbeing (Ludwig et al., 2012).

Among females from the MTO Study whose families were offered a move out of poverty, reductions in female fear were documented alongside improvements in mental health, suggesting that the reduced exposure to violence in their new lower-poverty communities was conferring benefits for girls (Popkin, Leventhal, & Weismann, 2010). Qualitative interviews with a subset of the study members also suggested that girls in the experimental condition were more likely than their male counterparts to view their new neighborhoods positively (e.g., girls often described the streets as “quiet and safe”, whereas the boys described them as “boring”) and were more likely to report being accepted by their new community (e.g., with boys in the experimental condition reporting increased police surveillance and suspicion from neighbors in their new neighborhoods) (Clampet-Lundquist, Edin, Kling, & Duncan, 2011). In the most recent analysis of the MTO Study data, Chetty and colleagues (2015) reported that for children who were older at the time that their family was offered the chance to move (between 13 and 18 years of age), there were statistically insignificant or slightly negative effects on their earnings as adults. However, for children whose families moved at younger ages, positive effects on adult earnings were documented among both boys and girls, and across children from all different ethnic backgrounds.

Taken together, the findings from these studies suggest that there is a significant amount of variability in whether, how and when low-income children may be influenced by living and attending school alongside more affluent peers. The lack of a uniformly positive message about how economically mixed settings, or a move out of poverty, can improve the life chances of low-income children has been a source of debate and frustration among researchers and policy-makers for decades. The growing economic distance between low-income children and their peers introduces yet another reason to understand the conditions under which low-income children may thrive – or not – in more affluent neighborhoods and schools.

There are a number of reasons why the social and economic distance between low-income children and their peers may be associated with worse outcomes for low-income children. Some argue that inequality at the national level serves as a proxy for the (un)willingness of citizens to invest in infrastructure and policies that are health promoting. At the neighborhood level, others have made the case that social cohesion and strong networks are less likely to form as the social and economic distance between neighbors increases (Kawachi & Kennedy, 1997). At the individual level, unfavorable social comparisons with more affluent peers is believed to lead to negative self-evaluations and disengagement among low-income children. This type of relative-comparison or social-position hypothesis has been widely studied among adults (Kawachi, Kennedy, & Wilkinson, 1999). However, less attention has been paid to how subjective evaluations of social status made by children and adolescents influence behavior and health. In the next section, the developmental evolution and role of subjective social status (SSS) in determining child and adolescent health is reviewed, while highlighting the need for more research by psychologists and others this area.

Is it all relative? How do children perceive their social status and when does it matter?

Most prior research has focused on the *direct effects* of material deprivation on children's development as well as the *indirect consequences* of economic hardship via increasing, for example, stress and family conflict (Evans, 2004; McLoyd, 1998). Another complimentary perspective on why socio-economic position is such a robust determinant of children's wellbeing is that *feeling poor* in relation to others leads to a series of negative comparisons, self-evaluations, and outcomes, or what Marmot (2004) has referred to as the "status syndrome". One of the critical insights from decades of work on the SES-gradient in health is that improved health is observed at each step up the ladder and that SES effects on health are not driven only by differences between poor versus non-poor individuals (Adler et al., 1994). The SES-gradient in health exists even at the highest levels of income, where access to high quality food, healthcare and other health promoting assets are well above the minimum threshold for good health, suggesting that how people perceive their position relative to others may also influence health. Importantly, subjective social status (SSS) typically predicts health and wellbeing even after controlling for objective measures of income. For example, a large scale study of over 50,000 adults, drawn from 18 countries, demonstrated that SSS independently predicted 16 different types of mental disorders, including bipolar disorder and depression (Scott et al., 2014). In this study, effect of SSS on mental health was strongest in countries with higher levels of income inequality, suggesting that social disparities are amplified in settings where the economic distance between groups is large.

Why does SSS matter?

A number of perspectives from across disciplines converge on the idea that unfavorable upward social comparisons can negatively shape internal attributions, behavior and health. For example, the relative position hypothesis (Kawachi & Kennedy, 1999; Wagstaff & Van Doorslaer, 2000; Wilkinson & Pickett, 2010) posits that unfavorable social comparisons and

subsequent increases in stress, negative emotions and disengagement, subsequently, lead to worse health and behavior. The related “frog-pond” perspective in sociology has been applied to illustrate how equally able students have lower self-concept (Marsh & Hau, 2003) and lower future achievement and educational attainment (Marsh et al., 2008) when they attend higher versus lower performing schools. By extension, some have hypothesized that low-income students may perform worse when they attend schools with greater numbers of middle versus low-income students due to the greater competition for educational resources and increased risk for stigmatization within these settings (Crosnoe, 2009).

How strongly a child identifies as “poor” or as belonging to a low-income group, may also play a role in shaping her behavior and health. Stereotype threat – that is, risk of conforming to negative stereotypes about the group that an individual identifies with – has repeatedly been shown to negatively influence behavior, health and educational performance when membership with the group is made salient. Stereotype threat has been primarily studied in relation to racial and gender identity (Steele, 1997). However, experimental studies have demonstrated that socioeconomic based stereotype threat can influence students’ test performance and self-confidence (Croizet & Claire, 1998; Spencer & Castano, 2007). Thus, when low-income children’s settings are structured to make their social class more salient they may be more likely to conform to negatively held stereotypes (e.g., being a “super minority” among high income peers or experiencing class-based exclusion in daily life, such as being required to enter through a “poor door” – a separate entrance for lower-rent paying tenants - in some new mixed income housing developments). The conditions under which SES-related stereotype threat influences the behavior and health of young people are not well known. Additional research is required to test what features of economically mixed settings may minimize or exacerbate stereotype threat across development. More generally, and as described in the next section, the developmental evolution of SSS is just now beginning to be understood.

The emergence and developmental course of SSS

Among children and adults, SES is a robust predictor of most mental and physical health outcomes; however, these associations become less powerful and consistent during adolescence (for a review see: Hanson & Chen, 2007). Adolescents are rapidly acquiring a more self-determined sense of their place in the world and, in part, their shifting self-concept related to social stratification is believed to disrupt the stable prediction of family-based SES assessments (Glendinning, Love, Hendry, & Shucksmith, 1992). Adolescence may be an especially sensitive time for the effects of subjective social status to be felt as approval by peers and peer group status becomes increasingly salient during this time (Steinberg & Morris, 2001).

Until relatively recently, SSS was not widely studied among young people. Goodman and colleagues (2001) helped to generate a new wave of research on this topic by adapting the widely used MacArthur Subjective Social Status Scale (“ladder”) for use with adolescents. Their subsequent work mapped the developmental evolution of SSS, illustrating how perceptions of social stratification mature and become more accurately calibrated across adolescence (Goodman, Huang, Schafer-Kalkhoff, & Adler, 2007). More specifically, the

authors illustrated that young people tend to overestimate their relative position in early adolescence; however, over time, their views begin to stabilize and gain predictive power. In this four year longitudinal study of over 1000 adolescents, SSS was predicted by multiple social factors (e.g., age, race, objective SES) many of which changed in their predictive value over time. SSS was also a more powerful predictor of adolescents' self-reported health than objective SES. However, a number of unexpected relationships were observed across ethnic status and SES (Goodman et al., 2007), further reinforcing the need to attend more closely to issues related to race, ethnicity, and SES in future work (Wolff, Acevedo-Garcia, Subramanian, Weber, & Kawachi, 2010).

We are now learning important lessons about how adolescents' views of their social status may influence their behavior and health. First, similar to adults, SSS is associated with a broad array of health outcomes during adolescence. A 2014 meta-analysis compiled findings from across 44 studies and concluded the adolescent's SSS consistently predicted a number of mental and physical health outcomes, with the largest effects observed for mental and self-reported health, while non-significant effects tended to be found in studies examining biomarkers and substance-use behaviors (Quon & McGrath, 2014). This pattern of findings raises the question of how much of the association between SSS and health outcomes is driven by shared method variance (e.g., the use of self-reported SSS and health indicators) versus the effects of SSS *per se*. Additional research using multi-informant and multi-method assessments, without a sole reliance on self-reported information, is required to address this potential confound.

Second, again similar to adults, adolescents' SSS often uniquely predicts mental health outcomes after controlling for objective measures of social status. For example, among adolescents drawn from the National Comorbidity Study (n= 904 adolescents aged 13 to 17 years), perceptions of social status were strongly associated with multiple types of mental health problems, including mood disorders, anxiety disorders, behavioral disorders and substance use disorders. SSS was also a stronger predictor of adolescents' mental health than multiple measures of objective and relative SES status (including tract-level inequality and measures of relative deprivation referencing the economic distance between the adolescents and those in their census tract) (McLaughlin, Costello, Leblanc, Sampson, & Kessler, 2012)

Third, adolescents' views of their social status have been associated with feelings of optimism, self-esteem and perceived control (Chen & Paterson, 2006) all of which are believed to be important factors influencing wellbeing and behavior. Adolescents' SSS may also play an important role in predicting key mediators of educational outcomes, as lower feelings of SSS have been associated with increased depressive symptoms and, in turn, lower academic achievement (Destin, Richman, Varner, & Mandara, 2012). The authors describe these types of downstream effects of SSS on educational performance as a way in which adolescents may "feel" the hierarchy within their settings. SSS has also been linked closely to one's sense of self, which is known to influence motivation and goal-directed behavior (Oyserman & Destin, 2010). More recently, Sweeting and Hunt (2014) have illustrated the importance of including SSS measures that specifically capture adolescents' perceived ranking with their school environments, as these context specific measures of

status have been uniquely predictive of adolescents' educational outcomes and mental health.

To summarize, views of SSS are believed to emerge during adolescence and become more reliably calibrated over time. Similar to research with adults, adolescents' SSS appears to be a robust predictor of a wide range of mental health and educational outcomes, with less consistent evidence of effects for more objectively measured biomarkers and indicators of health status. Future research examining the evolution and role of SSS in diverse populations (e.g., Brown et al., 2008; Sanders-Phillips, Settles-Reaves, Walker, & Brownlow, 2009), employing alternative measures of SSS tailored for specific contexts (e.g., Sweeting & Hunt, 2014), and employing experimental paradigms (e.g., Kudrna, Furnham, & Swami, 2010) is needed. More specifically, there is a need to: (1) identify when children and adolescents are first able to understand and convey their perceptions of their social position, and (2) evaluate what effect, if any, setting level inequality has on young people's subjective social status and mental health.

Social hierarches and perceived social status among children

We know very little about younger children's SSS – perhaps because children are not yet able to perceive or reliably report on where they see themselves in the SES hierarchy. Instead, psychologists have relied on observer based rating schemes to rank children within social hierarchies. Observational studies within classrooms illustrate that social hierarchies establish themselves very early and quickly (Boyce, 2004). Within weeks of Kindergarten entry, trained observers can reliably rank children on social dominance hierarches which, in turn, predict a number of physiological and mental health outcomes (Boyce et al., 2012). Interestingly, how well a child's position in the hierarchy predicts their health and behavior has been shown to depend on how egalitarian versus hierarchical the classroom setting is. In classrooms where teachers adopted more egalitarian practices, the association between a child's position on the hierarchy and their outcomes was weakened.

SES has been strongly, albeit not perfectly, related to children's position in the social hierarchy and there is evidence that low SES magnifies the adverse effects of social subordination (Boyce et al., 2012). Low-income individuals, including children, have also been shown to experience similar situations as more stressful than their more well-resourced peers and are more likely to perceive an ambiguous situation as threatening (for a review see: Matthews, Gallo, & Taylor, 2010). In addition, low-income children's (ages 8–10) heightened perception of threat in ambiguous situations has been shown to partially mediated the effect of low-SES on cardiovascular reactivity to stress (Chen & Matthews, 2001). Thus, even before low-income children are able to reliably report on their SSS, they may be exhibiting heightened responses to stressors and perceived status-related threats in their settings.

Very young children are not yet able to conceptualize or articulate their rank within a social hierarchy. However, between the ages of four and six, children begin to vocalize and demonstrate an understanding of the concept of fairness in the distribution of resources. When both implicit and explicit measures are used, children as young as three years of age have been shown to both notice and reactive negatively to inequality (LoBue, Nishida,

Chiong, DeLoache, & Haidt, 2011), with some studies suggesting that even infants in the second year of life possess context sensitive expectations that are relevant to fairness (Sloane, Baillargeon, & Premack, 2012). Thus, although children may not explicitly talk about fairness until the age of five or six, there is evidence that unfair treatment and inequality in the distribution of age-relevant resources is both *understood* and *felt* earlier in development.

Conclusions

The economic distance between low-income children and their peers is increasing rapidly. We know a great deal about how poverty effects children. However, less is known about how the growing “economic distance” between low-income children and their peers may influence development. This paper highlighted three sets of issues to consider as we work to understand the potential effects of income inequality on the developing child. First, in countries and states with higher levels of income inequality children and adolescents are faring worse across a wide range of outcomes, including physical health, psychological wellbeing and educational attainment (Elgar et al., 2009; Elgar et al., 2015; Pickett & Wilkinson, 2007). Causal inference is limited as inequality cannot be randomly assigned. However, the graded association between income inequality and child health has been attributed to one of more of the following mechanisms: (a) *social stratification and structural factors*, whereby societies where income disparities are larger tend not to invest as heavily in infrastructure and programs that promote health among children as do more egalitarian societies, (b) *social mechanisms*, whereby greater inequality in a society is associated with increased inter-group conflict, less social cohesion and trust, and feelings of inequality, powerlessness and distrust among community members, and (c) *subjective social status*, that is due to the way that individuals within unequal societies and settings internalize or “feel the hierarchy” based on social comparisons.

Second, although not a uniform finding, there is emerging evidence that low-income children may be suffering from a form of “double disadvantage” when they grow up alongside more affluent peers. That is, across a number of studies, low-income children who lived or attended school alongside more affluent versus similarly positioned peers were more likely to experience worse mental health, behavior and educational performance (e.g., Crosnoe, 2009; Flouri et al., 2015; Kessler et al., 2014; Odgers et al., 2015). These findings are important to consider in light of the widely held assumption in policy and practice that low-income children will automatically thrive if placed in more affluent schools and communities. Such findings should not be interpreted to mean that that the rich and poor should live apart. Economically-mixed communities may be rightfully viewed as a socially just remedy to growing inequalities, and there are examples of where these settings appear to provide benefits to low-income children (e.g., Martens et al., 2014; Schwartz, 2010). However, these mixed results do remind us of the need to check our assumptions against objective data and to consider whether additional supports may be needed for low-income children to thrive in these settings.

Third, with respect to subjective social status, most of the research to date has been directed at adults, with an increasing focus on the developmental course and determinants of SSS

among children and adolescents. Among children, social hierarches have been shown to develop early, quickly and with important effects on immediate and life-long health and behavior (Boyce, 2007). Children's ranking in these hierarchies has been strongly, but not perfectly, correlated with SES and, the effects of social subordination in small settings, such as kindergarten classrooms (Boyce et al., 2012), seems to parallel what we find in comparisons across nations. That is, the effect of one's social ranking on health can be amplified or dampened depending on how equalitarian versus hierarchical the setting is, providing another example of how society can get "under the skin" early in life (Hertzman & Boyce, 2010). Moving forward, advances in psychological science are required to isolate: (a) the age at which children begin to internalize SES-based rankings and hierarchies, (b) how perceptions of social status evolve from childhood to adulthood, and (c) the effects of SSS across development and among diverse populations.

It has been argued that inequality is bad for everyone. However, low-income children and adolescents appear to be especially vulnerable when they are embedded in unequal nations, states, neighborhoods and classrooms. Psychological science has been largely silent on this issue, but has a great deal to contribute to our understanding of how children come to understand and respond to their perceived and observed ranking in the social and economic hierarchy. Both scientists and policy-makers require a better understanding of how the increasing distance between the rich and the poor is seen and experienced by children, especially by those positioned at the bottom of the SES ladder.

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