Developmental exposure to the physical and social world and responses to risk among college students from four cultural contexts

Yulia Chentsova-Dutton [a,*] , Derya Gürcan-Yıldırım [b], Jinli Wu [a], Ilya Zakharov [c], Andrew G. Ryder [d,e]

[a] Georgetown University, Washington, DC, USA
[b] Atatürk University, Erzurum, Turkey
[c] JetBrains, Serbia
[d] Concordia University, Montreal, Quebec, Canada
[e] Jewish General Hospital, Montreal, Quebec, Canada

ABSTRACT

What are the psychological implications of developmental exposure to the physical and social environment of one's community, with its threats and rewards? The cultural shaping of enacted autonomy—or self-reliance in an environment that includes real and perceived threats—has largely been overlooked despite historical changes in this domain. Responses to risk are thought to depend on experience-dependent calibration in teens and young adults. It is unknown whether developmental exposure to enacted autonomy is associated with emotional responses to risk in emerging adults. This questionnaire-based study compared college students from four countries thought to differ in developmental exposure of children to their communities (USA, $n = 258$, Canada, $n = 211$, Türkiye, $n = 163$ and Russia, $n = 104$). Enacted autonomy was assessed via students' retrospective reports of meeting enacted autonomy milestones (e.g., walking to school by themselves) while growing up. Responses to risk were assessed by: (1) a scale measuring perceived safety of the area where students currently live; and (2) descriptions of recent risky events in the students' lives and their emotional reactions to them. Russian students reported meeting enacted autonomy milestones earlier and Canadian students later, with the US and Türkiye in between. Meeting autonomy milestones later in one's childhood was associated with the tendency to perceive one's college-age environment as less safe and experience less intense positive affect in risky situations. It may be important for researchers studying the cultural shaping of emotions and risk to consider the role of exposure to the physical and social world.

"A preoccupation with safety has stripped childhood of independence, risk taking, and discovery" (Rosin, 2014, *The Overprotected Kid*).

1. Introduction

This quotation from a much-discussed article by Hanna Rosin illustrates concerns among North American readers that the increasingly intense supervision of children, which aims to protect them from potential risks, may come with costs. Rosin asked urgent questions about the effects of growing up in this historically unusual context characterized by low childhood exposure to local physical and social worlds (or local ecologies of physical terrain and people inhabiting it). What happens to these children when they leave for college, given that only a few

years may pass between learning to cross the street on one's own and crossing the threshold of a college dorm? Parents and educators are asking whether recent declines in unsupervised time during childhood and adolescence are associated with emotional changes in young adults. Against the background of public concerns, this paper aims to add empirical data to the conversation about psychological correlates of low levels of unsupervised exposure to local physical and social worlds.

What does it mean for a child to be autonomous? Conceptualizations of autonomy in psychology tend to conflate such constructs as self-interest, the desire to be unique, and self-reliance, to name just a few (Kagitcibasi, 2013; Vignoles et al., 2016). One important and understudied domain is autonomy of action, what we refer to as *enacted autonomy,* or the ability to function in the world as a self-reliant individual

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(Gustavsson, 2008; Kagitcibasi, 2013). A central aspect of developing enacted autonomy skills in childhood is unsupervised exposure to local physical and social worlds. As they grow, children gain enacted autonomy skills, such as walking or biking to school, or playing outside without adult supervision. We refer to the ages when children begin performing such tasks *enacted autonomy milestones* (a related concept in the literature is parental 'licenses' to perform these tasks at a certain age; Shaw et al., 2015).

In different cultural-historical contexts, children encounter different ecologies of risk with unique profiles of threats and rewards. There are also differences in the ability of children to access their physical and social worlds without supervision. The average ages of meeting enacted autonomy milestones, such as walking to school unsupervised, have been on the rise around the world, with especially dramatic increases in individualistic English-speaking countries, such as the US and Canada (e.g., Buliung et al., 2009). What are the potential developmental effects of these changes? Developmental exposure to neighborhood-specific risky situations may play a protective role in emotional development (Gray et al., 2023). Such situations present children with competing threat and reward cues, e.g., crossing a potentially dangerous street to meet a friend. Over time, the cumulative exposure to such events may have implications for responses to risk. The effects of this exposure may depend on the nature of the ecology of risk in the child's neighborhood; when these risks are moderate and manageable, experience with them may offer developmental benefits (Gray et al., 2023). Yet, little is known about the long-range affective correlates of lower exposure to enacted autonomy in emerging adults. This study examined the associations between retrospectively recalled ages of meeting enacted autonomy milestones and emotional responses to global and specific risks among college students from USA, Canada, Russia, and Türkiye (formerly Turkey; the name was officially changed in 2022), cultural contexts that are thought to differ with respect to the characteristics of the physical and social worlds and beliefs and practices that afford growing children enacted autonomy.

1.1. Historical changes in enacted autonomy norms

Traditional societies tend to place value on the ability of young children to function without supervision, with increasing self-reliance from early to late childhood (Lancy, 2016). This tendency is especially pronounced in societies where adults are expected to function independently (i.e., as foragers). Such societies offer even very young children abundant unsupervised risky play (Lancy, 2016). Outside such societies, there is less unsupervised exposure to the physical and social worlds in childhood, with particularly pronounced recent drops in enacted autonomy granted to children. In North America, norms of more intensive parenting have emerged in recent decades (Bianchi, 2011). Children spend increasingly more time with their parents, at the expense of unsupervised activities (Hofferth, 2009; Sayer et al., 2004; Wray et al., 2021). For example, Canadian mothers and fathers spent nearly an hour and a half and an hour, respectively, more around their children in 2015 than they did in the 1980s. Even within the same families, parents grant their children less enacted autonomy than they had as children. American parents report offering their children aged 3–12 fewer opportunities to engage in free play (including unsupervised outdoor play) than they had at similar ages (Clements, 2004). A study conducted in England demonstrates that this pattern holds even when objective levels of community risk stay stable or decline (Woolley & Griffin, 2015).

One marker of enacted autonomy are rates of children walking and biking to school. These rates are decreasing, and the ages when U.S. and Canadian parents allow their children to engage in these activities have shifted upward dramatically (Buliung et al., 2009; McDonald et al., 2011). Between the late 1960s and early 2000s, the proportion of US children aged 5–11 regularly walking or biking to school dropped from 49.3 % to 15.1 % (McDonald, 2007). Similar trends were observed in Canada. Between 1986 and 2011, the proportion of children walking to

school in the Greater Toronto and Hamilton area dropped from 55 % to 28 % (Smart Commute, 2015; also see Buliung et al., 2017). These changes yield neighborhood ecologies that afford less enacted autonomy than those of previous generations, with fewer children and adolescents in local streets and parks, making these outdoor spaces less enticing and potentially less safe. In teens, there are corresponding decreases in once normative enacted autonomy rites of passage of adolescence, such as driving, working and dating (Twenge & Park, 2019). For instance, the number of 8th graders in a national US survey who earned any money by working went from 63 % in 1990–1994 to 32 % in 2010–2014 (Twenge & Park, 2019).

1.2. Cultural differences in enacted autonomy

Although enacted autonomy is dwindling across countries, the magnitude of these changes is uneven. Cross-cultural comparisons reveal that indicators of enacted autonomy, such as independent mobility (Malone & Rudner, 2011; Shaw et al., 2015), are higher in countries like Germany and Japan than in English-speaking WEIRD (Henrich et al., 2010) countries like Australia and South Africa. Although few studies use direct within-study comparisons, estimates suggest the US and Canada also afford enacted autonomy relatively late, in line with other English-speaking countries (see Chentsova-Dutton & Gürcan, 2019). What cultural characteristics are associated with this tendency?

Cross-cultural psychologists have long argued that autonomy is not a unitary construct, but rather a constellation of distinct norms and values (Schwartz, 1999; Singelis et al., 1995; Vignoles et al., 2016). Although behavioral self-reliance has been a focus of developmental research in anthropology (Schlegel & Barry, 1991) and human geography (Malone & Rudner, 2011), this competency has been overlooked by cultural and cross-cultural psychologists. Most of their work has focused on "freedom of thought," the ability to hold independent opinions, rather than "freedom of action," the ability to act independently (Gustavsson, 2008). As such, we know little about cultural dimensions associated with developmental exposure to local physical and social worlds. An intriguing possibility is that endorsement of autonomy values may or may not be associated with higher enacted autonomy in childhood.

Although studies suggest children in North America attain enacted autonomy milestones relatively late, North American parents rate autonomy as an important child-rearing value (Nomaguchi & Milkie, 2019). Larger non-parent samples from the USA and Canada also endorse values associated with autonomy as much or more than samples from countries that are more supportive of enacted autonomy of children, such as Germany or Japan (Schwartz, 2009). These data suggest there is a gap between autonomy values and encouraging enacted autonomy behavior in children. However, prior work has largely compared values at the country level. Such aggregated values can differ from individual-level values in their structure and associations (Akaliyski et al., 2025). No work has examined the associations between individuals' enacted autonomy experiences and their endorsement of cultural values. This study aims to do so.

1.3. Enacted autonomy in Russia and Türkiye

This study compares enacted autonomy in samples from North America (USA and Canada) to those from Russia and Türkiye, four cultural contexts that are thought to differ with respect to their ecologies of risk and cultural norms regarding enacted autonomy of childhood. Russia and Türkiye are relatively understudied when it comes to enacted autonomy, with more data available on the former than the latter. Available studies from Russia point to relatively high (even if dropping) levels of enacted autonomy among children (Bochaver et al., 2017; Hastie et al., 2010; Sivak & Glazkov, 2017). Studies retrospectively asking young adults about their history of meeting enacted autonomy milestones suggest that Russian children born in the 1990s through

2010s began engaging in independent mobility in elementary school, as 6–10 years olds (Bochaver et al., 2020). Although these numbers are based on retrospective reports of young adults, they are consistent with studies of independent mobility in children (Bochaver et al., 2017, 2020). For example, most 12-year-olds in Moscow routinely cross large roads and spend time around their neighborhoods without supervision. These children report mastering these skills earlier in their childhoods, presumably during their elementary school years (Bochaver et al., 2020). These numbers place Russian children's enacted autonomy skills in the higher tier of independent mobility estimates relative to samples of children from English-speaking WEIRD countries (e.g., Ireland, Australia; Shaw et al., 2015). Although the US and Canada were not included in these studies, data indicate that children in these countries meet the same milestones later. For instance, the Pew Research Center survey (Pew Research Center, 2015) suggests that on average parent in the USA believes that children should be at least 14 before they are allowed to be outside unsupervised, an estimate consistent with those obtained in studies of independent mobility of US and Canadian children. As such, North American young adults may achieve enacted autonomy milestones after their Russian counterparts.

Far less is known about Türkiye. Some of the initial thinking about enacted autonomy came from a Turkish developmental psychologist, Çiğdem Kağıtçıbaşı, who reflected on Turkish cultural contexts while developing a model of enacted autonomy. As the economic value of children declined and psychological value increased, Turkish families placed increasingly more value on a combination of autonomy and relatedness, with distinct norms for valued versus enacted autonomy (Kagitcibasi, 2005; Kagitcibasi, 2013). Yet, cross-cultural comparisons with Turkish samples are lacking in the literature. Our study aimed to addresses this important gap.

When it comes to cultural values, most studies have focused on culture-level rather than individual-level values in Russia and Türkiye. Both of these countries are more collectivistic than the US and Canada, with inconsistent results for individualism and independence (Ayçiçegi-Dinn & Caldwell-Harris, 2011; Jonason et al., 2017; Realo & Allik, 1999; Tõugu et al., 2017). Cultural meanings of autonomy also differ from those endorsed by samples in North America. Whereas adults in the US and Canada tend to endorse values of ideational autonomy (e.g., uniqueness, self-expression), Russian and Turkish adults are more likely to endorse self-reliance (Schwartz, 2009; Vignoles et al., 2016; see also Ayçiçegi-Dinn & Caldwell-Harris, 2011). As such, Russian and Turkish country-level cultural values may encourage children to act independently and explore their physical and social worlds more than North American ones. Yet, given lack of coherence between country-level cultural values and patterns of enacted autonomy, it is important to empirically examine this question.

1.4. Psychological correlates of enacted autonomy

What are the longer-term developmental correlates of unsupervised exposure to local physical and social worlds? Higher exposure is positively associated with better physical fitness, mental mapping, and social functioning (e.g., Brown et al., 2008; Mitra et al., 2014; Schug, 2016). One area that has not received adequate attention is the association of enacted autonomy with affective functioning. Developmentally, mastery of enacted autonomy milestones takes place against the background of shifts in risk-taking. Risk-taking normatively increases in childhood, peaks in middle to late adolescence, and starts decreasing in the early 20s; these changes are thought to be scaffolded by puberty-driven and experience-dependent changes in neural responses to rewards and slower-developing executive function and cognitive control (e.g., Braams et al., 2015; Steinberg, 2010). The neural responses involved in weighing threat and reward cues are calibrated by first-hand exposure to risk (Hartley & Somerville, 2015). The 'experience-dependent' aspects of these models point to the critical role of first-hand experiences with risk to the ability to calibrate responses to future risks in

childhood and adolescence.

Enacted autonomy is hypothesized to affect the development of responses to risk via free play and encounters with neighborhood-specific stressors. First, enacted autonomy lends itself to free play (Wen et al., 2009). Research with young animals and children suggests that free play is critical to the ability to dynamically and adaptively detect and respond to loss and gain cues characteristic of risky situations (Brussoni et al., 2012; Panksepp, 2007). Second, it is also the case that enacted autonomy exposes children to the real-world risks typical of their communities (e.g., missing a bus, encountering a stray animal). As such, it offers children practice with managing such risks. Although encounters with some risks, such as community violence, can be very problematic, exposure to milder risks can beneficially affect young children's risk perception and competence at managing risks (Lavrysen et al., 2017) and is associated with higher levels of well-being in children (Sando et al., 2021). The *stress inoculation, physiological toughness,* and *steeling effects* literatures are helpful for interpreting these relationships. They suggest that manageable but moderately stressful experiences can help children (and adults) develop more granular and realistic knowledge or risks and more effective responses and coping skills (Dienstbier, 1989; Parker & Maestripieri, 2011; Rutter, 2012).

What about the downstream developmental effects of enacted autonomy? Very little longitudinal work on emotional functioning has examined the longer-term role of unsupervised exposure to the local physical and social worlds. Research on childhood exposure to stress suggests that first-hand encounters with stressful situations can help one prepare for subsequent challenges and build self-efficacy. Levels of stress experienced in childhood show an inverse U-shaped relationship to later affective outcomes (e.g., Liu, 2015). That is, very high and very low exposure to stress are both linked to less optimal emotional outcomes (e. g., psychological distress; see Oshri, 2023 for a review) relative to moderate exposure to stress. Only one study conducted in Italy has specifically examined the developmental effects of enacted autonomy in childhood (when children were 8–10 years old), it linked lower levels of enacted autonomy to higher fear of crime in adolescence (Prezza & Pacilli, 2007). More studies examining enacted autonomy are sorely needed. To the extent that delayed enacted autonomy milestones take away opportunities to engage with manageable risky situations, young adults who have experienced lower versus higher levels of enacted autonomy may respond to risky situations differently.

Research on first-hand exposure to risks suggests that such exposure shapes future responses to risks in one of two ways (e.g., Greening et al., 2005). On the one hand, exposure to broad cumulative ecological risks is associated with less risk aversion. People in countries with higher levels of hardship (e.g., homicide rates, poverty) have a higher general propensity for risk-taking, suggesting that chronic exposure to risky environments may make people less sensitive to threats (Mata et al., 2016). On the other hand, experience with discrete and traumatic threats (e.g., accidents) in adults and children is associated with increased expectation of encountering these risks again and perceiving them as serious (Greening et al., 2005), reducing a normative optimistic bias in evaluating personal risks. Enacted autonomy is a construct that does not cleanly map onto either of these literatures. Although some children who explore their communities without supervision may encounter serious stressors, most do not. On the other hand, enacted autonomy is also distinct from the generalized experiences of high-risk environments, as it focuses on access to the physical and social worlds. It is important to examine its associations with responses to risky events with their balance of threats and rewards. Thus, we aim to add to the literature by: (1) focusing on young adults' retrospective description of their own history of meeting enacted autonomy milestones; and (2) examining affective responses (positive affect and negative affect) to risky situations in these young adults' lives.

1.5. The present study

Although theoretical accounts point to the possibility that exposure to enacted autonomy may shape affective competencies, studies lag behind, reflecting a significant gap in our knowledge. We also know very little about cultural differences in this domain. By examining the links between enacted autonomy experienced during childhood and downstream affective functioning, we hope to pave the way for longitudinal studies that would further probe the nature of such links. Another goal is to test whether the observed links may differ across cultural contexts. Much of the prior literature on enacted autonomy suffers from a WEIRD sample bias; therefore, it is important to extend this work to other cultural contexts as we develop generalizable models of this domain.

This study addresses several research questions. First, it tests whether developmental exposure to enacted autonomy differs cross-culturally and whether this exposure is associated with cultural values. Second, it examines the links between developmental exposure to enacted autonomy and responses to risk. The domain of responses to risk encompasses risks that are generalized (i.e., the estimates of risks typical to one's physical and social world, such as the sense that one's neighborhood is safe) and that are specific (e.g., the estimates of risk during discrete events, such as being confronted by a hostile person). Within the broader goal of examining the links between individual history of enacted autonomy and perceptions of risk, we assessed perceptions of generalized as well as specific risks. Specifically, the study examined the associations between retrospectively recalled attainment of enacted autonomy milestones and the tendency to evaluate one's college-age environment as safe (a generalized assessment of risk) as well as affective responses to specific risky events in participants' lives (a specific assessment of risk) in samples of young adults from the US, Canada, Türkiye, and Russia. We selected these cultural groups based on prior work and theoretical insights suggesting they may differ in enacted autonomy norms as well as in cultural values.

The study focused on college students, a group selected in order to examine young adults that have recently left or are preparing to leave parental homes. Participants completed a set of online questionnaires, including a retrospective measure assessing the ages when they were first allowed to engage in potentially risky tasks (e.g., navigating their neighborhoods) unsupervised. They also completed a measure of individual-level cultural values, allowing us to examine the associations of enacted autonomy with these values, including autonomy values, for the first time. To assess responses to generalized risk, participants reported on the safety of their current neighborhoods. To assess responses to specific risks in an ecologically valid fashion accounting for potential cultural differences in exposure to different types of risks, participants described risky events they recently encountered and reported their emotional responses to these events.

1.6. Hypotheses

1.6.1. Cultural differences in enacted autonomy

We hypothesized that Russian participants would report achieving enacted autonomy earlier than US and Canadian participants. Given limited work on enacted autonomy in Türkiye, we did not make a prediction for this setting. We also predicted corresponding differences in self-reported unsupervised exposure to risky events in childhood, with Russian participants reporting more encounters with potentially risky events in their childhoods than US and Canadian participants (with no predictions for Türkiye).

1.6.2. Associations of enacted autonomy with cultural values

No prior study has examined the associations of enacted autonomy with individual-level cultural values. Therefore, we conducted a series of exploratory analyses examining the associations of enacted autonomy with the core cultural values of Conservation, Openness to Change, Self-Transcendence, and Self-Enhancement (Schwartz et al., 2012). At the country level, countries that are higher in individualistic values (such as Openness to Change and Self-Enhancement) appear to have lower levels of enacted autonomy; however, there is no research examining this question. Moreover, these associations may differ at the individual level. Because enacted autonomy levels tend to be lower in individualistic countries, is possible that enacted autonomy levels would negatively correlate with individualistic values. On the other hand, developmental exposure to enacted autonomy may be fostered by or foster higher individualistic values, as these values reflect a sense of mastery of one's environment.

1.6.3. Responses to generalized risk

Given the link between enacted autonomy and generalized fear of crime (Prezza & Pacilli, 2007), we predicted a negative association between enacted autonomy and generalized perception of safety. Specifically, students who report meeting enacted autonomy milestones later will describe their college-age physical and social world as less safe than those who report an earlier age of meeting enacted autonomy milestones.

1.6.4. Responses to specific risky events

Less is known about the ecology of specific risky events encountered by young adults in different cultural contexts and about the ways in which personal exposure to risk is associated with responses to such events. As prior work does not offer a foundation for directional hypotheses, our analyses for these research questions were exploratory. First, we planned to examine the nature of risky life events encountered by the students. Next, we planned to examine emotional responses to these events. Because situations perceived to be risky tend to combine threat and reward cues, with adaptive responses to risk balancing attention to these cues, we examined associations of enacted autonomy with negative and positive affect in response to such situations.

2. Method

2.1. Participants

Participants were recruited through local psychology department research participant pools and posted fliers at four universities located in: Washington, DC, USA; Montréal, Québec, Canada; Ankara, Türkiye; and Moscow, Russia. All participants received course credit for their participation. Sample size was determined a priori using estimates from research on independent mobility ($N = 279$, approximately $n = 70$ per cultural group). It was increased for detection of smaller effect sizes to $N = 736$, with subsample sizes as follows: 258 in the US (US), 211 in Canada (CA), 163 in Türkiye (TR), and 104 in Russia (RU). To focus on emerging adults, we limited our sample to students who were 18–25 years old. Some students did not provide their ages. As the participant pools in the US and Türkiye did not include non-traditional students who may have been older than 25, we kept participants who did not provide their ages. The pools in Canada and Russia did include some non-traditional students; Canadian and Russian participants who did not provide their ages were excluded.

See Table 1 for demographics. The samples differed in their average age, $F(3,719) = 38.65$, $p < .001$, $\eta_p^2 = 0.14$, self-reported family SES while growing up, $F(3,733) = 42.98$, $p < .001$, $\eta_p^2 = 0.14$, gender, $\chi^2(3) = 17.29$, $p < .001$, and living situation: few students lived with parents in the US, Türkiye, or Russia, whereas half of the Canadians did so, $\chi^2(3) = 150.03$, $p < .001$. All data collected in Canada and Türkiye, and most of the data collected in the US and Russia, were collected pre-COVID. Some of the US ($n = 95$; 36.8 % of the sample) and Russian ($n = 6$; 5.8 % of the sample) data were collected after March of 2020. Excluding these data did not affect the observed pattern of results; they were therefore kept in the dataset.

Table 1

Demographics and mean levels of the responses to risk variables for the four samples.

	USA	Canada	Türkiye	Russia
Age	19.86_a (1.26)	21.24_b (1.62)	20.09_a (1.06)	20.68_c (1.98)
SES	3.81_b (1.08)	3.12_c (0.84)	2.87_a (0.74)	3.06_{ac} (0.92)
Gender (% female)	75.40	90.00	77.90	78.80
Living with parents (%)	23.30	50.20	10.10	16.40
Enacted autonomy milestones	3.96_a (0.59)	4.05_b (0.58)	3.99_{ab} (0.70)	3.22_c (0.57)
Number of risky events				
in childhood	1.63 (1.87)$_{ab}$	1.39 (1.70)$_{ab}$	1.47 (0.83)$_b$	2.23 (2.94)$_a$
Perceived safety	5.32_a (1.04)	5.35_a (1.14)	4.53_b (1.04)	4.92_b (1.08)
Negative affect	2.56_a (0.79)	2.99_b (0.89)	3.10_b (0.75)	3.27_b (1.31)
Positive affect	2.89_a (0.82)	2.67_a (0.81)	2.90_a (0.81)	3.30_b (1.08)

Note. Means with different subscripts are statistically different. SES measured on a 1–5 Likert scale, with 1 = "Lower income" and 5 = "Upper income."

2.2. Procedure

All measures were administered online. Participants read a consent form and clicked "Agree" to indicate consent. Study instructions and measures were delivered in English in the US and Canada, Turkish in Türkiye, and Russian in Russia. They were translated from English into Turkish and Russian and back-translated by bilingual psychologists; discrepancies were resolved via discussion. The questionnaires were presented on Qualtrics in the following order: demographics, questions about risky events, measures of enacted autonomy, cultural values, and neighborhood safety. Additional measures not relevant to this set of research questions included cultural background of the family, beliefs about autonomy, emotional distress, parental support, and a novel measure of adulthood self-efficacy piloted in this study.

2.3. Measures

2.3.1. Socioeconomic status

Participants reported on their household socioeconomic status (SES) while growing up. SES was measured on a 1–5 Likert scale, with 1 = 'Lower income" and 5 = "Upper income."

2.3.2. Enacted autonomy

Participants indicated the ages when they were first allowed to engage in tasks bringing them in unsupervised contact with the physical and social world. This list included 6 items describing activities that are potentially risky and bring a child in contact with objects, terrain and people in their physical and social world (crossing the street, walking or taking a bus to school, using public transportation, staying home alone, using stove and knives). Participants rated them on a scale of 1 = "younger than 4" to 6 = "16-18 years old." They could indicate N/A if a particular activity was not applicable to their childhood context (e.g., no public transportation). The responses to these items were averaged. The scale was moderately reliable (US: α = 0.68; CA: α = 0.68; TR: α = 0.77; RU: α = 0.72). The remaining 7 items tapped into aspects of autonomy that did not involve exposure to the physical and social world (e.g., selecting one's own clothes) and were not included in the analyses.

2.3.3. Cultural values

Participants filled out Twenty Item Values Inventory (TwIVI; Sandy et al., 2016). This brief scale measures reported adherence to a range of cultural values using ten 2-item scales. Participants rated their similarity with people exemplifying values of the lower-order value dimensions Conformity, Benevolence, Universalism, Self-Direction, Stimulation, Hedonism, Achievement, Security, and Power (see Schwartz et al., 2012). To reduce the number of pairwise comparisons, we used broader 4-item scales for the higher-order value dimensions (Schwartz et al., 2012) of Conservation values (combining Conformity and Tradition, US: α = 0.69; CA: α = 0.70; TR: α = 0.73; RU: α = 0.71), Openness to Change

values (combining Self-Direction and Stimulation, US: α = 0.81; CA: α = 0.76; TR: α = 0.73; RU: α = 0.71), Self-Transcendence values (combining Benevolence and Universalism, US: α = 0.77; CA: α = 0.76; TR: α = 0.77; RU: α = 0.62), and Self-enhancement values(combining Achievement and Power, US: α = 0.81; CA: α = 0.79; TR: α = 0.81; RU: α = 0.82). Conservation values emphasize order and tradition. In contrast, openness-to-change values emphasize behavioral and mental independence and readiness for change. Self-transcendence values emphasize concern for the well-being of others, whereas self-enhancement values emphasize the pursuit of one's own interests and the importance of gaining dominance over others. The subscale of Security was not reliable and the 2-item subscale of Hedonism was associated with both Openness to Change and Self-Enhancement. These two subscales were not used in subsequent analyses.

2.3.4. Perceived safety

Participants rated perceived safety of the area where they grew up and the area where they currently live using the Safety Rating Scale (Culbertson et al., 2001). Each of the areas was rated for safety during daytime and nighttime with 8-item scales (e.g., how safe they felt walking alone in that area). The resulting 16-item scales for areas where participants grew up (US: α = 0.99; CA: α = 0.96; TR: α = 0.94; RU = 0.96) and their current neighborhood (US: α = 0.95; CA: α = 0.95; TR: α = 0.91; RU: α = 0.91) were reliable.

Nearly all US students in this study lived on campus or in the area immediately adjacent to campus, whereas CA, TR and RU students had more variety in their living arrangements. To examine reports of safety for a more comparable target area across groups, we created a measure of perceived safety on campus with two variables asking students to evaluate safety of their university areas during daytime and at night (US: α = 0.82; CA: α = 0.81; TR: α = 0.84; RU: α = 0.64).

2.3.5. Risky events and emotional responses to them

Participants estimated the number of recent and childhood events that were potentially risky or dangerous and that occurred outside of their homes. They then described up to three such events. For this manuscript, we have focused on recent risky events experienced by participants within the last month. We did examine the number of childhood events as a secondary indicator of exposure to the risks posed by participants' local physical and social worlds. Participants provided brief descriptions of events that were "*potentially risky or dangerous,*" where there was a possibility that they might get physically or emotionally hurt and that occurred outside of home. This description was intentionally broad, allowing us examine local ecologies of risk in the four cultural environments, as they are understood and experienced by local emerging adults. We examined participants' ratings of how typical the event was in the context of their lives and the objective likelihood of getting hurt, rated on a 1–5 Likert scale. As few participants described second and third events, the analyses focused on the first

event.

Participants rated their emotional responses to the recent risky event using two 5-item PANAS (I-PANAS-SF; Karim et al., 2011) scales for positive and negative affect. These scaled do not represent pure positively and negatively valenced emotions, but rather a combination of valence and arousal. Positive affect emotions included feeling alert, inspired, determined, attentive and active (US: α = 0.68; CA: α = 0.70; TR: α = 0.72; RU: α = 0.83); negative affect emotions included feeling upset, hostile, ashamed, nervous and afraid (US: α = 0.65; CA: α = 0.73; TR: α = 0.59; RU: α = 0.84).

2.3.5.1. Coding of recent risky events. To capture characteristics of recent risky events, research assistants coded descriptions of the events. The following non-mutually-exclusive codes for the nature of risk were common enough to be analyzed: vehicles, substance use, other people, being alone, and relational and emotional complexity. The list of potential risky events was initially generated by the investigators a priori based on literature on common threats to health and safety; new categories (e.g., relational and emotional complexity) were added to this list based on the set of events generated by participants bottom-up. A team of three research assistants established reliability in coding (*kappa* of at least 0.70 for each category for the pair coding that category). Some of the codes (nature, animals, being lost, health concerns, academic concerns) were too infrequent (<5 % of the events) to be analyzed. Definitions and examples of each of the analyzed categories are as follows: *Vehicles* (*kappa* = 0.91): Events involving risk of being in a car accident, whether as a driver, passenger or a pedestrian, for example: "There was a chance that a car going through the red light would hit me when I was crossing the street" (Russia). *Substance Use* (*kappa* = 0.70): Events involving risk due to substance use consumed by self or others, for example: "I went to a party one night and had a few drinks. Then a few friends and I went to a bar where I drank more. After a while I decided to leave alone. I barely remember walking home. Part of me knew I locked the door behind me but I can't remember the details. I woke up in the kitchen in the morning." (USA). *Other People* (*kappa* = 0.73)*:* Events involving risk posed by potentially dangerous or threatening behavior of other people, for example: "About 2 weeks ago I started to think that I was followed. I started to think that I would be harmed, but after 3-4 days this situation disappeared." (Türkiye). *Being Alone* (*kappa* = 0.73): Events where being alone was described as the central element of the risky situation, for example: "I was walking back to my dorm from a

pre-game by myself." (USA). *Relational and emotional complexity* (*kappa* = 0.81): Events involving difficult and/or complex feelings or relational demands, for example: "At a party at work, everyone was talking about different ways they found their jobs for this employer. In my case, my ex-partner brought me there and dumped me a month later. I was worried that my painful past may be brought up." (Russia).

3. Results

3.1. Analytic strategy

Analyses were conducted using ANCOVAs and hierarchical linear regressions, with demographic variables used as covariates. The survey allowed skipping of items; therefore, sample sizes differed depending on variables included in the analyses.

3.2. Descriptive information

Table 1 presents mean levels of the key variables and Table 2 presents correlations between continuous key variables for the four cultural groups. Gender did not affect enacted autonomy and did not interact with cultural group in its associations with enacted autonomy. We excluded it from the analyses. All analyses were controlled for age and SES.

3.3. Cultural differences in enacted autonomy

There were differences in retrospectively self-reported enacted autonomy levels across samples, $F(3,673) = 37.76$, $p < .01$, $\eta_p^2 = 0.14$, controlling for age and SES. Planned pairwise comparisons with Bonferroni correction revealed that RU participants recalled meeting enacted autonomy milestones earlier in their childhoods than US, CA, and TR participants; CA participants reported meeting these milestones later than those in the US, $p < .01$ (see Table 1).

Participants' reports of the number of risky events they remember experiencing in their childhoods showed a similar pattern. In line with their reports of enacted autonomy and with the notion that enacted autonomy exposes children to more risky situations in their physical and social worlds, RUs reported encountering more such situations (indeed, many RU participants indicating that the number was too high for them to count) than TRs and CAs, with US in-between, ($F(3,615) = 3.56$, $p =$

Table 2
Correlations between the key variables.

Panel One: US Below the Diagonal; Canada Above the Diagonal								
	1	2	3	4	5	6	7	8
1. Enacted Autonomy	–	−0.17*	−0.10	0.03	0.06	−0.06	−0.01	0.07
2. Perceived Safety	−0.16*	–	−0.19*	−0.11	0.09	0.02	0.11	0.12
3. Positive Affect	−0.14	0.001	–	0.23*	0.11	0.12	0.03	0.03
4. Negative Affect	0.05	−0.16*	0.21**	–	0.22*	0.33**	0.16	0.18*
5. Conservation	0.02	0.04	−0.09	−0.02	–	0.23**	−0.04	0.12
6. Self-Transcendence	−0.03	0.11	0.01	0.10	0.18**	–	0.29**	0.07
7. Openness to Change	−0.17**	0.05	0.16*	0.07	−0.06	0.27**	–	0.34**
8. Self-Enhancement	0.01	0.15*	0.02	0.02	0.21**	−0.03	0.26**	–
Panel Two: Russia Below the Diagonal; Türkiye Above the Diagonal								
1. Enacted Autonomy	–	−0.10	−0.03	0.08	0.10	0.04	−0.21**	−0.14
2. Perceived Safety	−0.01	–	0.02	−0.13	0.06	−0.07	−0.07	−0.04
3. Positive Affect	0.11	0.04	–	−0.01	−0.06	0.09	0.002	0.13
4. Negative Affect	−0.27	−0.06	0.46**	–	0.13	−0.19	−0.21*	0.03*
5. Conservation	−0.003	−0.26*	−0.07	−0.06	–	0.25**	−0.15	0.11
6. Self-Transcendence	0.13	−0.23	−0.26	0.01	0.16	–	0.25**	−0.06
7. Openness to Change	0.05	−0.28*	0.02	−0.03	−0.003	0.23	–	0.41**
8. Self-Enhancement	−0.09	0.14	−0.02	−0.21	0.16	0.07	0.46**	–

Note.
* $p < .05$.
** $p < .01$.

Table 3
Summary of hierarchical regression analysis for variables predicting enacted autonomy.

Variable	Adjusted R^2	ΔR^2	B	SE	β	t
Step 1	0.02					
		0.02**				
Age			0.01	0.02	−0.02	−0.54
SES			0.10	0.03	0.16	3.81**
Perceived safety of home neighborhood			−0.02	0.02	−0.03	−0.81
Step 2	0.17					
		0.15**				
Age			- 0.02	0.02	−0.04	−0.95
SES			0.10	0.03	0.15	3.61**
Perceived safety of home neighborhood			0.03	0.02	−0.05	−1.30
Culture - USA			0.61	0.09	0.46	6.49**
Culture - Canada			0.79	0.09	0.57	8.56**
Culture – Türkiye			0.67	0.10	0.43	6.87**
Conservation values			0.06	0.25	0.09	2.35*
Self-transcendence values			0.01	0.03	0.02	0.41
Openness to change values			−0.07	0.03	−0.10	−2.52*
Self-enhancement values			0.02	0.025	0.03	0.73

Note. SES = Socioeconomic status.
* $p < .05$.
** $p < .01$.

.01, $\eta_p^2 = 0.02$ (see Table 1).

3.4. Cultural value correlates of enacted autonomy

We examined whether young adults' endorsements of core cultural values were associated with self-reported enacted autonomy (see Table 3). A hierarchical linear regression was used, with covariates (age, SES, reported safety of neighborhood while growing up) entered in Step 1, cultural values and dummy variables for country (US [0;1]; CA [0;1]; TR [0;1]; with Russia coded as 0 for each of these variables) entered in Step 2, and interactions between values and dummy variables entered in Step 3. Step 1, $F(3,645) = 5.23$, $p = .001$, adjusted $R^2 = 0.02$, and Step 2, $F(10,638) = 12.71$, $p < .001$, adjusted $R^2 = 0.15$, R^2 change $= 0.14$, $p < .001$, were significant. Higher SES was associated with meeting enacted autonomy milestones later, while age and safety of home neighborhood did not show statistically significant effects. With covariates in the model, being a participant in the US, CA, and TR was associated with meeting milestones later, with RU in the model as a reference group. Conservation values were associated with later age of meeting enacted milestones, whereas Openness to Change values were associated with younger age of meeting them. Step 3 was not significant, adjusted $R^2 = 0.15$, R^2 change $= 0.015$, $p = .49$, indicating that interactions between cultural values and country did not add to explained variance. Because RU was the reference category, its levels of enacted autonomy can be inferred from the analyses presented above (higher than other samples).

3.5. Association between enacted autonomy and responses to generalized risk

In order to examine the hypothesis that later self-reported age of meeting enacted autonomy milestones would be associated with reduced generalized perceptions of safety, we used a hierarchical linear regression with covariates (age, SES) entered in Step 1, enacted autonomy and 3 dummy variables for country (US [0;1]; CA [0;1]; TR [0;1], with Russia coded as 0 for each of these variables) entered in Step 2, and interactions between enacted autonomy and country dummy variables entered in Step 3. Step 1, $F(2,651) = 14.54$, $p = .001$, adjusted $R^2 = 0.04$, and Step 2, $F(6,647) = 13.66$, $p < .001$, adjusted $R^2 = 0.10$, R^2 change $= 0.07$, $p < .001$, were significant. Higher SES ($B = 0.23$, SE $B = 0.04$, $\beta = 0.20$, $t = 5.10$, $p < .01$) and being older ($B = 0.07$, SE $B = 0.03$, $\beta = 0.10$, $t = 2.49$, $p < .05$) predicted feeling safer in Step 1. With covariates in the model, SES ($B = 0.17$, SE $B = 0.05$, $\beta = 0.15$, $t = 3.56$, $p < .01$), but not age ($B = 0.04$, SE $B = 0.03$, $\beta = 0.05$, $t = 1.23$, *ns*) remained significant. Being a participant in the US ($B = 0.44$, SE $B = 0.17$, $\beta = 0.19$, $t = 2.64$, p

$< .01$) and CA ($B = 0.53$, SE $B = 0.17$, $\beta = 0.22$, $t = 3.16$, $p < .01$), but not Türkiye ($B = -0.22$, SE $B = 0.17$, $\beta = -0.08$, $t = 1.25$, *ns*) was associated with feeling safer, with Russia in the model as a reference group. As predicted, later age of meeting the enacted autonomy milestones was associated with feeling less safe in one's current physical and social world ($B = -0.16$, SE $B = 0.07$, $\beta = -0.09$, $t = 2.29$, $p < .05$). Step 3 was not significant, adjusted $R^2 = 0.10$, R^2 change $= 0.002$, $p = .77$, indicating that interactions between enacted milestone measure and country did not add to explained variance. An additional analysis conducted with the 2-item scale of safety on campus as a dependent variable showed a similar, albeit only marginally significant, pattern. College students' reports of meeting enacted autonomy milestones at a younger age were marginally associated with reports of feeling safer on their own university campuses ($B = -0.14$, SE $B = 0.07$, $\beta = -0.08$, $t = 1.85$, $p = .06$). Because RU was the reference category, its levels of reports of feeling safe can be inferred from Table 1 (lower than the US and CA and similar to TU).

3.6. Association between enacted autonomy and responses to specific risky life events

First, we examined the ecologies of risk for the four cultural samples, as reflected in the number and the nature of the recent risky events reported by young adults across these samples. There were statistically significant (but small in magnitude) cultural group differences in the total number of recent risky events, $F(3,682) = 3.55$, $p = .01$, $\eta_p^2 = 0.015$. Students in CA ($M = 1.03$, $SD = 0.98$) reported a marginally lower number of such events than those in TR ($M = 1.36$, $SD = 0.76$) and the US ($M = 1.31$, $SD = 1.18$), with RU not significantly different from other groups ($M = 1.08$, $SD = 1.75$). Types of risky events also differed by cultural context (Table 4). Prototypical examples of risky situations were

Table 4
Nature of risky events described by participants (% of all events).

	USA	Canada	Türkiye	Russia	χ^2	p
Vehicles	12.8ab	23.5b	7.2a	37.5b	26.87	<0.001
Substance use	16.6	11.0	9.3	10.4	4.09	0.25
Other people	45.5b	66.9a	66.0a	47.9ab	20.22	<0.001
Being alone	25.7b	5.9b	3.1a	4.2b	44.26	<0.001
Relational and emotional complexity	13.9	9.6	17.5	10.4	3.59	0.31

Note. Percent estimates with different subscripts are statistically different ($p < .0027$), with Bonferroni correction applied for the number of comparisons.

as follows: In the US, encounters with other people, often with very limited contact (e.g., passersby that were perceived to be dangerous without actually displaying aggressive behavior) and descriptions of being alone (e.g., walking home alone, often after dark) were common. In CA, risky events involving driving (e.g., nearly getting into accidents) and other people behaving aggressively (e.g., in bars) were common. In TR, encounters with threatening people (e.g., scammers) and relational and emotional complexity (e.g., conflicts with friends) were common. In RU, encounters with people behaving aggressively and encounters with unsafe drivers (e.g., being hit or nearly hit by cars) were common.

As shown in Table 4, exposure to risky events involving vehicles differed by country, with the lowest levels in TR and the highest levels in RU. Exposure to actual or potential risk from other people was higher in TR and CA and lower in the US and RU. The descriptions of being alone as a risk were more common in the US than the other samples. There were no differences for encounters with risky events involving drugs and alcohol and relational and emotional complexity. These data indicate that the ecology of risk differed across the four cultural groups. However, entering types of events into the regressions examining the associations of enacted autonomy with affective responses to risky events did not affect the observed pattern of results; therefore, we omitted these variables from the subsequent analyses.

To examine the association between self-reported ages of meeting enacted autonomy milestones and responses to specific risky events, we used two hierarchical linear regressions with averaged negative and positive affect as DVs. Covariates (age, SES, participants' ratings of the typicality of the situation and of objective likelihood of getting hurt) were entered in Step 1, enacted autonomy milestone measure and 3 dummy variables for country (US [0;1]; CA [0;1]; TR [0;1]; with Russia coded as 0 for each of these variables) were entered in Step 2, and interactions between enacted autonomy and dummy variables were entered in Step 3.

For negative affect experienced during the events, Step 1, $F(4,380) = 14.395$, $p < .001$, adjusted $R^2 = 0.12$, and Step 2 were significant, $F(8,376) = 11.29$, $p < .001$, adjusted $R^2 = 0.18$, R^2 change $= 0.06$, $p < .001$. Higher SES, being older and typicality of the situation were not associated with negative affect (all $B < |0.08|$, $\beta < |0.09|$, $t < 1.65$, ns). Rated likelihood of getting hurt was positively associated with negative affect ($B = 0.28$, SE $B = 0.04$, $\beta = 0.34$, $t = 7.02$, $p < .01$). In Step 2, being a participant in the US was associated with lower levels of negative affect ($B = -0.59$, SE $B = 0.16$, $\beta = -0.32$, $t = 3.69$, $p < .01$), while being a participant in CA and TR was not (all $B < |0.12|$, $\beta < |0.07|$, $t < 0.71$, ns), with RU in the model as a reference group. Enacted autonomy milestone measure was not a significant predictor of negative affect in response to specific risky situations ($B = -0.03$, SE $B = 0.07$, $\beta = -0.03$, $t = 0.51$, ns). Step 3 was not significant, adjusted $R^2 = 0.18$, R^2 change $= 0.01$, $p = .09$, indicating that interactions between enacted autonomy and cultural groups did not add to explained variance. Because RU was the reference category, its levels of negative affect in response to the risky events can be inferred from Table 1 (higher than the US and similar to CA and TU).

For positive affect experienced in response to risky situations, Step 1 was not significant, $F(4,378) = 1.07$, ns, adjusted $R^2 = 0.001$. Step 2 was significant, $F(8,374) = 2.89$, $p = .004$, adjusted $R^2 = 0.04$, R^2 change $= 0.05$, $p = .001$. Being a CA participant ($B = -0.41$, SE $B = 0.16$, $\beta = -0.23$, $t = 2.52$, $p < .01$) and later self-reported age of meeting enacted autonomy milestones ($B = -0.14$, SE $B = 0.07$, $\beta = -0.11$, $t = 2.07$, $p < .05$) were associated with lower levels of positive affect, with RU in the model as a reference group. The rest of predictors in the model were not significant: all $B < |0.18|$, $\beta < |0.086|$, $t < 1.80$, ns). Step 3 was not significant, adjusted $R^2 = 0.03$, R^2 change $= 0.002$, $p = .86$. Because RU was the reference category, its levels of positive affect in response to the risky events can be inferred from Table 1 (higher than the other three groups).

4. Discussion

In this study, we capitalized on individual and cultural differences in self-reported age of meeting enacted autonomy milestones to examine its association with perceptions of generalized and specific risk among emerging adults. These results suggest that emerging adults from different cultures have different levels of experience with enacted autonomy under their belts at the age when they are leaving or preparing to leave parental homes. Although ages at which young adults in our study reported having license to perform potentially risky activities in their local physical and social worlds differed across the four samples (with Russian emerging adults reporting performing these activities earlier and Canadian emerging adults later), the links between these milestones and affective responses to risk were not affected by culture.

We hypothesized that self-reported later age of meeting enacted autonomy milestones may be associated with evaluating one's local physical and social world as being less safe, a measure of perception of generalized risk. We found that emerging adults that reported meeting these milestones later, potentially implying lower developmental exposure to their local physical and social worlds, were more likely to evaluate their college-age environment as unsafe. This effect was small in magnitude. Although causality cannot be established based on retrospective correlational data, these findings suggest that scholars should direct their attention to developmental changes in perceptions of safety and the ways in which such perceptions may be affected by previous hands-on exposure to the threats and rewards of local risk ecologies.

Because generalized reports of safety may differ from response to specific situations, we also asked participants to describe specific risky events that occurred recently in their lives. These events were quite diverse, with their profiles differing by cultural context. Some of these differences, such as the tendency of the US students to describe being alone as a risk are intriguing and invite further research. It is possible that perceptions of what constitutes a risky event is itself shaped by one's developmental encounters with risk. As is typical of risky situations, these event descriptions tended to included elements that were potentially aversive (e.g., being threatened by someone while at a party) as well as those that were potentially rewarding (e.g., enjoying a party). We examined the associations between retrospectively recalled attainment of enacted autonomy and affective responses to these specific risks, assessing negative as well as positive affective responses.

We found that self-reported later age of meeting autonomy milestones was not associated with negative affect experienced in response to the aversive aspects of recent risky events. However, the later ages of meeting these milestones were associated with less intense positive affect in risky situations. This effect was small. It potentially indicated less attention to rewarding cues characteristic of many such situations. To the extent that responses to reward are linked with approach motivation, lower positive affect in response to risky events may point to less willingness to experience avoidable risks in one's local physical and social world. Future research can fruitfully examine this possibility using standardized measures of responses to risk.

This study did not address the nature of the links between enacted autonomy and responses to generalized and specific risks. Participants reports of risky events encountered in their childhood were consistent with their reports of enacted autonomy, with Russian emerging adults reporting that they encountered more risky situations as children than their peers in Canada and Türkiye, with the US students in between. Many Russian participants spontaneously reported that they experienced too many such events to count. Future work should seek to replicate these findings. If replicated, it would be important to examine whether the links between enacted autonomy and responses to risk may be due to exposure to community-specific risks or other conceptually related factors, such as higher levels of free play experienced by children with higher levels of enacted autonomy.

Participants' endorsement of some cultural values was associated with enacted autonomy. In particular, endorsing traditional Conservation values (e.g., valuing traditional norms of behavior) was associated with meeting enacted autonomy milestones later, whereas endorsing individualistic Openness to Change (e.g., valuing curiosity, adventure, doing things one's own way) was associated with meeting them earlier. These associations were very modest in size, suggesting that measures of cultural values and enacted autonomy are associated but distinct. These findings contradict prior findings that enacted autonomy is particularly low in countries with high levels of individualistic values. Country-level values refer to average values estimated for the population, whereas individual values are held by a given person. Our findings suggest that young adults with self-reported history of higher enacted autonomy tend to endorse individual values that are conceptually consistent with this history, such as the importance of exploration. It would be important to examine the same associations at the group level to better understand how community levels of conservation and openness to change values shape affordances for enacted autonomy as compared with individually-held beliefs.

4.1. Limitations and future directions

This study had a number of limitations. The measure of enacted autonomy was relatively crude. Participants reported the ages when a license to perform the listed tasks was first granted to them instead of reporting their overall developmental experience with these tasks. It is possible that some participants were granted a license by their parents, but did not actually engage with the task until later in their developmental trajectory. The measure also sampled a relatively small number of tasks and used a range of years rather than a specific age; both limitations can be improved in future work. Finally, this measure relied on retrospective recall, making it vulnerable to memory biases. The obtained data are broadly in line with studies examining enacted autonomy in children in the US, Canada and Russia via more objective methods, such as tracking children's movements and contemporaneous reports of enacted autonomy levels (e.g., Bochaver et al., 2017; Buliung et al., 2009; McDonald et al., 2011). Still, future research should utilize other approaches, such as parental reports and direct observations. It will also be important to assess enacted autonomy milestones longitudinally across childhood (e.g., crossing the street), adolescent years (e.g., using public transportation), and emerging adulthood (e.g., living away from home), examining whether earlier autonomy in exploring the physical and social world scaffolds the ability to gain age-appropriate autonomy skills later on.

Our sample size allowed us to detect small to medium effects; however, it may have been underpowered to detect smaller effects for analyses with a higher number of variables examining interactions of cultural values and cultural group in predicting enacted autonomy. Future work can benefit from this exploratory research and target particular cultural values and their links to enacted autonomy at the group and individual levels. It would be important to replicate this work with larger and more representative samples. The descriptions of risky life events were generated by participants, with different profiles of threats and rewards across individuals and cultural contexts. Although we did ask participants to rate objective risks posed by the situations, these ratings were likewise self-generated. Future work should examine subjective and behavioral responses of emerging adults to standardized risk tasks. Finally, our study was limited to college students from four countries. Future work should examine emerging adults who are not attending college and include samples from a wider range of cultural contexts.

In summary, this paper examined retrospective reports of developmental exposure to the local physical and social world and emerging adults' evaluations of the safety of their current contexts, a global evaluation of risk, and their emotional responses to risky situations, a specific emotional response to risk. This initial contribution invites other

researchers to think of autonomy and willingness to encounter risks not only as endorsed values, but as lived experiences that are practiced in communities and that may potentially impact emotional functioning. Finally, this study adds to extant work on local socioemotional ecologies of physical and social worlds by highlighting the psychological importance of developmental exposure to local context.

CRediT authorship contribution statement

Yulia Chentsova-Dutton: Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Derya Gürcan-Yıldırım:** Writing – original draft, Methodology, Investigation, Data curation, Conceptualization. **Jinli Wu:** Data curation. **Ilya Zakharov:** Investigation. **Andrew G. Ryder:** Writing – review & editing, Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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