Research Article

Cognitive Versus Affective Perceptions of Risks: What Do Students Think and Feel About Their Positive and Negative Risk Taking While Studying Abroad?

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Abstract

Research has examined how people think about their personal risks, but not how students conceptualize the risks they experience abroad. We examined how students describe their risks, how they see risk beliefs and experiences as tied to mitigation, and whether they view study abroad as a time to take (positive or negative) risks. We interviewed US-based college students (*N*=18) studying abroad in Denmark pre-pandemic. Themes revealed that students (1) saw study abroad as risky, (2) conceptualized their risks affectively and not cognitively, (3) described their worries (more about positive than negative risks) but rarely concrete mitigation steps, and (4) described taking some risks (more negative than positive risks) but rationalized and minimized their experiences. These results are theoretically important and practically useful because they help study abroad professionals consider ways to better prepare and support students based on an understanding of students' own risk perspectives.

Keywords

Affective risk; cognitive risk; education abroad; positive risk; risk perception

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1. Introduction

Risks pertain broadly to voluntary behavioral actions which have uncertain and variable consequences (Crone et al., 2016). By this definition, risk-taking is not inherently negative because any risk can have potentially positive or negative consequences, although most risk managers and researchers focus on risks with negative consequences (Patterson et al., 2022). It is difficult for people to calculate the exact risk of a behavior; this uncertainty is a key element in the definition of what a risk is; if the outcome is certain – whether good or bad – it would not be a risk (Duell & Steinberg, 2021). The study of risk perceptions – how an individual perceives their susceptibility to a threat – is extensive, although much of the research focuses on health-related risk beliefs and behaviors (for an overview see Ferrer & Klein, 2015). Studying abroad involves risks with potentially positive and negative outcomes. These risks depend on factors such as the degree of skills and preparedness of the student and the program provider; the country of study, type of housing, how much and where students travel independently; with whom students interact while abroad (e.g., fellow students, other students who study abroad, or local students, people in the community, host families); and external events (e.g., terrorism or pandemics). Risks in study abroad (and other domains) might be related to recreation, finances, social relationships, travel, or health, for which the outcome of choices can be good, bad, or a mixture (Figner & Weber, 2011; Fryt et al., 2022).

Once abroad college students experience a range of benefits (Mulvaney, 2017) but also take more risks (Aresi et al., 2016) and experience more victimization in some domains (Pedersen et al., 2021). However, there is to our knowledge no research on how students perceive their risks related to study abroad. We do not know how students themselves conceptualize the risks they take by going abroad, how they view their risks, and whether they see their study abroad as a time to take risks. Do they see a connection between their risk beliefs and behaviors? Do they consider prevalence and severity, or do they mostly reflect on their worries?

Understanding how students think about their risks is important, as risk beliefs are tied to risk behaviors (e.g., Sheeran et al., 2014) and understanding what people think about their risks can inform risk communication and mitigation efforts (Morgan et al., 2001). Study abroad programs, universities,

and other stake holders need to know what students think about the risks they anticipate, experience, or mitigate. Indeed, any behavior change depends, in part, on an alignment of the communication with people's conceptualization of risk (Morgan et al., 2001). Based on previous risk research we were particularly interested in learning more about the students' risk analysis process (risk-as-cognition vs. risk-as-feelings) and how they describe positive and negative risks.

1.1. Risk-as-Cognition vs. Risk-as-Feelings

Theories on how people approach the assessment of their risks have traditionally focused on risk-as-cognition, which assumes that people will consider and weigh logical, rational, reason-based, or systematic judgments of personal threat (for a review see Loewenstein et al., 2001). Similarly, theories of healthy decision making, including the health belief model (Rosenstock, 1974) and the protection motivation theory (Rogers, 1975), propose that assessment of personal risk is one factor motivating people to act. This personal risk assessment might include assessments of probability or severity or any other attempt to rationally consider a risk. For example, a student abroad might say it is a risk to have her phone stolen because she heard about it during a pre-departure-orientation or saw statistics from the US Department of State's Country Information page. Risk-as-cognition is sometimes called deliberative risk (Ferrer et al., 2016), personal risk perception (Helweg-Larsen & Shepperd, 2001), or cognitive risk (Helweg-Larsen et al., 2022). Here we use the terms "cognitive risk" or "risk-as-cognition."

In contrast, in the risk-as-feelings approach, research shows that people rely more on their feelings such as worry, fear, or anxiety to determine their risks (Slovic & Peters, 2006). This research shows that people do not do much deliberate risk analysis but use gut-reactions about their risks by assessing their emotions. People hear a question about risk and interpret it as a question about their worries ("risk as feelings"). This emotional risk assessment involves assessment of risk by drawing on one's felt or anticipated emotions. For example, a student abroad might say it is a risk (or a worry) to have her phone stolen because it would be difficult and expensive to replace it. Risk-as-feelings is sometimes called the affect heuristic (Slovic et al., 2007), anticipatory emotions (Loewenstein et al., 2001), or affective risk (Ferrer et al., 2016). Here we use the terms "affective risk" or "risk-as-feelings."

Meta-analytic research of experimental studies (across diverse types of risks) shows that cognitive and affective risk beliefs are related to each other, but each also uniquely contributes to an uptake of precautionary intentions and behaviors (Sheeran et al., 2014). When interviewed (e.g., Helweg-Larsen et al., 2010) people usually do not have difficulty describing in their own words how much they worry about a given outcome or the extent to which they consider severity or probability for a given outcome (e.g., getting lung cancer), but no research has examined how students describe the process by which they conceptualize their risks related to study abroad.

1.2 Positive vs. Negative Risks

The risk literature tends to focus on the negative consequences of risk taking rather than on the adaptive and developmentally normative aspect of risk taking in general (Duell & Steinberg, 2019). For example, risk research in the study-abroad context tends to focus on the prevalence of victimization (such as sexual violence) or problematic alcohol use (e.g., Kimble et al., 2013; Pedersen et al., 2020, 2021; Tamborra et al., 2020;) rather than beneficial aspects of positive risk taking. In research on adolescent development the distinction between good risk (e.g., *constructive*) and bad risks (e.g., *destructive*) is not new (e.g., Chassin et al., 1988), but recently, Duell and Steinberg (2019) have proposed a framework by which researchers can better understand how to define positive risks (for a review see Duell & Steinberg, 2021).

Generally, positive and negative risks lie on a continuum in which positive risks entails outcomes that are (1) beneficial to the person's development, growth, and wellbeing despite costs, (2) have costs that are generally mild in severity (in comparison to the costs resulting from negative risks), and (3) are legally and socially desirable (Patterson et al., 2022). Examples include making new friends, taking a challenging class, or planning a vacation to a new location. On the other end of the continuum are negative risks which consist of potential outcomes that are often anti-social or contribute negatively to growth and development, such as stealing, using drugs, or fighting (Duel & Steinberg, 2021). In the middle of the continuum are actions with both potentially positive and negative risks. For example, joining a street demonstration for a social cause might carry serious negative legal or physical health risks but also might carry developmentally appropriate growth opportunities in terms of standing up for one's beliefs.

Extensive information for study abroad professionals describes how to address students' risks abroad. These resources, and much of the conversation in the field, appear to focus on negative risks particularly related to health, safety, and security. The Forum on Education Abroad Standards indicate that professionals "shall prepare students to manage their safety by providing resources related to concerns including, but not limited to: physical risks, behavior, property crime, liability and legal issues, sexual misconduct, identity-based discrimination, and country-specific recommendations" (The Forum on Education Abroad, 2020, p. 33). At the same time, the Forum on Education Abroad recognizes that study abroad is seen as an opportunity for "student learning and development" through "the knowledge, understanding and personal growth" generated because of exposure to "new experiences, concepts, information and ideas" (2020, p. 21). In sum, although the term "risk" might largely be used to describe negative risks, positive risks (even if not described as such) also fall under goals for education abroad.

1.3. Location of Study Abroad Program

For this interview study we decided to pick a single study abroad location because risk perceptions are situated in a specific cultural context (Chauvin, 2018). We thought it would be valuable to understand students' perceptions of risk in a European location generally perceived as safe. Europe has long been the primary destination for U.S. college students studying abroad and the trend toward European study abroad appears to have accelerated because of the COVID-19 pandemic. According to the annual Open Doors Report, in the 2019-2020 academic year Europe held 58% of the market for study abroad, 66% in 2020 – 2021 and 73% in 2021-2022 (Institute of International Education, 2023b). While more recent numbers are not yet available, conversations with study abroad professionals suggest a continued trend toward European locations because they are seen as safer and with better systems in place to respond to crises (e.g., a pandemic). Thus, though situated in a specific cultural context, the results from this study could be generalizable to many study abroad students and provide insights on how to approach the conversation with students in locations perceived as higher risk.

1.4. Use of Interview Methodology

We chose to use qualitative interviews (as opposed to using survey methodology) because no prior research shows how students conceptualize

their risks while studying abroad. Although survey and experimental research on perceived risk is extensive in general (e.g., Ferrer & Klein, 2015) and with respect to positive and negative risks (for review see Patterson et al., 2022), interviews can reveal patterns of thinking about perceived risk that would not otherwise have been captured (e.g., Hay et al., 2005; Helweg-Larsen et al., 2010). In addition, the interview approach allows the interviewer to ask open-ended questions, letting participants describe their own thought process, feelings, and experiences. Unlike in a survey, the interviewer can probe for additional information and is not limited by preset questions or static answers. We were intentionally completely open to any types of words or language that students used in describing their risk-related thoughts and beliefs. In sum, we used interview methodology because it was the best method for answering our research questions. Simply allowing people to talk about how they experience their risks can contribute to a rich understanding of the process by which they arrive at how they think and feel.

1.5. Study Aims

In this interview study, we explored how students conceptualize their own risks when studying abroad in Copenhagen, Denmark, which is considered a relatively safe city. We examined three broad questions: (1) how students conceptualized their risks and the extent to which they described a cognitive process and/or an affective risk process, (2) how students saw their risk beliefs and experiences and their subsequent mitigation, (3) whether they viewed study abroad as risky and/or a time to take risks, and (4) how students described or possibly differentiated between positive and negative risks.

2. Method

2.1. Participants

We interviewed 18 students from U.S. universities and colleges studying abroad in Copenhagen, Denmark with DIS Study Abroad in Scandinavia. Interviews were conducted in April and May 2019 and in weeks 12-16 of the 17-week program. The average age was 20.6 (range 20-21) and most participants were women (17 women, 1 man, 0 gender diverse). We did not record any other demographic characteristics (their home institutions, race, nationality, etc.) because the purpose of this study was not to make demographic comparisons.

Among the 1,247 eligible students (at least 18 years old and enrolled for a single semester), we drew a random sample of students to contact. Students received an email describing the study and then two reminders encouraging non-respondents to participate. Seventy students received the recruitment email, and 18 agreed to participate, resulting in a response rate of 26%. Women made up a majority of the overall gender distribution both on the program that semester (76%) and study abroad nationwide for the same year (67%) (Institute of International Education, 2023a).

2.2. Procedure

The interviews lasted 40-70 minutes and followed a semi-structured format with open-ended questions that allowed the interviewer to explore the topics in necessary depth. The general question order was followed but some deviation allowed for a more naturally flowing discussion. One interviewer conducted all the interviews and care was taken to establish rapport with participants, avoid judgmental reactions, and reassure participants that they could speak freely. The interviewer was an early middle aged white American woman with extensive study abroad and higher education experience who works as an administrator in the US for the study abroad program.

Interviews were conducted in English. Participants were interviewed individually in a private space at the program location in Copenhagen and the interviewer, based in the U.S., conducted an audio-recorded interview via Zoom. Participants received the informed consent document via email prior to the interview. After arriving at the interview, students asked questions (if any) and read and signed the informed consent form. Students received 140DKK (approximately $21) for their participation. All interviews were transcribed by the Temi transcription software and then manually checked for accuracy. We used qualitative data analysis software (MAXQDA) to organize and manage the codes and themes. The research protocol was approved by the IRB at the University of Minnesota.

2.3. Interview Schedule and Analysis Strategy

2.3.1. Interview Schedule

The interviewer set a friendly and curious tone by inquiring briefly about how their time in the study abroad location was going so far. In the first set of interview questions, the interviewer asked students to think back to when

they were preparing to study abroad and asked both what types of things they looked forward to and what type of challenges they considered in anticipation of studying abroad. Then, students were presented with a list of specific events that they were asked to consider (see further description about this list in section 3.3.3). If a student said they did anticipate the event, the interviewer asked for more details including their beliefs about prevalence or severity, or degree of worry. In the second set of questions, students were asked about what they remembered they had learned about the event information, from whom (friends, family, media, study abroad programming, etc.) and how trustworthy these sources were. In the third set of questions, they were asked to reflect on the most important risk/worry and if they changed their risk beliefs or behaviors in response to this information (e.g., mitigation). In the fourth and last set of questions, the interviewer asked if students viewed study abroad as risky and as a time to take risks, and if they had experienced more risks abroad. The students were asked about the details of each risk they had worried about or experienced and if they had experienced any near misses (an event that could have gone poorly but did not) or heard stories from other students about their risk experiences or near misses. Finally, the interviewer asked if they had changed their risk beliefs or behaviors over the semester.

Throughout the interview the interviewer followed up every answer by probing for additional information about how students felt or what they thought and asked for more information about the situation (for example by asking: tell me more about that, what happened next, what did you do, why did you do that). We do not report any information about the sources of information and if those were trustworthy because the answers did not reveal patterns of understanding about how students conceptualized their risks. Specifically, students were generally not able to recall what they learned or from whom. They also did not see any specific sources (e.g., family, friends, online information, study abroad office) as untrustworthy.

2.3.2. Approach to Thematic Analysis

The analysis used a realistic epistemology in which it is assumed that participants can describe accurately their own experiences and meaning can be drawn in a straightforward way from participants' descriptions (Braun & Clarke, 2013). To understand the students' risk conceptualization, we paid attention both to what students said and what they did not say. We analyzed the interview data using the thematic analysis as outlined by Braun and Clarke

(2013). We individually completed each step, discussed results, and made modifications based on consensus. The six steps of our approach to thematic analysis were as follows. First, we read through the data and made informal notes of initial patterns and ideas. Second, we systematically and carefully read all the interviews and created initial codes (small grouping of related quotes). Third, we began searching for themes, or in other words a grouping of codes that are patterns of responses that shed light on the research questions. Fourth, we reviewed these themes to make sure the codes made sense within each theme. Fifth, we defined and named themes while keeping in mind the broader narrative structure of what patterns we saw in what the participants said and how these patterns related to each other. Finally, we selected quotes that illustrated each of the themes.

2.3.3. Approach to Analysis of Perceived Risk

Students were asked about their perceived risks in three distinct ways. First, we asked students to think back to the time when they were preparing to study abroad and reflect on any challenges they thought they might experience (on purpose, the word *risk* was not used in this question but used subsequently). Next, students were prompted with a list of typical negative risks while abroad (Hartjes et al., 2009) and asked if they had thought about each risk. Third, near the end of the interview, we asked the students to reflect on their most important risk. We approached the risk information in two different ways. First, we compared the answers before and after the list of specific risk questions to see if the list made any difference in how or what students discussed. It did not; thus, we do not report any results from the list. Second, because we found that students' answers to the question about "challenges" (the first open-ended risk question) were similar to their "most important risk" (the second open-ended risk question) we combined students' answers to these prompts.

2.3.4. Approach to Analysis of Positive and Negative Risk

At no time did we use the terms "positive" or "negative" risks; these terms were applied by us in the process of coding. During coding we used the definition of positive vs. negative risk from Patterson et al. (2022). We categorized the risks based not on the individual student's description of the risk but on the general expected benefits versus costs over time for that risk. Positive risks have greater expected benefits than costs over time (e.g., making new friends) whereas negative risks have greater costs than benefits over time (e.g., stealing). Thus, for example, if a student said it was good for her to do drugs

because it helped with her social anxiety, we would categorize doing drugs as a negative risk and not a positive risk because the expected costs of drug use over time exceed the expected benefits.

3. Results

The goal of this study was to understand how students think about the risks associated with study abroad. As shown in Table (1), four themes emerged. Each of these themes and subthemes is described in the following subsections.

TABLE (1)

TABLE OF THEMES

Themes	Sub-Themes
1. Students Saw Study Abroad as Risky	1.1. Studying abroad was seen as riskier[a] than studying at home
	1.2. Study abroad was seen as a time one ought to take (positive but not negative) risks
	1.3. Students described taking more risks[a] abroad than at home
	1.4. Study abroad benefits were seen as outweighing the risks[a]
2. Students Conceptualized their Risks as Feelings	2.1. Risks[a] were described as feelings
	2.2. Questions about risks[a] were interpreted as questions about worries
3. Students Described Worries but Rarely Mitigation	3.1. Students described worries about positive risks (i.e., cultural adjustment and relationships) more than negative risks (i.e., health, safety, and security)
	3.2. Few connections were made between their worries and risk[a] mitigation
4. Students Described Experiencing Incidents that they Rationalized and Minimized	4.1. Students described experiencing more health, safety, and security (i.e., negative risks) incidents than cultural adjustment and relationships (i.e., positive risks) incidents
	4.2. Risk[a] incidents were rationalized and minimized

[a]Students did not differentiate between positive and negative risk in this sub-theme.

3.1. Students Saw Study Abroad as Risky (Theme 1)

3.1.1. Study Abroad Was Seen as Riskier than Studying at Home

Nearly all students indicated that they saw study abroad as an increased risk as compared to staying on their home campus because of the unfamiliar

and unknown environment, language, and culture. One student summarized this feeling by saying,

> I mean, going to a new place is inherently a risk itself. You don't really know what's going to happen... anytime you go to a new place you don't know the culture, there are different rules ... [so you are] unsure about what you're doing. It's a risk. (P17)

Another said she thought it was riskier to go abroad than stay at home because "things [would be] new to me. It's different from my campus, which I had known for three years" (P8). Overall, students consistently saw the newness of study abroad as inherently risky.

3.1.2. Study Abroad Was Seen as a Time One Ought to Take (Positive but Not Negative) Risks

Students consistently indicated that they saw study abroad as a time one should take risks. For example, one student said,

> I think it is definitely a time that you should take more risks because once you are already outside your comfort zone [and] regular routines. Why not just take more steps outside of your comfort zone and just try new things? (P8)

Some students distinguished between the positive risks they felt should be taken—trying new things, traveling, and pushing oneself out of one's comfort zone—and the negative risks that should be avoided—drug use and staying out too late drinking. One student said,

> I think yes, you should try new things while abroad...but in other ways I would say no way, don't try anything new while abroad because you're in a new country. Don't try new drugs when you're abroad because that's just the worst idea. But try new things as in, travel and, go to things like art museums or do something that you wouldn't do back home (P3).

3.1.3. Students Described Taking More Risks Abroad than at Home

Students also said that, on reflection, they felt they had in fact taken more risks while abroad. One student said, "my home campus is really small and safe, and everyone takes care of each other and watches out for each other. While abroad, it's very much like everyone fends for themselves" (P3). She went on to talk about being out of her comfort zone and being more independent, including riding public transportation alone without texting someone to tell them when she would be home, which was her practice on her U.S. campus. Several students

also highlighted the increased risks of traveling in Europe during their semester abroad. For example, one student said, "whether getting to the airport by yourself, flying by yourself, taking a 12-hour bus ride through the night or something [else]. I would say that there's [more] risks because you're traveling more and going to so many different countries" (P4).

3.1.4. Study Abroad Benefits Were Seen as Outweighing the Risks

Several students suggested they ultimately made the decision to study abroad because they saw great benefit in doing so. For example, one student said, "I think overall I'd say it is a higher risk studying abroad but for much more reward" (P4). Several others conceptualized the risk as small compared to the increased opportunities. For example, one student said, "in comparison to the reward I was going to have by going on this experience, I thought that the risk was small [because] there are opportunities that are given here that I would not get at home" (P11).

When asked about the expected benefits of study abroad, most students pointed to a general expectation that the experience would be fun, amazing, or life changing. One student said she expected to "really grow as a person" (P2) and another said she hoped to "learn more about [herself] and become more independent" (P14). The more tangible and measurable benefits students mentioned included making new friends, travelling, and taking courses they could not take at home or courses with a different perspective than they would receive at home. Balancing costs with benefits as well as potential for growth is consistent with previous research in study abroad (e.g., Trower & Lehmann, 2017).

In sum, Theme 1 revealed that students conceptualized study abroad both as inherently risky and as a time to take positive but not negative risks. They said that they experienced taking more risks but viewed these risks as worth it because of the benefits.

3.2. Students Conceptualized Their Risks as Feelings (Theme 2)

3.2.1. Risks Were Described as Feelings

Overwhelmingly, students described the risks they considered or took in terms of their emotions (e.g., concern, worry, or fear) as opposed to a cognitive assessment (logical, reason-based, factual, systematic, or rational). This was true throughout the interviews regardless of how the questions of risk were worded

or framed, whether they were speaking about positive or negative risks, and whether questions were open-ended or prompted for specific risks. Thus, the students conceptualized risk-as-feelings and not risk-as-cognition.

All students said their risk perception was influenced by their own experiences growing up, life on campus and by personal stories that either worried or comforted them. These personal stories were tied to emotional assessment (concern, fear, worries) and not to analytic assessment. That is, students largely did not describe considering severity or prevalence information nor did they use objective sources of risk information such as their university's predeparture information or the U.S. Department of State Travel Advisory. Only two students very briefly cited specific evidence that informed their risk analysis. In both cases, the students pointed to the low crime rates of their host city/country as having reduced their worries. Otherwise, the interviews revealed a nearly complete absence of students using rational-based reasoning in describing their risks.

3.2.2. Questions About "Risks" Were Interpreted as Questions About "Worries"

In addition to describing risks in terms of feelings, students consistently interpreted the risk questions as pertaining to their feelings or worries. Regardless of how the risk question was asked they answered through a lens of risk-as-feelings and not risk-as cognition. One student, struggling with the concept of risk said, "Oh, I don't know if that counts as a risk, but it was kind of a worry, I guess" (P6). Another student illustrated the interchangeable nature of the concepts in her conceptualization in saying, "that was probably the biggest worry or risk that I was taking by coming abroad" (P14).

In sum, Theme 2 revealed that students described a process of risk-as-feelings instead of risk-as-cognition. Students also did not conceptualize their worries in terms of the prevalence (e.g., "I thought it was likely I would experience loneliness") or the severity of those events (e.g., "loneliness would be awful") but instead simply stated the extent to which they worried. As a result of students' conceptualization of risk-as-feelings, below we use *risk* and *worry* interchangeably to describe what students said.

3.3. Students Described Worries but Rarely Mitigation (Theme 3)

3.3.1. Students Described Worries About Positive Risks (Cultural Adjustment and Relationships) More than About Negative Risks (Health, Safety, and Security)

First, most students described positive risks/worries related to *cultural adjustment/adjustment to study abroad*. Students mentioned a multitude of concerns about money management, adjusting to a new academic schedule and housing, living with increased independence, traveling, and adjusting to local life (e.g., finding items in the grocery stores). One student said, "I was pretty worried about how long my funds would last that I had saved up" (P17). Another said, "I thought it might be challenging to try to figure out exactly how to get around everywhere with only public transportation. I'm obviously used to driving." (P9).

Second, many students described positive risks/worries related to *creating, building, and sustaining relationships*. They pointed to concerns about missing out on things at home, homesickness, disappointing parents, getting along with local roommates or host families, and making friends. One student said, that before she studied abroad, she "was definitely most afraid about not making friends" (P12). Another said,

> I think definitely my biggest worry was just missing out...not being present on my campus back at home...hearing about what opportunities people were going to be doing on campus...being presented opportunities to be a TA and having to turn that down (P11).

The third, and least important to the students, set of worries were negative risks related to *health, safety, and security*. These students pointed to worries about managing their mental or physical health (including access to prescription medicine), sexual assault and harassment, drug use, and theft/loss of valuables. For example, one student said,

> I've also struggled with mental health issues in the past, and just the semester before this one I had some really scary times where I needed my family. So, I guess it was a big risk for me because I didn't know how I would handle it if that situation came up again (P14).

Another said,

> Even in the states, if you go on dates with strangers or hook up with people, you run the risk of getting into a really bad situation...but I would say that I was more worried about what I would do if that did happen here (P17).

3.3.2. Few Connections Were Made Between Their Worries and Risk Mitigation

Students largely did not point to specific risk avoidance or mitigation steps they took to address their worries or perceived risks (whether positive or negative). No student recounted specific steps they had taken to address their worries related to the two most important types of worries: relationships and cultural adjustment. For example, students who were worried about creating, building, and sustaining relationships did not discuss specific steps they thought they would take or had taken to address the concern (e.g., they did not say they signed up for free social activities or planned standing walk-and-talk dates with a friend from home). Students that did mention a change in behavior in response to their worries were very general in their responses saying, for example, they put themselves "out there" (P3) or challenged themselves to step out of their "comfort zone and try new things" (P8).

However, some students who worried about health, safety, and security—the least important type of worry—did point to specific mitigation strategies. For example, a student who was worried about her mental health shared that she made a very purposeful plan for what resources she would utilize if she needed mental health support (P15). Another student who was most worried about a difficult hike as part of one of her courses, said "I did buy some more sturdy [and] robust gear that I can use...and also worked out a little bit to prepare" (P8). For another who was really worried about being pickpocketed, there was an attempt to "not keep things in back pockets and keep bags in the front" (P4). In sum, Theme 3 revealed that students worried most about positive risks including cultural adjustment and relationship risks. They worried less about negative risks including those related to health, safety, and security. Students generally did not describe taking specific action to reduce their worries or mitigate their risks except in a few instances related to health, safety, and security worries.

3.4. Students Described Experiencing Incidents That They Rationalized and Minimized (Theme 4)

3.4.1. Students Described Experiencing More Health, Safety and Security (i.e., Negative Risk) Incidents than Cultural Adjustment and Relationships (i.e., Positive Risks) Incidents

When asked about the experiences or near-misses they experienced during their study abroad program, most talked about *health, safety, and security* incidents—those negative risks they only rarely anticipated or worried about—including physical and mental health, drugs and alcohol, theft and loss of valuables, physical safety, and sexual assault/harassment. One student said, "I was still carrying my luggage and I was [in] probably the busiest metro station of Paris...I felt that my phone, which was in my pocket was taken" (P8). Another student said, "I definitely have almost gotten in a few bike accidents" (P12), and one student talked about using a lot more marijuana while abroad than at home (P13). Finally, one student said that after drinking too much one night she "ended up sleeping with somebody that [she] didn't really want to" (P17).

Many students pointed to having experienced *cultural adjustment* incidents—those positive risks they most often anticipated—including issues with academics, money, travel, and public transportation. One student said, "I took some classes outside of my normal realm" and one of those classes "challenged me a lot more than I thought it would...which has been a struggle for me" (P1). Several students talked about traveling alone or with people they did not know, and one student said, "Travel! There are a lot of unknown factors [which] could happen and actually did happen" (P8). Several students mentioned issues with public transportation including taking the wrong bus or missing their train.

Some students shared *creating, building, and sustaining relationships* incidents they had experienced—the positive and second most anticipated type of risk—including those with roommates and hosts, being away from home and missing out, and not making friends. For example, one student said, "I took some risks on having certain conversations with my host mom because not everyone is ready or equipped or open enough to have certain conversations" including the "time when we talked about the 'N word'" (P17). Another, who experienced a lot of home sickness, said, "I got here and I cried. I FaceTimed my mom and brother. It was a period of a lot of lows" (P16).

3.4.2. Risk Incidents Were Rationalized and Minimized

Students did not describe becoming more worried or risk averse because of their personal experiences with risk. Instead, they rationalized or minimized their risks. When asked about their response to risks, students most often used *rationalization*. While many students mentioned negative reactions to risk taking including stress, fear, and upset, nearly all rationalized their risk taking by stating it resulted in positive outcomes including closer friendships, new relationships with locals, lessons learned, increased independence, and rewarding experiences (especially travel). For example, a student described being drunk and as a result, she and her friend left with someone else's wallet. She said, "I definitely think my friend and I got closer because we were called in together to talk about our side of the story…she thought I was an awesome friend for finding her real wallet" (P2). Another student described an evening where she "drank a ton" and "had a terrible night" and then said, it was a "really valuable experience" because she realized "I can be drunk and have fun and it doesn't have to be all bad" (P5). Yet another student talked about the value of regularly smoking marijuana, a risk she had not taken before study abroad, because it helped her get closer to her roommate (P13).

Some students *minimized* risks by pointing to having experienced some minimal level of stress or fear but nothing too serious. Students used language including "nothing horrible" (P17), "nothing serious or super crazy or bad has happened" (P5), and "I was fine" (P3). In the wallet example discussed above, the student said, "it could have led to dismissal from the program," however, it turned out OK because "everyone got their wallet back, which was a good, happy story at the end of the day" (P2). In another example, a student talked about several risks she had taken throughout the semester including drinking heavily, going back to stranger's houses after a night of drinking, staying overnight in a German train station for 6 hours, and trying to get home at 4:00 in the morning after a night of drinking. In each situation she said that "nothing has ever happened," "nothing bad has ever come from it," and "everything was perfectly fine" (P13).

In sum, theme 4 showed that when asked about risk experiences during study abroad students most often talked about health, safety and security risks and rationalized or minimized their risks.

4. Discussion

In this qualitative interview study of students studying abroad, four themes emerged revealing students' mental models about their risks abroad: students (1) saw and experienced study abroad as risky; (2) described a risk process of risks-as-feelings and not risk-as-cognition; (3) described worries about positive risks--including cultural adjustment and relational risks--as opposed to negative risks–including health, safety and security risks–but rarely tied their worries to mitigation; and (4) described health, safety, and security incidents (i.e., negative risks) and less cultural adjustment and relationship related incidents (positive risks), but they rationalized and minimized their risks.

4.1. Theme 1 and Applications

We found strong evidence for the home-is-safer-than-abroad bias (Wolff & Larsen, 2016). All students reported that they thought it was riskier to study abroad because the new place was unfamiliar. It is well documented that unfamiliarity is associated with higher perceived risk (Morgan et al., 2001). Furthermore, students anticipated taking more risk overall, but they focused on (positive) risks while abroad such as exploring new places and social situations (e.g., making new friends or adjusting to a new culture) and did not say that study abroad was a time one ought to take (negative) risks such as partying more or having unprotected sex. The positive risk taking the students described fits with the general definition of positive risk taking, which is that the behavior should benefit the person's well-being over time, have minor potential costs relative to the benefits, and be socially acceptable and beneficial to growth (Duel & Steinberg, 2021; Patterson et al., 2022). The study abroad experience itself can be viewed as a positive risk in that it includes social risks (e.g., making new friends), academic risks (e.g., taking a challenging class), and extracurricular risks (e.g., navigating travel logistics). Our results suggest "good news" for study abroad professionals in that these students described wanting to engage by challenging themselves in positive ways but did see study abroad as an opportunity to take negative risks.

4.2. Theme 2 and Applications

We also found strong and consistent evidence that students described using an affective risk process in which they conceptualized their risks as feelings (specifically worry) and not as cognition. In short, when considering the

risks they faced, students reported the extent to which they worried. Thus, common study abroad challenges such as meeting new people, adjusting to grocery stores, or delayed flights were seen as risks because the students thought of risks as worries. This reliance on risk-as-feelings is well documented (e.g., Slovic et al., 2007) but it was nevertheless noteworthy to find a nearly complete absence of risk-as-cognition. Students did not describe risks in terms of probability nor severity nor did they recall learning about risks in this way. One application of this finding is that study abroad professionals (who are often trained to identify and mitigate risks based on a probability x severity matrix) should realize that students think affectively. They could teach students the distinction of risk-as-feelings vs. risk-as-cognition and emphasize that it is normal to worry about unknown or unfamiliar situations but that such daily living challenges will often be sorted out in time. This message can be underscored by drawing on first-hand stories of study abroad alumni who can speak about what they worried about and how they managed or resolved their concerns.

4.3. Theme 3 and Applications

Students worried more about positive risks than about negative risks. This aligns with previous research showing that both adolescents and adults worry mostly about risks within the social domain and only rarely worried about risks related to health or safety (Patterson et al., 2022). This finding can also be understood in terms of the classic two-factor risk space in which risks are mapped on to four quadrants made by the x-axis from low to high dread risk and the y-axis from new/unfamiliar to existing/familiar risks (Slovic, 1987). The students' worries fell mostly in the quadrant of new/unfamiliar risk and low dread (e.g., learning cultural contexts and creating new relationships). Study abroad professionals do discuss such topics (e.g., acculturation) but rarely frame them as "risks," instead focusing on risks such as mental and physical health, alcohol use, and sexual assault (Marcantonio et al., 2020), which are in the quadrant of existing/familiar risks high in dread. Students might not have worried about these familiar, high dread risks because such risks are part of the fabric of their college life in the U.S., students feel they have already received instruction on mitigating these risks, they think they have the needed skills to handle these risks, or they are optimistically biased in thinking that bad things are more likely to happen to other students than themselves (e.g., Helweg-Larsen et al., 2008).

In addition, students rarely reacted to their worries by describing changing their behaviors. Research shows that worry can play a larger role than cognitive risk in influencing preventative behaviors (such as for COVID-19 precautions; Helweg-Larsen et al., 2022) and worry does predict preventative intentions and behavior (Sheeran et al., 2014). However, the students did not describe changing their behaviors in response to their worries nor did they identify changes they would make following incidents. Instead, the risks/worries students described were seen as minor (that is, not needing preventative actions) or inevitable (that is, no matter what they did these were an inherent/necessary part of study abroad). This highlights the importance of professionals helping students better understand the benefits of positive risk-taking during study abroad and how to use specific strategies as well as goal setting to make the most of these opportunities.

4.4. Theme 4 and Applications

Though more worried in anticipation about positive risks, students recalled more negative risk experiences. This aligns with research showing that people more readily recall bad than good things happening (Baumeister et al., 2001). It also further supports the suggestion that students' own perceptions of what risks they would face (positive risks) might not be an accurate reflection of the experiences they will have abroad. For example, research shows that for some domains such as sexual assault, students need more detailed information about how to mitigate such risks and the unique challenges that exist in the study-abroad situation (Pedersen et al., 2021). Thus, we suggest that after addressing student concerns about positive risks, they still need to hear about negative risks and mitigation strategies.

When students described their risk experiences, they rationalized and minimized them, which is a common reaction to (negative) risk taking (Klein & Weinstein, 2015). Professionals may be able to draw out the rationalization and minimization that is part of students' risk beliefs and help students normalize both their worries and the importance of taking positive risks. However, when discussing health, safety and security risks, students could articulate using specific mitigation strategies. Thus, these findings also support continuation of messaging on health, safety and security risks and mitigation.

4.5 Limitations

One strength of this study was the use of interview methodology which allowed us to examine novel questions about how students conceptualize their risks abroad. However, the study was limited in that the sample size did not allow us to study gender differences or the role of other student demographics. One study examining risk perceptions among study abroad students did not find any differences in student's risk perception as a function of gender, age, marital status, or year in school (Lam et al., 2017), but future research with large survey samples could examine which student characteristics are associated with different perceptions of risk or worries. A second limitation is that we only studied a single specific context. While more adventurous students might be attracted to study abroad in the first place (Relyea et al., 2008), locations seen as safer (such as Denmark) might attract more risk-averse students compared to other study-abroad locations. These results might generalize to other locations perceived as safe, but it would be important for future research to examine risk narratives for students in other locations.

4.6. Additional Applications to Study Abroad

Drawing on collaborations across campus, including with student affairs, study abroad professionals could spend more time providing specific strategies to address or mitigate the things students worry about. One way to do this might be to remind students about the broad risk continuum for students on U.S. campuses (e.g., making new friends, crossing a busy road to get to class, U.S. gun violence) and ask them to reflect on the skills they have used to navigate these risks. Students could also be provided with specific tools to more directly address their worries rather than simply rationalizing or minimizing them. Many of these worries mirror those on campus, so a strong collaboration with colleagues on campus may be fruitful in supporting the student throughout their entire time at college/university. Considering student perspectives on risks abroad is even more important now, as study abroad professionals and study affairs professionals alike see students who seem less mature, less resilient, and less able to manage their risks and worries following the huge disruptions of the COVID-19 pandemic. Clearly, the study abroad experience gives students key opportunities to take positive risks, which have a high likelihood of resulting in growth and learning, while at the same time managing negative risks.

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References

Aresi, G., Moore, S., & Marta, E. (2016). Drinking, drug use, and related consequences among university students completing study abroad experiences: A systematic review. *Substance Use & Misuse, 51(14),* 1888–1904. https://doi.org/10.1080/10826084.2016.1201116

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, *5*(4), 323–370. https://doi.org/10.1037/1089-2680.5.4.323

Braun, V., & Clarke, V. (2013). *Successful Qualitative Research*. Sage.

Chassin, L., Presson, C. C., & Sherman, S. J. (1989). "Constructive" vs. "destructive" deviance in adolescent health-related behaviors. *Journal of Youth and Adolescence, 18*(3), 245–262. https://doi.org/10.1007/BF02139039

Chauvin, B. (2018). Individual differences in the judgment of risks: Sociodemographic characteristics, cultural orientation, and level of expertise. In *Psychological Perspectives on Risk and Risk Analysis* (pp. 37–61). Springer International Publishing. https://doi.org/10.1007/978-3-319-92478-6_2

Crone, E. A., van Duijvenvoorde, A. C. K., & Peper, J. S. (2016). Annual research review: Neural contributions to risk-taking in adolescence - developmental changes and individual differences. *Journal of Child Psychology and Psychiatry, 57*(3), 353–368. https://doi.org/10.1111/jcpp.12502

Duell, N. & Steinberg, L. (2019). Positive risk taking in adolescence. *Child Development Perspectives, 13(1)*, 48–52. https://doi.org/10.1111/cdep.12310

Duell, N., & Steinberg, L. (2021). Adolescents take positive risks, too. *Developmental Review, 62*, 100984–. https://doi.org/10.1016/j.dr.2021.100984

Ferrer, R. A., & Klein, W. M. (2015). Risk perceptions and health behavior. *Current Opinion in Psychology, 5*, 85–89. https://doi.org/10.1016/j.copsyc.2015.03.012

Ferrer, R. A., Klein, W. M. P., Persoskie, A., Avishai-Yitshak, A., & Sheeran, P. (2016). The tripartite model of risk perception (TRIRISK): Distinguishing deliberative, affective, and experiential components of perceived risk. *Annals of Behavioral Medicine, 50*(5), 653–663. https://doi.org/10.1007/s12160-016-9790-z

Figner, B., & Weber, E. U. (2011). Who takes risk, when and why? Determinants of risk taking. *Current Directions on Psychological Science, 20*(4), 211–216. https://doi.org/177/0963721411415790

Forum on Education Abroad. (2020). Standards of Good Practice for Education Abroad-Enhanced 6th Edition. https://www.forumea.org/standards-of-good-practice.html

Fryt, J., Szczygieł, M., & Duell, N. (2022). Positive and negative risk-taking: Age patterns and relations to domain-specific risk-taking. *Advances in Life Course Research, 54*, 100515–100515. https://doi.org/10.1016/j.alcr.2022.100515

Hartjes, L. B., Baumann, L. C., & Henriques, J. B. (2009). Travel health risk perceptions and prevention behaviors of US study abroad students. *Journal of Travel Medicine, 16*, 338–343. https://doi.org/10.1111/j.1708-8305.2009.00322.x

Hay, J., Shuk, E., Cruz, G., & Ostroff, J. (2005). Thinking through cancer risk: Characterizing smokers' process of risk determination. *Qualitative Health Research, 15(8),* 1074–1085. https://doi.org/10.1177/1049732305276682

Helweg-Larsen, M. & Shepperd, J. A. (2001). Do moderators of the optimistic bias affect personal or target risk estimates? A review of the literature. *Personality and Social Psychology Review, 5(1)*, 74-95. https://doi.org/10.1207/S15327957PSPR0501_5

Helweg-Larsen, M., Harding, H. G. & Kleinman, K. E. (2008). Risk perceptions of dating violence among college women: The role of experience and depressive symptoms. *Journal of Social and Clinical Psychology*, *27(6)*, 551-571. https://doi.org/10.1521/jscp.2008.27.6.600

Helweg-Larsen, M., Peterson, L. M., & DiMuccio, S. H. (2022). The interplay between cognitive and affective risks in predicting COVID-19 precautions: A longitudinal representative study of Americans. *Psychology and Health.* https://doi.org/10.1080/08870446.2022.2060979

Helweg-Larsen, M., Tobias, M. R., & Cerban, B. M. (2010). Risk perception and moralization among smokers in the U.S. and Denmark: A qualitative approach. *British Journal of Health Psychology, 15(4),* 871-886. https://doi.org/10.1348/135910710X490415

Institute of International Education. (2023a). Open Doors Complete Data Set. https://opendoorsdata.org/wp-content/uploads/2023/11/Open-Doors-2023_US_Study_Abroad_Tables.xlsx

Institute of International Education. (2023b). Open Doors Study Abroad Host Regions. https://opendoorsdata.org/data/us-study-abroad/host-regions/

Kimble, M., Flack, W. F., & Burbridge, E. (2013). Study abroad increases risk for sexual assault in female undergraduates: A preliminary report. *Psychological Trauma*, *5*(5), 426–430. https://doi.org/10.1037/a0029608

Klein, W.M.P., & Weinstein, N. D. (2015). Health risk appraisal and optimistic bias. In J.D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed., Vol. 10, pp. 698-701).

Lam, J.M.S., Tong, D. Y. K., & Ariffin, A. A. M. (2017). Exploring perceived risk and risk reduction strategies in the pursuit of higher education abroad: A case of international students in Malaysia. *Journal of Studies in International Education, 21(2),* 83–104. https://doi.org/10.1177/1028315316662980

Loewenstein, G., Weber, E., Hsee, C., & Welch, N. (2001). Risk as feelings. *Psychological Bulletin, 127(2),* 267–286. https://doi.org/10.1037//0033-2909.127.2.267

Marcantonio, T. L., Angelone, D. J., Swirsky, J., & Joppa, M. (2020). An analysis of the sexual health and safety information study abroad directors present their students prior to departure. *Journal of American College Health, 68(1)*, 11–15. https://doi.org/10.1080/07448481.2018.1515758

Morgan, M. G., Fischhoff, B., Bostrom. A., & Atman, C. J. (2001). *Risk communication: A mental models approach*. Cambridge University Press.

Mulvaney, M. K. (2017). The long-term impact of study abroad on honors program alumni. *Frontiers: The Interdisciplinary Journal of Study Abroad, 29 (1)*, 46–67.

Patterson, M. W., Pivnick, L., Mann, F. D., Grotzinger, A. D., Monahan, K. C., Steinberg, L. D., Oosterhoff, B., Tackett, J. L., Tucker-Drob, E. M., & Harden, K. P. (2023). A mixed-methods approach to refining and measuring the construct of positive risk-taking in adolescence. *Journal of Research on Adolescence, 33*(2), 680–700. https://doi.org/10.1111/jora.12807

Pedersen, E. R., DiGuiseppi, G., Klein, D. J., Davis, J. P., Farris, C., D'Amico, E. J., LaBrie, J. W., & Griffin, B. A. (2021). Sexual violence victimization among American college students studying abroad. *Journal of American College Health*, *71*(6), 1947–1956. https://doi.org/10.1080/07448481.2021.1950733

Pedersen, E.R., D'Amico, E. J., LaBrie, J. W., Klein, D. J., Farris, C., & Griffin, B. A. (2020). Alcohol and sexual risk among American college students studying abroad. *Prevention Science, 21(7)*, 926–936. https://doi.org/10.1007/s11121-020-01149-9

Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology, 91*(1), 93–114. https://doi.org/10.1080/00223980.1975.9915803

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs, 2*(4), 328–335. https://doi.org/10.1177/109019817400200403

Relyea, C., Cocchiara, F. K., & Studdard, N. L. (2008). The effect of perceived value in the decision to participate in study abroad programs. *Journal of Teaching in International Business*, *19*(4), 346–361. https://doi.org/10.1080/08975930802427551

Sheeran, P., Harris, P., & Epton, T. (2014). Does heightening risk appraisals change people's intentions and behavior? A meta-analysis of experimental studies. *Psychological Bulletin*, *140*(2), 511–543. https://doi.org/10.1037/a0033065

Slovic, P. (1987). Perception of risk. *Science, 236(4799)*, 280–285. https://doi.org/10.1126/science.3563507

Slovic, P. & Peters, E. (2006). Risk perception and affect. *Current Directions in Psychological Science*, 15(6), 322–325. https://doi.org/10.1111/j.1467-8721.2006.00461.x

Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European Journal of Operational Research, 177*(3), 1333–1352. https://doi.org/10.1016/j.ejor.2005.04.006

Tamborra, T. L., Baker, A. N., Jeffries, S., Tempio, M., & Campbell, E. (2020). Criminal victimization experienced while studying abroad: An examination of rates and other relevant factors. *Journal of Studies in International Education*, *24*(5), 573–588. https://doi.org/10.1177/1028315319861354

Trower, H. & Lehmann, W. (2017). Strategic escapes: Negotiating motivations of personal growth and instrumental benefits in the decision to study abroad. *British Educational Research Journal, 43(2)*, 275–289. https://doi.org/10.1002/berj.3258

Wolff, K. & Larsen, S. (2016). Flux and permanence of risk perceptions: Tourists' perception of the relative and absolute risk for various destinations. *Scandinavian Journal of Psychology*, *57*(6), 584–590. https://doi.org/10.1111/sjop.12326

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