Chapter 21
Resilience for Whom? Insights from COVID-19 for Social Equity in Resilience

A. R. Siders and Logan Gerber-Chavez

Abstract The novel coronavirus (COVID-19) pandemic highlights the social equity concerns inherent in system-wide concepts of 'community resilience.' Resilience of the collective may overlook or even be achieved at the expense of the resilience of populations within the community. COVID-19 is inequitable with respect to exposure, severity, and response. It affects the ability of communities to respond to other challenges including natural hazards, mental health, and domestic violence. Resilience to the pandemic has proven to involve not only traditional metrics of public health and economic welfare but a wide range of concerns such as childcare and gender equity. The experiences of COVID-19, then, argue for a broad conceptualization of general resilience involving a wide range of issues but a narrow emphasis on individual experiences rather than community-level metrics. The pandemic could exacerbate inequalities if powerful or privileged groups leverage resources not available to all members of the community to maintain personal resilience. Pandemics and other slow-onset or aggregate hazards have historically had little influence on policy, but the global, long-term nature of COVID-19 and collective nature of responses such as lockdowns create potential for powerful individuals to pursue social reforms that will benefit all and lead to true community-wide resilience.

Keywords Social equity · Equitable resilience · Community resilience · COVID-19

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I. Linkov et al. (eds.), *COVID-19: Systemic Risk and Resilience*, Risk, Systems and Decisions, https://doi.org/10.1007/978-3-030-71587-8_21

21.1 Introduction

The novel coronavirus (COVID-19) pandemic has highlighted social justice and equity concerns in ways that invite re-consideration of community resilience, not as a relationship between system and hazard but as the ability of all individuals within a social system to thrive in the face of uncertainty and change. This re-framing requires a broader conceptualization of both the system, which is to be resilient, and the disturbance to which it is responding: the 'of what to what' described by Carpenter et al. (2001). It also requires explicit consideration of the question 'for whom.' A narrow response to these prompts is likely to overlook important aspects of equity, as COVID-19 is currently demonstrating.

Disaster scientists and practitioners know that disasters do not affect people equally and that response and recovery measures can exacerbate, rather than alleviate, social inequality (see, e.g., Douglas 2015; Howell and Elliott 2018; Siders 2018; Tierney 2006). Epidemiologists know similar patterns occur in pandemics. A 2008 study of influenza predicted that low-income and minority populations would have difficulty complying with social-distancing measures (Blendon et al. 2008), and Blumenshine et al. (2008) proposed that differences in social position (due to race, income, status) could cause disparities in exposure, sensitivity, and treatment that would result in unequal patterns of infection and mortality. These predictions were observed during the 2009 H1N1 influenza pandemic, when low-income people and people of color were more likely to be exposed and more likely to face complications and hospitalization (Quinn et al. 2011). Similar outcomes are being observed now in the COVID-19 pandemic (Lima et al. 2020; Mein 2020; Rogers et al. 2020; Timothy 2020).

The fact that repeated disasters and epidemics have not inspired social or policy change suggests that social inequity has a robust measure of resilience. In other words, it is resistant to change from external influences and likely to return to prior conditions once a stressor is removed. Narrow and conservative concepts of resilience can aggravate this tendency, as can behaviors by powerful and affluent populations who leverage their position and resources to preserve their own status quo (that is, to maintain their own resilience) rather than to transform social structures. By highlighting the connections between resilience and justice, the COVID-19 pandemic invites us to reconsider how we conceptualize community resilience and may provide an opportunity for transformation.

21.2 Contested Concepts of Resilience

Resilience is defined in many ways and at many scales (Walker and Cooper 2011; Aldunce et al. 2015; Hosseini et al. 2016; Keenan 2018). Ecological, engineering, and disaster concepts of resilience often emphasize the return of a system to pre-disaster conditions or maintenance of system traits (Holling 1973; Klein et al.

2003; Alexander 2013; Aldunce et al. 2015; Siders 2016). The United Nations International Strategy for Disaster Reduction, for example, defines resilience as the ability to "resist, absorb, accommodate to, and recover from the effects of hazards in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions" (UNDRR 2015).

Such conservative concepts of resilience, although useful in engineering and ecology, have been widely critiqued in their application to social systems because of their tendency to overlook power dynamics, social inequalities, and the potential benefits of transformation rather than preservation (Jerneck and Olsson 2008; Hayward 2013; MacKinnon and Derickson 2013; Matin et al. 2018). Maintaining the status quo means also maintaining the inequities present. Traits that resist change due to hazards may also resist change due to beneficial social movements. Although social definitions of resilience—frequently referenced as 'community resilience'—often allow for or encourage transformation, they struggle to distinguish between harmful changes—to be resisted—and beneficial transformations—to be promoted. Indeed, such distinction may be impossible in advance of change, but concepts of community resilience need to consider the potential for both adaptive and maladaptive outcomes.

Carpenter et al. (2001), in an effort to more clearly operationalize resilience, focused on the questions 'of what to what': what system is being resilient to what threat or change. Inherent in these questions are questions of scale. Ecological resilience could refer equally to the resilience of an ecosystem, a species, or an organism. It could address resilience to drought, pests, heat, frost, or a combination of the above. Similarly, social resilience can refer to a person, community, society, or humanity writ large, and could focus on the ability to rebuild damaged infrastructure, to maintain social ties or economic prosperity, or to display general resilience to change. Scale affects people's sense of equity and justice (Cooper and McKenna 2008), so defining the scale in question is critical for understanding or pursuing community resilience with equitable outcomes. Recognizing the importance of scale, the resilience literature often distinguishes between 'specific' resilience to a specific threat and 'general' resilience, a broader concept of community resilience, and notes that the two types of resilience may actually be in competition (investing in one may decrease the other) (see, e.g., Carpenter et al. 2012; Walker and Westley 2011). The COVID-19 pandemic has forced us to reconsider how we distinguish between specific and general resilience. That is, it requires us to reconsider how we define 'of what to what': whether our understanding of community resilience to the pandemic includes childcare and domestic violence or focuses on economic recovery for nations. Aspects of life such as childcare that are often deemed secondary or tangential concerns in disaster management have emerged in the pandemic as core issues.

21.3 Inequity in COVID-19 Pandemic

Although COVID-19 was initially hailed as the "great equalizer" for its potential to affect rich and poor, Black and white, the pandemic has shown itself to be as inequitable as other types of hazards (Kullar et al. 2020; Mein 2020; Timothy 2020) with respect to exposure, sensitivity, as well as response and recovery. In the COVID-19 context, exposure describes the likelihood of coming into contact with a disease (OSHA 2009); sensitivity refers to the severity of the disease and potential for unequal access to and quality of healthcare; and response and recovery includes the potential for protective measures to have unintended harmful consequences. Although we organize these as separate sections, there are significant interactions between elements.

21.3.1 Exposure

In the United States and United Kingdom, COVID-19 has disproportionately affected BIPOC (Black, Indigenous, and people of color) communities (Clark et al. 2020; Kullar et al. 2020; Mein 2020; Raisi-Estabragh et al. 2020; Rogers et al. 2020). Increased exposure appears to be related to factors such as employment, transportation, housing, and access to protective equipment. BIPOC individuals are less likely to have worked from home before the pandemic and more likely to work in an 'essential' field where they continue to interact in-person while other portions of the population shelter at home (Rogers et al. 2020). BIPOC individuals are also more likely to use public transportation, where social distancing and cleaning protocols are more difficult to maintain (Quinn et al. 2011). A survey by the American Public Transport Authority found that 31% of bus riders were Black and 21% Hispanic, despite representing only 13% and 17% of the population, respectively (Clark 2017). In New York City alone, by May 2020, 120 employees of the Metropolitan Transportation Authority had died from COVID-19 and nearly 4,000 had tested positive (Lancet 2020).

Low incomes can compound the challenges of employment and public transportation. Thirty percent of U.S. bus riders are from households with incomes below $15,000 and another 16% are from households making less than $25,000 (Clark 2017). For reference, the 2020 poverty rate in the United States is $12,760 for an individual and $26,000 for a household. A quarter of essential workers in the United States are estimated to come from low-income households (McCormack et al. 2020), and these workers may have few affordable alternatives to public transportation to reach their jobs. They may also face greater financial pressure to retain or obtain employment in essential fields, despite the risks. During the 2009 H1N1 pandemic, low-income workers were more likely to be employed in industries with high levels of in-person contact and limited sick leave (Quinn et al. 2011), and similar patterns appear to be present in the current pandemic.

Race intersects with other aspects of vulnerability that make BIPOC populations particularly at-risk (Crenshaw 1991). For example, Blacks account for 40% of the homeless population in the United States (HUD 2020), and homeless populations may face increased exposure to COVID-19 in crowded shelters (Lima et al. 2020; Tobolowsky et al. 2020). Similarly, Blacks are over-represented in U.S. prison populations (Monk 2019), and prison populations are particularly exposed to infectious diseases due to confined spaces, poor ventilation, and crowded facilities —threats that are present in prison populations worldwide (Gaillard and Navizet 2012; Le Dé and Gaillard 2017; Akiyama et al. 2020; Saloner et al. 2020). Prisons have been shown to be ill-prepared for multiple types of disasters, and COVID-19 does not appear to be an exception (Purdum and Meyer 2020).

Prisons demonstrate another aspect of COVID-19: how the pandemic has affected the ability of communities to respond to other natural hazards. For example, the spread of COVID-19 in California prisons has reduced the availability of inmates to fight wildfires, affecting the state's ability to address a severe fire season (Fuller 2020; Goodkind 2020). In other parts of the country, fewer people are volunteering to assist with sandbagging in preparation for floods or with debris clean up after storms or tornadoes for fear of being exposed to COVID-19 (see, e.g., Porter 2020; Reese 2020). Social distancing measures that improve resilience to the pandemic may simultaneously reduce resilience to other threats.

21.3.2 Sensitivity

COVID-19 affects some populations more severely than others. BIPOC individuals are more likely not only to contract COVID-19 but also to be hospitalized and to die of the disease or related complications (Akintobi et al. 2020; Kullar et al. 2020; Poteat et al. 2020; Rogers et al. 2020). Elderly people are more likely to have severe complications or higher mortality rates (Kang and Jung 2020) as are people with pre-existing conditions (Gold et al. 2020; Yang et al. 2020).

These are social justice and equity issues because social services (or lack thereof) contribute to the unequal distribution of these consequences. Chronic exposure to social and economic disadvantages may cause or exacerbate health issues and lead to disparities in health conditions, a phenomenon known as the 'weathering' hypothesis (Thomas 2006; Forde et al. 2019). Low-income and BIPOC communities experience higher rates of chronic medical conditions such as asthma that make COVID-19 even more severe (see, e.g., Beck et al. 2016). Additionally, chronic stress can produce wear and tear on the body, known as allostatic load (Thomas 2006), which can reduce the body's ability to combat new pressures, such as COVID-19.

BIPOC and immigrant populations are more likely to be living in multi-family or multi-generational housing, where physical distancing can be more challenging and elderly family members may be placed at greater risk from their working family members (Langellier 2020; Metzl et al. 2020). An estimated 18% of essential

workers live in a household with at least one member over the age of 65 and one member without health insurance (McCormack et al. 2020). Having health insurance has been clearly demonstrated to lead to better health outcomes (Bovbjerg and Hadley 2007), but access to affordable health care, is not even across the United States: BIPOC individuals are more likely to be uninsured (Berchick et al. 2019; Rogers et al. 2020).

21.3.3 Response and Recovery

Measures taken to prevent or recover from disasters can exacerbate social inequality (see, e.g., Douglas 2015; Howell and Elliott 2018; Siders 2018; Tierney 2006), and COVID-19 is no exception. Actions taken to contain the pandemic, such as quarantines, lockdowns, and social distancing, affect peoples' livelihoods, which affects their ability to access food and maintain housing (Barker and Russell 2020; Kulish 2020). Social support systems that rely on donations (e.g., food banks) may have decreased capacity to serve those most at need (see, e.g., Kulish 2020). Temporary moratoria against evictions and foreclosures can alleviate immediate housing concerns but do not address the underlying or long-term risks, especially for low- and moderate-income families (see, e.g., MAPC 2020).

Social distancing measures and stay-at-home orders can also cause problems by disrupting social support systems. Domestic abuse rates have risen worldwide as people are forced to shelter with their abusers (Bradbury-Jones and Isham 2020; United Nations 2020; Usher et al. 2020). This is a common issue during disasters and post-disaster recovery (WHO 2005; Schumacher et al. 2010; Gearhart et al. 2018), as social support systems are disrupted and victims may need to rely more on their abuser for housing or provision of other basic resources. The long duration of the pandemic makes this an even greater concern. Similarly, individuals with mental health challenges may face additional pressures due to social isolation and disruption of medical and social support systems (Druss 2020; Gunnell et al. 2020). Social distancing can cause depression, insomnia, and anxiety; may be related to intrapersonal violence and increased alcohol consumption; and has raised concerns about potential for increased suicide rates as the pandemic drags on (Gunnell et al. 2020). Mental health support is inadequate in most countries even in non-disaster times, and the limited ability to access in-person support, coupled with concerns about privacy and accessibility of remote mental health care, can make treating these issues difficult.

Disrupted social systems also affect child and elder care. Families who relied on paid care for family members may no longer have access to those supports. This may exacerbate gender inequality, as females tend to take on more housework and caregiving responsibilities (Alon et al. 2020; Del Boca et al. 2020; Farré et al. 2020). Because men earn more on average and are more likely to work in essential services, men's jobs are often the ones preserved during a recession or financial hardship, which can compound gender divisions.

Inequalities in virtual education may reduce social mobility and exacerbate intergenerational wealth inequalities (Van Lancker and Parolin 2020). Income affects the ability of students to access consistent internet services, working laptops or computers, and video cameras and microphones that enable participation (Tinubu Ali and Herrera 2020). Students who are homeless or housing insecure may face particular challenges (Tinubu Ali and Herrera 2020), as may students who require accommodations that are more difficult to make online (Petretto et al. 2020).

21.4 Potential of COVID

There are, of course, myriad ways the pandemic and efforts to contain the pandemic affect people unequally and expose weaknesses in the existing social system. None of these challenges—racial inequality, domestic violence, mental health treatment, gender inequality, educational access—are caused by the pandemic; rather, they are ingrained in society and merely rise to the forefront when the system is strained. Other hazards and previous pandemics have underscored the same or similar inequities, and the fact that these have remained in place for decades or centuries suggests that the social systems creating inequity are highly resilient: resistant to change and likely to return to prior conditions once the strain is removed. The optimistic hope for the COVID-19 pandemic, then, is that it inspires or forces policymakers, practitioners, academics, and the public to reconsider what it means to invest in community resilience and to take action to inspire transformation as a means to challenge the inequitable status quo.

Disasters are often framed as opportunities. Sudden shock event, such as acts of terrorism, hurricanes, and wildfires, have been shown to create windows of opportunity for social change, when both political decision-makers and the public are aware of a need for change and motivated to take action (O'Donovan 2017; Ulibarri and Scott 2019). As Folke et al. note, "[a] resilient social-ecological system may make use of crisis as an opportunity to transform into a more desired state" (Folke et al. 2005, p. 441). Hurricane Katrina motivated changes in U.S. emergency management (Fugate 2011). Fukushima sparked conversations about improving nuclear safety (Blandford and Sagan 2016).

However, the potential for slow-onset hazards, such as a global pandemic, to inspire policy reform is less clear (Ulibarri and Scott 2019). Individual tragedies, like traffic-related deaths, rarely inspire policy reform, although they may do so in aggregate (O'Donovan 2017). The number of incidents, characteristics of the people affected, and rate of increase all affect the extent to which 'society' takes notice. The question of whether COVID-19 deaths and harms have reached a sufficient level to inspire policy change is yet to be answered. Previous pandemics, even major ones such as the 1918 'Spanish Flu' pandemic, have been found to exert relatively little long-term influence on policy change (Meen et al. 2016).

Nevertheless, there are a few reasons to believe the COVID-19 pandemic could lead to widespread social change. The first is that COVID-19's long duration and

global spread transcend the average disaster pattern. Common hazards and bounded epidemics have a limited duration or narrow geographic scope. This allows people to rely on resources stocked up before the disaster or to access resources from outside the stressed area. They can rely on social networks outside the affected region to provide emotional or financial support. For example, remittances from migrant communities have played a significant role in financing disaster recovery in their home countries (Bragg et al. 2018). Donations, volunteers, and material can all be sourced from unaffected places. With the COVID-19 pandemic, few areas are unaffected, so the ability to rely on external resources or social support systems is extremely limited. In this way, COVID-19 shows how un-resilient societies are, where resilience is defined as self-reliance (UNDRR 2009; Aldunce et al. 2015).

Second, the global nature of the COVID-19 pandemic raises the geographic scope over which aggregation can occur (O'Donovan 2017) and highlights widespread, multi-sector failures to address the hazard. An isolated hurricane, wildfire, or epidemic might be dismissed in the public mind as an exception, a rare failure by a single agency, or a particularly extreme event. However, when an event affects an entire nation and multiple nations in similar ways, it becomes more apparent that the problem lies not with a single agency or actor but with the underlying social structure. The global nature of the pandemic also invites comparisons between communities, cities, states, and nations and allows citizens to see how others are handling the same crisis (Bremmer 2020; Gibney 2020). This creates a living laboratory, in which governments can experiment with COVID-19 responses and the results of the experiment are seen rapidly, which may raise the potential for novel policies to inform actions in other regions.

Third, although COVID-19 is not the 'great equalizer' sometimes mentioned by politicians (Timothy 2020), the effects of the pandemic and of lockdowns, social distancing, and other measures to contain the pandemic, are felt to some extent across much of the socioeconomic strata. This has the potential to push those with privilege to work for reforms that are both in their own interest and benefit others. Closed schools, for example, have sparked conversations about access and affordability of childcare and gender equity in the home and the workplace (Elias and D'Agostino 2020; King et al. 2020). These issues have become prominent to a greater degree than is common following shock events, such as hurricanes or tornadoes, where disruptions to schools and childcare are short-lived and often accompanied by disruptions to work and homelife. Online education has raised conversations about equity that are focused on access to digital technology but have far-reaching implications beyond enduring the pandemic (Beaunoyer et al. 2020). Privileged populations—wealthy, white elites—have discovered that they, too, can be affected by deficiencies or lack of resilience in our educational and childcare systems. If this recognition sparks action, it could lead to educational reforms or universal childcare that would have widespread benefits.

Already we have some glimpses of optimism. Males taking on more responsibility for housework and childcare may help erode gender norms and create more demand for equity in parenting responsibilities (Alon et al. 2020; Blundell et al. 2020; King et al. 2020). Businesses adopting flexible work arrangements to address

COVID-19 may develop enduring flexible work arrangements that could help employees find work-life balance (Alon et al. 2020; Spurk and Straub 2020) and even lead to transportation reform and a re-design of workspaces (Hensher 2020). Teleconferences, distance presentations, and no-fly decisions have become norms for business meetings and academic conferences (Price 2020; Viglione 2020). An informal poll by Nature found that 80% of academics supported virtual meetings after the pandemic (Woolston 2020), which could benefit not only the environment (through reduced emissions) but also academics from institutions with few resources to pay for travel or academics with child or eldercare responsibilities.

Privileged populations may even be inspired to support reforms to reduce exposure or sensitivity of vulnerable groups, in hopes of reducing the overall severity of the pandemic or lessening harsh government responses. For example, in Victoria, Australia, an outbreak of COVID-19 in a local Afghani community affects the ability of the entire region to lessen strict lockdown protocols. The outbreak has been attributed to high-risk workplaces, reliance on public transportation, and difficulty in spreading health messages in appropriate languages (Mannix and Eddie 2020). The entire state population has a self-interested motive to work for structural reforms to address these root causes: if they want a lighter lockdown, they need to ensure that every community within their state achieves lower case rates. Whether or not this will result in structural shifts remains to be seen, but the connection between personal incentives and collective action creates potential.

We hesitate to paint too rosy a picture. Pandemics have failed before now to inspire policy change (Quinn et al. 2011; Meen et al. 2016), and it is not clear whether any of the benefits we mention will be realized, whether they will be realized before the pandemic ends and public support withers, whether changes will be lasting, or whether lessons learned from COVID-19 will translate to other hazards and aspects of society. It is entirely possible that, rather than push for systemic reforms, wealthy or powerful populations will use their affluence and positions to find solutions not available to other portions of society. They may relocate from urban centers to rural towns to avoid exposure (e.g., Tully and Stowe 2020), hire nannies and private tutors to assist with childcare and homeschooling burdens (e.g., Berman 2020; Rogers 2020), or pay for private schools that offer in-person education rather than work towards fair and effective online education (e.g., Miller 2020). They may even stop donating to social causes, as their own resources dwindle (e.g., Kulish 2020), or avoid policy change due to uncertainty about the future (Mudditt 2020).

21.5 A Broadening Concept of Community Resilience

COVID-19 may or may not inspire broad societal change, but it should change the way we conceive of community resilience. To start, it raises the question: "How much do the healthiest people in society owe to the most vulnerable?" (Mimbs Nyce 2020), or, to phrase it more generally: how much do the most privileged owe

the least? Disasters often aggravate wealth inequality in part because the wealthy are able to leverage resources to minimize harms and take advantage of opportunities in ways low-income households are not (Howell and Elliott 2018). Wealthy residents can pay expensive insurance premiums; afford hazard mitigation measures; stay in hotels, rent cars, or use company vehicles when their own are destroyed; or have savings accounts they can draw upon to cover expenses while out of work (Hersher and Benincasa 2019). Wealthy residents can even afford private fire companies to provide additional protection against wildfires (Varian 2019). Whether they should be allowed to purchase additional protection, and whether this is an admission that government-provided protection is insufficient, is an ethical question unanswered to date. Nor is it unique to disasters. Debates have raged for years about whether parents who put their children in private or charter schools reduce the resources available to public education and widen the inequalities between them and families for whom private education is not a choice (see, e.g., Mann and Baker 2018).

This creates potential for privileged and powerful members of society to return to or maintain pre-disaster conditions with relative speed and ease. Transformation of a system to a new stable state requires energy (Holling 1973): in social terms, it requires political, social, and financial capital. If wealthy and powerful members of a system do not act, the system is far less likely to change.

This, then, requires that we re-frame concepts of resilience to answer not only 'of what to what' (Carpenter et al. 2001) but also 'for whom' (Keenan and Hauer 2020). For the individual or the society? For all members of society or for some measure of the collective? Nations may respond to COVID-19 with relatively few changes in their underlying social fabric, thereby demonstrating resilience. However, individuals within those same nations may suffer terribly, and their lives be irrevocably harmed, demonstrating a lack of resilience. In some cases, as described above, the very resilience of the social system may be a cause of the individual's harm. We cannot, then, describe the resilience of the system without making an implicit or explicit statement about resilience for whom. Defining the system, and thereby answering the question 'of what' could include specifying the populations in question, but in pursuit of equitable outcomes associated with public investments in community resilience, it seems important to explicitly draw out this implication, lest it become overwhelmed by system traits.

Similarly, when defining the threat against which the system is to be resilient, the threat may be defined narrowly as a response to a specific threat or broadly as a general ability to deal with uncertainty and stress (Walker and Westley 2011; Carpenter et al. 2012; Lemos et al. 2013). The experiences of COVID-19 argue for a broad conceptualization of general resilience in the case of pandemics and to measure resilience to pandemics not only in terms of public health or economic welfare but other aspects of social well-being that are seemingly-unrelated but have a strong relationship to vulnerability and resilience: issues such as childcare, mental health, domestic abuse, and public transportation. Matin et al. (2018) argue equitable resilience "requires starting from people's own perception of their position within their human-environmental system, and it accounts for their realities and for

their need for a change of circumstance." Accounting for the lived realities of people during the COVID-19 pandemic requires social support systems—food banks, daycares, hotlines, buses—to be placed not at the periphery but at the core of the discussion.

The concept of 'community resilience' places emphasis on system-wide metrics of the 'community', but in so doing, it may lose focus on the experience of individuals. It may focus our attention on general resilience of the collective at the expense of specific resilience of certain populations within the community who face specific threats not recognized at the community level. When we ask 'resilience for whom'—what portions of the community—we focus on more tangible experiences, inequities, and potential solutions. At the same time, however, there is a risk in subdividing resilience investments and policies too narrowly, as many social systems interact. Community resilience, then, requires a careful balance to promote equity and specific as well as general resilience.

Ultimately, although the social justice concerns raised by COVID-19 are not novel, the global and long-term nature of the pandemic may inspire a change in how resilience is defined and in how society views the goals of resilience: whether to preserve structures or support individuals. Whether people will rise to the challenge or return to pre-COVID inequities, remains to be seen.

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