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Exploring Exploration: Identity Exploration in Real-Time Interactions among Peers

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ABSTRACT

In this short-term longitudinal study, we examine specific examples of identity exploration in real-time interactions among peers. The participants included 12 first-year students majoring in literature, social sciences, and humanities at a national university in Japan (M_{age} = 18.2; SD = 0.39; 83.3% female). They were divided into four triads that participated in weekly 20-minute discussions for nine successive weeks around three identity domains: learning, romantic relationships, and career. Transcripts were analyzed using a grounded theory approach. Seven characteristics of exploration were identified in real-time interactions: support, open disclosure, meta-exploration, investigating, creating an idea, conflict, and demotivating. In addition, these characteristics generated three major overarching patterns that advanced exploration: creating a safe environment for exploration, clarification and elaboration of the idea embedded in support essential for promoting exploration, and a combination of finding a keyword and repeating it on the border between exploration and discovering an aspect of identity. Overall, our results reveal that exploration in real-time interactions among peers did not involve a fixed sequence of characteristics; rather, it was vitalized by mutual affirmation, going back and forth among different characteristics of exploration while taking small steps.

In this article, we address how identity exploration (hereafter, exploration) manifests itself in the real-time interactions among youth. Exploration refers to an individual's active engagement in searching for and investigating meaningful alternatives in important life areas (Marcia, 1966). Previous longitudinal studies have examined exploration using two different time scales: long-term exploration assessed on a yearly or monthly basis (e.g., Meeus et al., 2012) and short-term exploration assessed on a weekly or daily basis (e.g., Klimstra et al., 2010). Short-term exploration is extremely important in understanding the process of identity formation (Bosma & Kunnen, 2001). However, less is known about how exploration herein is expressed in individuals' ongoing actions that last minutes or seconds, namely *exploration in real-time*. A focus on exploration in real-time allows one to capture mechanisms of identity formation, because it consists of concrete actions unfolding in real-time that result in long-term developmental outcomes (Granic, 2005; Lichtwarck-Aschoff et al., 2008). Moreover, although exploration occurs in relational contexts, particularly peer relationships (e.g., Sugimura & Shimizu, 2010), studies on exploration in real-time interactions are still scarce. Therefore, in this study, we examine specific examples of exploration in real-time interactions among peers and identify these characteristics using qualitative data from young adults. In doing so, we provide a detailed portrayal of the Erikson's (1968) tenet that identity primarily develops through ongoing, moment-to-moment communication that involves "a mutual affirmation" (p. 219) between the self and the other.

Exploration in real-time

Identity formation is a crucial developmental task in adolescence and young adulthood (Erikson, 1968; see also, Arnett, 2014). Drawing upon Erikson's theory, Marcia (1966) conceptualized identity formation focusing on two processes – exploration and commitment. Exploration refers to an individual's active engagement in searching for and investigating meaningful alternatives in important life areas. Commitment is defined as the degree of personal investment in the choices they made. Important life areas include career, relationships, sexuality, and ideologies such as religion and politics (Kroger & Marcia, 2011). The recent extension of Marcia's concepts divided exploration into two dimensions: *depth* and *breadth*. The *depth* dimension, termed exploration in depth (Luyckx et al., 2006) or in-depth exploration (Crocetti et al., 2008), refers to the evaluation of how well the chosen idea (e.g., romantic relationships and future plans) is perceived to fit with the self. The *breadth* dimension, termed exploration in breadth (Luyckx et al., 2006) or reconsideration of commitment (Crocetti et al., 2008), indicates the extent to which individuals actively search for alternative identity options.

Identity formation is a constantly ongoing process of strengthening and weakening commitments through exploration (Bosma & Kunnen, 2001). Exploration is often triggered by conflict, which is a threat to one's goals or concerns (Lichtwarck-Aschoff et al., 2010). Conflict may occur with another person, but it may also be an internal process or event. If one perceives that something happening is at odds with a present commitment, exploration may commence, while the weakening or change in the content of commitment persists (Kunnen, 2006). In addition, if one has not yet formed a commitment but feels that something contradicts current identity-related ideas, one may feel the need to form a commitment and begin exploration. Thus, exploration is triggered by conflict and plays a significant role in shaping commitments.

Previous longitudinal studies have examined exploration using two different time scales: *long-term exploration* assessed on a yearly or monthly basis and *short-term exploration* assessed on a weekly or daily basis. Studies on short-term exploration have examined the levels of the breadth and depth of exploration, focusing on the day-to-day fluctuations among individuals (Klimstra et al., 2010) and within an individual (Becht et al., 2021). As identity can be described as a dynamic and self-organizing system (van der Gaag et al., 2020), an identification of the processes through which short-term exploration emerges within the context of everyday interactions is important to better understand identity formation (Lichtwarck-Aschoff et al., 2008). This is because, from a dynamic systems perspective, long-term developmental outcomes, such as identities, are assumed to result from moment-to-moment direct experiences, repeated over many occurrences (Granic, 2005). However, while the short-term approaches that prior studies have used are effective in describing the day-to-day quantitative changes in exploration, the definition of exploration in these questionnaire-based approaches focused on abstract reflections of exploration that do not represent concrete micro-level actions (see Klimstra & Schwab, 2021, in this special issue). Thus, these questionnaire-based approaches are less suitable to study how exploration occurs and how it is expressed in individuals' ongoing actions that last mere minutes or seconds – an exploration in real-time. Moreover, youth do not live in a social vacuum; however, prior studies have considered youth's processes of exploration without taking into account interactions with others. Therefore, this study adopts a micro-longitudinal and qualitative approach to investigate the characteristics of exploration in real-time interactions.

Exploration in peer interactions

Identity formation occurs within relational contexts, including parents, peers, and romantic relationships (Josselson, 1994; see also, Ferrer-Wreder & Kroger, 2020). Peer relationships play a crucial role in identity formation among young adults (Kerpelman & Pittman, 2001; Sugimura & Shimizu, 2010). Previous studies indicated that relationships with peers facilitated exploration rather than

commitment. Indeed, in a laboratory study, youth were extremely embarrassed and began to engage in exploration when they received discrepant feedback from peers that contradicted their current self-views (Kerpelman & Pittman, 2001), suggesting that feedback from peers increased the uncertainty of current commitment and this triggered exploration. Another study using written narratives reported that youth were led to exploration by their peers acting as agents, effectively setting positive goals for them (Sugimura & Shimizu, 2010), indicating that the guidance of peers directed youth to discover their commitments. Thus, the role of peers in exploration is significant for facilitating exploration in a variety of ways by bewildering, motivating, and encouraging individuals.

Three prior narrative studies focused on real-time interactions among peers related to adolescent and young adult identity formation (McLean & Jennings, 2012; Moffitt & Syed, 2020; Morgan & Korobov, 2012). These studies examined how youth structured conversations about identity-related issues and co-constructed their identities. For instance, one study on ethnic-racial identity examined the themes that appeared in the content (topics) and structure (length and depth) of conversation between young adult peers (Moffitt & Syed, 2020). Two further studies, one on narrative identity (McLean & Jennings, 2012) and one on dating identity (Morgan & Korobov, 2012), described how adolescents and young adults facilitated their peers' identity formation through actions such as scaffolding, providing a safe space, and support. These studies fostered an understanding of the interactions in identity-related conversations in real-time, suggesting that exploration in the context of peer relationships may need a safe environment created with those characteristics (e.g., support). These studies did not, however, concentrate on exploration itself.

The current study

Our primary aim was to examine how exploration manifests itself in real-time interactions among peers. Thus, using a qualitative, grounded theory approach (Charmaz, 2014), we first identified specific characteristics of exploration, then investigated how these characteristics manifested in interactions and functioned in the developmental process. Because of the generative nature of this approach – which emphasizes the researcher's involvement in the construction and interpretation of the data – we did not formulate specific hypotheses.

Our study setting was a university course, in which we followed students' discussions on three identity-related issues (learning, romantic relationships, and career) for nine weeks. A university is an ideal setting for exploration because it provides youth with rich opportunities (e.g., time and resources) to enhance their prospects and identity options, especially for those who have active motivations (Côté & Levine, 2015), a contextual feature that is prominent in Japan where this study was conducted. The majority of university students (58.6%) were in the 18-year age cohort in Japan (Ministry of Education, Culture, Sports, Science and Technology, 2020). Many young Japanese individuals do not take on full adult roles until their thirties (Arnett et al., 2014); hence, the period of exploration is expanded into young adulthood (Sugimura, 2020). Indeed, a study showed that young adults (mostly university students) exhibited a high level of reconsideration of existing commitments compared to adolescents (Hatano et al., 2016), suggesting that they may engage in prolonged exploration. Therefore, Japanese university students may be an appropriate exemplar for understanding the real-time process of exploration in greater detail.

Methods

Participants and procedure

The participants were 12 first-year university students at a large national university in Japan (M_{age} = 18.2; SD = 0.39; 83.3% female), majoring in economics (n = 6), literature (n = 3), education (n = 2), and law (n = 1). The university is located in Chubu district, an urban area in the central part of Japan. This university majorly comprises students with middle-class socioeconomic backgrounds from this

district, who have had moderate to high academic achievement in high school. The study was conducted during a first-year course on academic skills (e.g., writing and presentation) during the students' first semester. This period is critical for students' identity formation in Japan because many Japanese adolescents in secondary school concentrate more on studying for entrance examinations and less on identity formation, and hence, tend to experience an identity crisis after entering university (Sugimura & Shimizu, 2010). The participants were students who voluntarily registered for this course; the study purpose and research design were explained in the syllabus for the course. Specifically, the syllabus required students to undertake the task of exploring their own identity through a series of group discussions that focused on three identity-related issues: learning in university, romantic relationships, and future careers. All registrants provided signed informed consent; thus, all students who registered for this course accepted participation in the study. To assess whether the participants had a specific psychosocial characteristic that might relate to their way of exploration in interactions, we assessed their overall sense of identity using the Erikson Psychosocial Stage Inventory (Rosenthal et al., 1981). Compared to broader university students in Japan (Sugimura et al., 2016), the participants in this study did not vary significantly in terms of an overall sense of identity, which was moderate to high (M = 3.11, SD = 0.68 on a 5-point scale). This study was approved by the Ethics Committee of Hiroshima University.

Research design

The participants were divided into four triads (Groups A to D). Each group had a weekly 20-minute discussion for nine successive weeks about three identity domains: learning (weeks 1–3), romantic relationships (weeks 4–6), and careers (weeks 7–9). The triads were randomly regrouped every three weeks to reduce the possibility of the same students meeting each other in different identity domains. In the first week of each identity domain, a set of questions was provided to participants to stimulate their discussions. The questions in the learning domain were formulated based on the definition of identity exploration in the learning domain (Sugimura & Shimizu, 2011): "Have you recognized any discrepancies between learning in high school and learning in university? What kinds of abilities do you think are expected in learning at university?" The questions in the romantic relationship and career domains were derived from the extended version of the Identity Status Interview (Grotevant et al., 1982), with slight modifications. For romantic relationships: "What are you looking for in your romantic partner? How does that idea compare to what you look for in your friends?" The career questions were: "What are you going to do after university? What kinds of difficulties or problems do you anticipate associated with your decision about a future career?" Following these opening questions, participants were invited to talk about any chosen topic without further instructions. The first author hosted the course with a graduate research assistant; lectures on academic skills were provided prior to the discussions in triads, following which participants were introduced to discussions in the same classroom. The resultant 36 discussions (four triads x three weeks x three identity domains) were audio-recorded and transcribed. Of these, one discussion was removed from the analyses due to the absence of a student.

Analytic approach

We started our analysis from a data-driven grounded theory approach (Charmaz, 2014; see also, Miles et al., 2014) – which was chosen for its strength in generating categories concerning *processes* of exploration to connote observable action in data – but we did not use this approach in its pure form. Based on the general theoretical notions of what exploration is and on characteristics that were found in the literature, we thoroughly searched for all kinds of interactions that might fit with these characteristics of exploration. Thus, we used a combination of grounded theory and theory driven approach.

The first author divided each 20-minute discussion of issues raised by students into topical segments. A segment typically began by framing a particular topic and ended by reaching a conclusion or deadlock on the topic or following a pause in the conversation. A total of 177 segments

were identified across groups, weeks, and identity domains. Regarding identifying specific *character-istics* of exploration in real-time interactions, we took the following three steps.

First step

The first author repeatedly read each of the 177 segments and examined the students' interactions using the constant comparative method of analysis (Charmaz, 2014; see also Glaser & Strauss, 1967). This analysis generated initial categories of characteristics. Specifically, the first author considered one dyad in one identity domain at a time, reading all transcripts of a three-week discussion several times, segment by segment, to (1) take notes regarding specific *characteristics* of exploration in real-time interactions that were found; (2) add new ones as and when they were identified; (3) compare each characteristic with the others and integrate or collapse them; and (4) arrange characteristics in order (larger–smaller).

Second step

The second and fourth authors checked the links between these characteristics with examples of interactions and added to and refined them. During this step, several discussions were held to define categories based on agreements in our investigations of the transcripts and maintain a stable perspective throughout the analytic process. We reached theoretical saturation – no new characteristics were being identified among interactions (Charmaz, 2014) – at the point when we collaboratively read 55 (31.1%) of 177 segments. Subsequently, the first author reanalyzed the remaining segments to make some modifications in the coding based on our definition of characteristics.

Third step

A research assistant (a graduate student in developmental psychology), who was not aware of the purpose of this study, read all the 177 segments with the notes the authors made regarding characteristics to check (1) the link between the characteristics with interactions; (2) the consistency in the authors' definition of characteristics throughout the analytic process; and (3) if new characteristics could be formed among segments (no new characteristics were identified). Wherever the assistant had any disagreements concerning these three points, the first author and the assistant had discussions and reached an agreement by making slight modifications in the coding.

Regarding the definition of *overarching patterns*, we investigated how each of the characteristics worked in combination with the others and advanced the process of exploration. This analysis was interpretative in nature, and we took notes using a paper-and-pencil method. In this phase, we followed two steps. First, the first and fourth authors reread the same 55 segments for which characteristics were identified earlier, focusing on (1) interactions that presented distinct features of markedly advancing the process of exploration toward finding aspects of identity; (2) identifying characteristics that worked together during the interactions and formulated specific overarching patterns; and (3) interpreting how the characteristics involved in these patterns functioned in the developmental process (toward finding aspects of identity). During this analysis, we had constant discussions to define overarching patterns so that we reached full agreement. After reaching theoretical saturation at the 50th segment, the first author analyzed the remaining segments to examine if these overarching patterns appeared in them. Next, the same research assistant that checked the analytic process of identifying characteristics reread all the 177 segments with the authors' notes regarding overarching patterns, to (1) check the link between the patterns and interactions; (2) check the consistency of the authors' definition of the patterns, and (3) confirm that no new patterns could be identified. Wherever the assistant had any disagreements concerning these points, we had discussions and reached agreement by making slight modifications in the coding.

Results

Characteristics of exploration

Seven characteristics of exploration in real-time interactions were identified (see Table 1). *Support, open disclosure*, and *meta-exploration* functioned to build the conditions for exploration, while *investigating, creating an idea*, and *conflict* facilitated (or conflict triggered) exploration. In contrast, *demotivating* blocked exploration. The two most frequently occurring characteristics were *support* (88.7%) and *investigating* (98.3%), and the least frequently occurring characteristic was *demotivating* (4.5%). Each of these characteristics included two to seven specific types of actions (see Table 2). They were not mutually exclusive; a student's expression or a triad's exchange included one or more types of action.

Support

Students constantly provided positive mutual feedback on the ideas and expressions throughout the discussions. *Agreement* and *validation* facilitated a smooth flow during the unpacking of a peer's idea. *Encouragement* was given to advance exploration when a peer lacked confidence about or hesitated over an idea. *Understanding* and *compassion* communicated respect and concerns for ideas or stories regardless of the topic. Thus, support functioned as a mutual confirmation and affirmation of "who you are" and "what you want to explore" in a moment-to-moment manner.

Open disclosure

Students' open and honest expressions about what they really felt and thought created an atmosphere of mutual trust. This comprised *honesty* about their confusion and *confessions* about negative or embarrassing aspects of themselves. These disclosures served as a starting point for free experimentation in which students assumed various identity options (even eccentric ones) without hesitation.

Meta-exploration

Exploration was not limited to identity options and was exerted over the ways of exploration. Students freshly started the conversation by *trying* different ways to approach an issue, *analyzing* the reasons why they are unsure, and *finding/confirming* a new way of exploration. These actions worked as a turning point, signaling that they were gradually moving into the active exploration of a specific identity issue.

Investigating

This involved various types of actions representing active engagements in searching for and evaluating new or existing identity-related ideas. Students opened the conversation typically by *introducing an idea* (*listing different ideas* in some cases) as material for exploration; most of the ideas were tentative and vague rather than definite. The act of *clarification and elaboration* was a necessary step for grasping the meaning of the idea and fleshing it out to better fit their own (or their peers') interests or circumstances. This act was collaborative in some cases; *attuning* was a sign

Table 1. Descriptions of characteristics.

Characteristic	Definition	No. of segments (%)	
Support	Positive feedback on peers' ideas and expressions	157	(88.7)
Open disclosure	Being open and honest in a trustful atmosphere	34	(19.2)
Meta-exploration	Exploring the ways of exploration	35	(19.8)
Investigating	Actively searching for and investigating an idea	174	(98.3)
Creating an idea	Approaching the first small step for commitment	58	(32.8)
Conflict	Being faced with a threat to one's goals or concerns	59	(33.3)
Demotivating	Discouraging peers' motivation for exploration	8	(4.5)

No. of segments (%) = the number of segments that included the characteristic and the percentage of all 177 segments.

Table 2. Descriptions of types of action involved in each characteristic.

Type of action	Examples	No. of segments (%)	
Support			
Agreement	Nodding in agreement with the peer's idea ("Yeah, yeah, yeah, yeah; That's right; Me, too.")	123	(69.5)
Validation	Giving proof of the peer's idea ("Your point is correct because it is not the role of a lover to affirm everything about you.")	66	(37.3)
Encouragement	Helping a peer put forth an idea without hesitation ("Nice! Your word 'self-management' is really cool.")	40	(22.6)
Understanding	Taking the peer's idea seriously ("Somehow, I see what you are saying.")	113	(63.8)
Compassion	Expressing concern for the peer's serious situation ("Oh, dear! . . . You will feel better if you share your heartbreak with us, won't you?")	2	(1.1)
Open disclosure			
Honesty	Disclosing that one is confusing ("To be honest, I have no idea what I should do in university.")	25	(14.1)
Confession	Disclosing personal negative aspects of the self ("Actually, I always ran away from the studies I don't like.")	10	(5.6)
Meta-exploration			
Trying	Introducing a new way of approaching the issue ("Can we explore it from a different angle?")	17	(9.6)
Analyzing	Elaborating the reasons why they don't know ("We have no idea about learning in university because we haven't set goals for the future yet.")	8	(4.5)
Finding/ confirming	They now know a new way of exploration ("Our discussion is going in the right direction.")	17	(9.6)
Investigating			
Introducing an idea	Introducing current/previous/eccentric/unsure ideas ("My previous learning style is characterized as 'hard-working.'")	139	(78.5)
Listing different ideas	Putting various ideas one after another ([Students offer different occupations in turn:] "Becoming a *Lawyer*? – *Accountant*? – *Father*?")	5	(2.8)
Clarification and elaboration	Asking a question; adding new elements; testing a hypothesis ("Did you choose that future career based on your parents' expectations?")	101	(57.1)
Attuning	Speaking for others to clarify/elaborate/refine the idea ([One gave an incomplete sentence and the peer continued it:] "If you decide your occupation too early, it makes your *horizons* – *Narrowed*.")	31	(17.5)
Suggestion	Suggesting who the peer is ("It would be nice for you to be the person who makes better use of your spare time.")	4	(2.3)
Making some room for exploration	Turning the idea into a joke; taking a roundabout route ("Your learning style 'just sitting at a boring lecture for 90 minutes' is like a religious austerity.")	70	(39.5)
Reflecting	Searching for a keyword; repeating it in trying to establish what it is really about ([Students repeated the word by turn:] "I've never, ever imagined that I received such an e-mail from her – E-mail! – You've got to know such an important thing by e-mail.")	68	(38.4)
Creating an idea			
Gaining a new perspective	Finding a keyword; repeating it for confirmation ([Students found a keyword and repeated it by turn:] "I lost a partner, a *mirror*, in which I can see who I am – *Mirror*! *Mirror* – Oh, now, I can't see myself?")	47	(26.6)
Reaching a conclusion	Making a clear statement about a new aspect of identity ("A great phrase has just descended to me, 'I am the searcher for purpose in life.'")	27	(15.3)
Conflict			
Doubting/ challenging/ not convincing	Expressing something that contradicts the idea ("Your idea about learning seems a bit odd, isn't it? Isn't it? It includes a contradiction.)	38	(21.5)

Table 2. (Continued).

Type of action	Examples	No. of segments (%)	
Don't know	Don't know how to do the task ("No, I can't think of any ideas.")	14	(7.9)
Reaching a deadlock	Getting stuck in exploration ("No, what it is about? – No, I don't know what it is.")	17	(9.6)
Demotivating			
Denial	Expressing that one doesn't want to explore it ("Think about the idea after you go home, not now.")	2	(1.1)
Contradiction	One's words and the underlying meaning are different ("Your future plan is so perfect." [laughs sarcastically])	7	(4.0)

No. of segments (%) = the number of segments that included the type of action and the percentage of all 177 segments.

that students' perspectives on the issue were converging, and *suggestion* was a statement of "who you are" that students made based on their peers' ideas. *Making some room for exploration*, as represented by playful interactions, emerged when students eased the tension in the environment (created by a serious topic, for instance) and created a flexible atmosphere (increased variability) in interactions. *Reflecting* was a critical moment when students struggled to make something invisible or unspoken – but related to identity – a visible indicator of their identity. These diverse actions prevailed in the segments analyzed.

Creating an idea

This was the first small step to commitment. *Gaining a new perspective* indicated the identification and confirmation of a new idea of who one is; finding a keyword or phrase and using it repeatedly in conversation played a key role in internalizing the idea as well as mutually affirming a fresh perspective on themselves. *Reaching a conclusion* meant that students discovered a new aspect of identity, declaring "I am that kind of person." Creating a new idea was the earliest stage of commitment; hence, the idea was tentative, often reviewed, and further refined – or even collapsed in some triads – in the subsequent weeks.

Conflict

This characteristic was observed when students experienced something that threatened their goals or concerns, including wide-ranging aspects of the identity-related issues under discussion. *Doubting/challenging/not convincing* occurred when students recognized something that contradicted current, past, emerging ideas, and this triggered them to (further) explore them. In addition, students expressed apparent embarrassment when they had no way of approaching the issue (*don't know*) or they were going around in circles (*reaching a deadlock*), which urged them to restart exploration. Conflict co-occurred with a range of different types of characteristics, such as meta-exploration, investigating, creating an idea, and initiating or starting anew with ongoing exploration.

Demotivating

This functioned to block exploration, fostering distance among peers' perspectives by using discouraging expressions that were too direct (*denial*) or insincere (*contradiction*).

Overarching patterns of characteristics

These characteristics created three major overarching patterns that advanced exploration. First, students *created a safe environment for exploration* that was characterized by supportive, trustful, and open interactions over ideas provided by their peers. Second, *clarification and elaboration of the idea embedded in support* was essential for promoting exploration. Third, *a combination of finding*

a keyword and repeating it indicated the border between exploration and finding an aspect of identity ("I am that kind of person") signaling a tentative, emerging commitment. We illustrated each pattern by reporting two prototypical interactions; characteristics were denoted in brackets ([*Characteristic: type of action*]; for the sake of clarity, characteristics that did not play a key role in the overarching pattern were omitted). Students' names are pseudonyms.

Creating a safe environment for exploration

Students created a safe environment for exploration, characterized by supportive, trustful, open, and sometimes playful interactions. S*upport* and *open disclosure* repeatedly appeared in the interaction and built a secure base, on which students took all their peers' ideas seriously (including those that were vague, unsure, or unconventional) and mindfully handled them as material for exploration. The following example illustrates how students jointly explored a role of future dreams as motivation for study: A student (Kaz) suggested a somewhat unconventional idea (i.e., "to ride a motorcycle" as a future dream), yet it was addressed playfully:

Aya : Is your future dream to become an accountant?

Kaz : No, my dream for now is (pauses)

Sho : You don't have it? To ride (pauses)

Kaz : A motorcycle.

Aya, Kaz, and Sho : (laugh)

Sho : That's a dream for the near future.

Aya : Too soon! (laughs)

Sho : That's right. We could concentrate on learning if we have our dreams, couldn't we? [*Support: understanding, validation*]

Kaz : Exactly. I could concentrate on studying at university if I had my goal. To be honest, I am leaving things half-done at university. [*Open disclosure: confession*]

Sho : I worked hard in high school because I had the goal to study; the goal at that time was to enter a good university. [*Support: validation*]

Aya : That's right. [*Support: agreement*]

Sho : We could work hard when we were high school students. [*Support: agreement*]

Kaz : Yeah, yeah, because I had my goal. [*Support: agreement*]

  (Learning, Group A, Week 1, Segment 3)

Another exchange revealed the moment a safe environment was created in a more direct manner, allowing a student (Miki) to explore her own motivations for studying at university. Miki presented her idea with a lack of confidence, and her peers (Yui and Chie) immediately agreed and encouraged Miki (by giving assurance) to delve further into that idea:

Miki : The purpose of learning, well, in university is . . . umm . . . what it is. Um, if I was to express this from my current experience, I chose a course in philosophy because I thought it would be interesting!

Yui : Yeah.

Chie : Yeah, yeah, yeah . . . . [*Support: agreement*]

Miki : Oh! This point I was talking about is irrelevant, isn't it? My point might be irrelevant to this discussion!

Yui : Yeah, but your point is good, good! Really good! [*Support: encouragement*]

(Learning, Group B, Week 2, Segment 1)

A safe environment was created at the beginning and in the middle of the discussion. Thus, it functioned as a fundamental condition for both entering and sustaining exploration with a feeling of security.

Clarification and elaboration embedded in support

Despite the importance of the supportiveness of interactions, the process of exploration was not advanced solely by support. Combining *support* (a characteristic) with *clarification and elaboration* (a type of action of *investigating*) was essential for developing ideas. *Support* and *investigating* were the two most common characteristics across segments. In the following example, in which students explored how romantic relationships are different from friendships, one student (Fumi) first supported a peer's (Yui) honest disclosure by encouragement, then another student (Chie) asked Yui a question for clarification; once Yui successfully clarified her idea, Fumi and Chie were in a supportive mode again:

Yui : I'm confused about what my idea of a romantic relationship is.

Fumi : Really, really? What, what happened to you? (laughs) [*Support: encouragement*]

Yui : My thoughts are really chaotic . . . . I thought romantic relationships were the same as friendships . . . . But now I think they are different because I want to tell my boyfriend everything . . . .

Chie : Do you mean that you want him to know you more, and everything about you? [*Investigating: clarification*]

Yui : That's right. Because I trust him. If a partner were not a reliable person, it would be a big problem.

Chie : Yeah, I agree with you. [*Support: agreement*]

Yui : So, the most important thing in romantic relationships is a feeling of security and trust, and my idea is going around the concepts of security and trust . . . .

Fumi : I see what you are saying . . . . [*Support: understanding*]

Yui : In romantic relationships, feeling secure and trusting in a partner may be two sides of the same coin . . . .

Chie : That's the golden remark of today. [*Support: understanding*]

(Romantic relationship, Group A, Week 3, Segment 3)

Another example based on exploring careers showed this pattern of clarification and elaboration, embedded in support, in a more complex manner. Students (Aya and Rei) urged their peer (Nao) to clarify and elaborate her idea about who she is, by asking her several (tag) questions in rapid succession. At the same time, Aya and Rei encouraged Nao by providing hints and clues – even by answering the questions themselves, on behalf of Nao:

Aya : Nao, can you add some modifiers to your future occupation, a schoolteacher? [*Investigating: elaboration*]

Nao : What type?

Rei : A teacher something like (pauses) [*Support: encouragement*]

Nao : A good looking (pauses)

Aya : Teacher.

Nao : What is that? (laughs) Oh, I've now got it. Teachers with a lot of knowledge.

Aya : A teacher with a lot of knowledge.

Rei : It is a teacher who is skilled to convey knowledge to students, isn't it? [*Support: encouragement*; at the same time, *investigating: clarification*]

Aya : Um, I think that, well, a good teacher is a person who integrates those characteristics, isn't it? [*Support: encouragement;* at the same time, *investigating: elaboration*]

Nao : Yeah, yeah, yeah. (sounds convinced)

  (Career: Group C, Week 3, Segment 3)

These two examples illustrate how clarification and elaboration were nested in the context of support and fostered ideas about identity.

Combination of finding a keyword and repeating it

This pattern included *reflecting* and *gaining a new perspective* (i.e., a type of action in *investigating* and *creating an idea*, respectively) and indicated that students were on the border between exploration and discovering an aspect of their identity ("I am that kind of person"). This typically began with the students searching for words – something unspoken or invisible but related to identity. In the following example, students were facilitated by a peer's (Kaz) heartbreak in exploring the meaning of a romantic partner. The conversation partners (Eri and Nao) repeated the word "e-mail" while trying to figure out what it really meant (through reflecting), which resulted in them further elaborating on the initial utterance. They then found another word "mirror" and repeated it to internalize the idea that a romantic partner is a "mirror" of oneself (thus gaining a new perspective):

Kaz : I just failed in love last night . . . . I've never, ever imagined that I would receive such an e-mail from her. [*Open disclosure: confession*]

Eri : E-Mail! [*Investigating: reflecting*]

Nao : You've got to know such an important thing by e-mail. [*Investigating: reflecting*]

Eri : Really? . . .

Kaz : Ha-ha, ha-ha. (acts like a comedian by laughing with a dead-pan face)

Eri : (smiles wryly)

Nao : Oh dear! [*Support: compassion*]

Eri : Really? (laughs but is shocked)

Kaz : I can't believe she did that, and I have already shared this story with you as a kind of joke.

Eri and Nao : (laugh)

Kaz : (laughs) I wanted to get a laugh.

Nao : Yeah. [*Support: agreement*]

Eri : Um, yeah, by e-mail . . . . [*Investigating: reflecting*]

Nao : Yeah! You are going in the right direction to overcome the situation by expressing this story as a joke . . . . [*Support: encouragement*]

Kaz : I lost a partner, a mirror, in whom I can see myself, who I am . . . . [*Creating an idea: gaining a new perspective*]

Eri : Yeah, exactly! [*Support: agreement*]

Nao : Mirror! Mirror . . . . [*Creating an idea: gaining a new perspective*]

Kaz : Oh, now, I can't see myself? . . .

Eri and Nao : Oh, oh!

Nao : A partner is a mirror, but (pauses)

Kaz : I can't see who I am if my partner doesn't mirror me. [*Creating an idea: gaining a new perspective*]

Eri and Nao : Exactly. [*Support: agreement*]

   (Romantic relationships: Group C, Week 3, Segment 1)

Another example indicated that a student (Sho) reached a conclusion based on an aspect of identity. This idea about romantic relationships was developed through the collaborative acts of repeating the words "it is true" and by expanding it to a more comprehensive phrase "I am a fundamentalist [direct translation] of 'love comes first'":

Sho : I am the kind of person who is so much more motivated when I have a girlfriend as compared to when I don't have a girlfriend. [*Investigating: introducing an idea*]

Miki : So, do you mean that you can achieve at your best when you have a person whom you like? You would do so even if it was a one-sided love? [*Investigating: clarification and elaboration*]

Sho : Yes, I can do so when I have a person whom I like.

Miki : Are you sure? [*Investigating: clarification*]

Sho : Yeah, I can pretty much succeed.

Miki : Can you? You can. [*Investigating: clarification*; then, *support: understanding*]

Jun : (laughs) Oh, that's great . . . . Having a person whom you like in your mind has a crucial meaning for you, doesn't it? [*Investigating: clarification and elaboration*]

Sho : Yeah, it really does.

Miki : Yeah, you are right because it is true that you have a lot of wonderful memories even if it is one-sided love. [*Support: validation*]

Sho : It is true. [*Investigating: reflecting*]

Miki : It is true, isn't it? [*Investigating: reflecting*]

Sho : It is true. [*Investigating: reflecting*]

Miki : Yeah.

Sho : Loving somebody is, kind of, a source of my motivation. [*Creating a new idea: gaining a new perspective*]

Miki and Jun : Ah, indeed. [*Support: agreement*]

Sho : I am a "fundamentalist" of "love comes first." [*Creating a new idea: reaching a conclusion*]

Miki and Jun : (laugh loudly)

   (Romantic relationships: Group B, Week 3, Segment 2)

As illustrated, a new perspective or aspect of identity did not emerge from the straightforward interaction as characteristics appearing in order, but rather from the interaction in which the same characteristics repeatedly appeared. At this point, students stayed with the word to understand what it really meant and to internalize it as an emerging idea about who they are.

Discussion

In this study, we examined how exploration manifests itself in real-time interactions among young adults. We followed discussions about identity-related issues (learning, romantic relationships, and careers) among university students for nine weeks and analyzed the data using a combination of a grounded theory and a theory driven approach. Our findings demonstrate that exploration in real-time interactions among peers embraced diverse characteristics with distinct functions and connotations. The results confirmed that, on a real-time level, individuals engage in ongoing actions lasting for minutes or seconds that shape the process of exploration. Moreover, the results of the overarching patterns of those characteristics revealed that exploration in real-time interactions among peers did not entail a fixed sequence of characteristics; rather it was carefully implemented, going back and forth among characteristics, and taking small steps. Overall, our findings add significant knowledge to models of identity formation and have promising future implications.

Characteristics of exploration

The results of the characteristics of exploration embrace both similarities with and differences from the concepts of exploration in prior studies. While *investigating* is similar to existing concepts of exploration and reveals the real-time version of that type of exploration, others, such as *support, creating an idea*, and *conflict*, provide novel insights into how the process of exploration in real-time interactions is shaped step-by-step. Regarding similarities, several actions in *investigating* demonstrate how the depth and breadth of exploration, as conceptualized by Crocetti et al. (2008) and Luyckx et al. (2006), is expressed in actions in real-time. Specifically, *clarification* (e.g., asking a question) and *elaboration* (e.g., adding new elements to the idea), together with their collaborative forms (i.e., *attuning* and *suggestion*), provide evidence of various detailed actions involved in core aspects of the depth dimension (how one talks with others about the choice and searches for additional information about it). Moreover, *reflecting* (e.g., repeating a word) unpacks another substantial aspect of the depth (how one reflects on the choice) in greater detail. Meanwhile, *listing different ideas* (e.g., putting ideas one after another) can be viewed as a real-time version of the breadth in searching for alternatives. It is noteworthy that *making some room for exploration* (e.g., turning the idea into a joke) can be connected to both depth and breadth, as it increases flexibility in interactions that broadens the meaning of ideas under investigation and provides the potential for further exploration. Such a flexible state (or variability) is considered to be important in moving the process of identity formation forward (Lichtwarck-Aschoff et al., 2009).

However, it has also become clear that exploration in real-time entails much more than just broad and in-depth investigations. The results regarding other characteristics extend our knowledge of exploration. Particularly, *support, open disclosure*, and *meta-exploration* functioned to build conditions for exploration. This phase of exploration has not been reported in the previous studies on exploration. Our results point to these characteristics as a part of exploration because they seem to be indispensable motivations and attitudes that make individuals actively interact within environments (e.g., peers, the course, and the task in this study). As identity develops through the continuous dynamic interaction between person and context (Bosma & Kunnen, 2001), such preparatory conditions for exploration are grounded in exploration itself, and lead to (further) exploration. As such, the conditions for exploration become part of the exploration process. This result also illuminates that exploration in real-time interactions is not an exclusively individualized process but an inherently interactive one. Moreover, our results suggest that *conflict* as a trigger for exploration is a crucial part

of exploration. According to Bosma and Kunnen (2001), conflict is a starting point of exploration that may or may not lead to the development of commitments. Our results indicate that various types of *conflict* (e.g., challenging) – appearing in combination with different characteristics (e.g., *meta-exploration, investigating*, and *creating an idea*) – play a crucial role in initiating or resetting exploration in real-time interactions. Furthermore, *creating an idea* can be viewed as a part of exploration in real-time, and also as part of the commitment formation process. Exploration is referred to here because the idea is tried out tentatively and repeatedly, and it is flexibly adjusted in the moment. At the same time, the idea itself could mark the beginning of a commitment. Thus, exploration and commitment are strongly intertwined in this real-time process of creating new ideas.

Overarching patterns of characteristics

The three overarching patterns show in greater detail how characteristics of exploration appear in interactions and how they function in the developmental process of identity. *Creating a safe environment for exploration* highlights the importance of a place where youth are free from social obligation (e.g., whether they really take on the role) and evaluation (e.g., whether the idea is socially acceptable) when entering and advancing exploration. In this environment, no ideas (including unconventional ones) are negated but mindfully addressed, often in a playful manner (e.g., to ride a motorcycle is a "too near" dream, but "that's right" to have such a dream to concentrate on boring university studies). Various acts of mutual affirmation (Erikson, 1968), such as agreement and understanding, produce a secure and trustful atmosphere. This safe and playful facet is comparable to the notion of "an intermediate reality" (Erikson, 1963, p. 212) between the self and social roles awaiting youth; the purpose of exploration as "play" (p. 212) is to try on different ideas about one's identity as preparation for taking on active social roles (or commitments). Although the presence of such an arena has been suggested in a prior study on narrative identity (McLean & Jennings, 2012), our findings further clarify it as a fundamental part of exploration.

   Clarification and elaboration embedded in support explains how a tentative or vague idea of personal identity is refined and sophisticated. The acts of clarification and elaboration seem especially effective in the context where students provide much support for their peers. In this context where individuals have already established partnerships in terms of exploration, the acts (e.g., asking a question) are likely to be provided timeously and may be interpreted as the concept of scaffolding in joint action (Mascolo & Fischer, 2015). According to Mascolo and Fischer, scaffolding occurs when a more experienced person assists an individual in the performance of any given activity and contributes to the moment-to-moment formation of psychological structures (identity-related ideas in this study). Previous studies on identity formation indicate that scaffolding (or related actions) could occur among peers (McLean & Jennings, 2012; Sugimura & Shimizu, 2010). The novelty of our finding is that clarification and elaboration as scaffolding may facilitate others' exploration while advancing one's own exploration; this has not been reported in prior studies. A second example of this overarching pattern was where two students took actions to clarify and elaborate on (by contributing tag questions) their peer's idea about who she is, while simultaneously answering their own questions (e.g., "I think ..., isn't it?"). The answers highlight the peer's idea while simultaneously fostering reflection on their own ideas about identity. This may be viewed as *mutual* or *reciprocal* scaffolding specific to exploration in real-time interactions among peers.

   Finding a keyword and repeating it sheds light on the emergence of a tentative commitment on the border of exploration and commitment formation; it clarifies how a tentative, emerging commitment – an aspect of identity expressed as "I am that kind of person" – appears in real-time. Individuals' actions are especially refined in this phase, such as repeating the same word to discover its meaning, going back and forth between investigating and support, and repeating the same word again, but this time seeking to confirm its meaning (or "who one is"). Such refined actions, particularly the act of repeating a keyword (e.g., "Mirror! Mirror"), seems automatic, which may reflect an unconscious aspect of identity formation highlighted by Erikson (1968) but largely unexplored (Schachter, 2018). As this

study focused on exploration during real-time *interactions*, most participants might require conscious awareness of how others see and evaluate them; however, because of the safe environment they created together, they were substantially relieved from a stressful atmosphere. In this (somewhat playful) context, individuals may tend to reveal the automatic, unconscious part of exploration.

These overarching patterns highlight that exploration through real-time interactions among peers is a gradual and continuous process of forming a tentative idea about *who I am*, rather than a definite commitment. The prominence of a mindful and sensitive property of exploration, which is characterized by frequent support, is comparable to the *evolutive style* of identity formation introduced by Flum (1994), whereby youth do not show strong conflicts, tumultuous crises, and straightforward progression; rather, they engage in a gradual process of synthesizing their identity while experimenting and discovering their own styles of exploration in given contexts.

Limitations and future directions

The generalization of the results concerns macro- and micro-level factors that require future research. At a macro-level, our study was conducted in Japan, where a prior study reported the salience of a sense of togetherness between youth and peers has been documented (Sugimura & Shimizu, 2010). This relational element may influence our results that highlight extensive support during exploration. In addition, our sample was limited to university students, based on the assumption that university is an ideal setting for exploration. Therefore, it is necessary to assess whether the present results are found among other groups of youth across and within cultures. It is also important to investigate how common each characteristic is in a larger, more diverse sample in a future study. Such research may uncover similarities and differences, which will open further investigation on identity formation as ongoing transactions between person and context.

At the micro-level, this study focused on triads, which might have reduced the intensity of conflict experienced by peers by negating alternative perspectives as reported in a previous study with dyads (McLean & Jennings, 2012). Triads might have also relieved students from ruminative exploration, which is a type of maladaptive exploration (Luyckx et al., 2006) that was not found in the current study. In triads, it is possible that a variety of ideas and questions are introduced by different students with different perspectives; this might increase variability in the conversation and prevent students from falling into rumination. Moreover, the specific setting and timing of the study (during a first-year, first-semester course) might have positively or negatively constrained the motivation and possibility for exploration and commitment. Furthermore, participants of this study were mainly females from the humanities and social science departments, suggesting that they might be more confident in smoothly engaging in discussion (Morgan & Korobov, 2012, for gender differences). An important future research area to further unravel this feature of exploration in real-time interaction among peers is exploring whether the characteristics in different conditions affect exploration, and if so, how.

This point is especially useful for understanding why some youth and their peers implement a constructive and self-discovering exploration approach together (Eichas et al., 2017), while others implement destructive exploration and experience identity distress (Hihara et al., 2021). This will allow us to intervene in cases where problematic processes of identity formation exist. In addition, this avenue of research can support normative identity development processes as well. If we understand the real-time exploration processes among young people better and identify the exploration processes effective in navigating identity questions, interventions aimed at stimulating identity development can be accurately designed. For instance, one can envision a peer-to-peer guided exploration program, where young people are trained to effectively use micro-level exploration interactions and apply this insight to help each other explore.

Conclusion

Identity formation is an ongoing process of strengthening and weakening commitments through exploration (Bosma & Kunnen, 2001). In highlighting how exploration manifests itself in the real-time interactions among youth, this study clarifies several key issues regarding identity formation. First, it suggests that, by nature, identity exploration does not entail a fixed sequence. The process of exploration is seen as a winding road rather than a direct route to commitment formation, in which individuals take small steps, oscillate, or even go around in circles, within and across diverse characteristics. Second, it shows how exploration emerges in the shape of various characteristics with distinct functions (e.g., building conditions), which expands our knowledge about exploration. The process of exploration is a fabric into which these diverse characteristics are interwoven. Finally, it explains how mutual affirmation (Erikson, 1968) between youth and their peers vitalizes exploration. The process of exploration in real-time interactions among peers involves ample opportunity for experimentation on the creation of commitments and the way of exploration itself. We hope that this study provides insight into what exploration in real-time really is and will encourage further research on the process of identity formation.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author, Kazumi Sugimura. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

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References

Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.

Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry*, *1*(7), 569–576. https://doi.org/10.1016/S2215-0366(14)00080-7

Becht, A. I., Nelemans, S. A., Branje, S. J. T., Vollebergh, W. A. M., & Meeus, W. H. J. (2021). Daily identity dynamics in adolescence shaping identity in emerging adulthood: An 11-year longitudinal study on continuity in development. *Journal of Youth and Adolescence*. https://doi.org/10.1007/s10964-020-01370-3

Bosma, H. A., & Kunnen, E. S. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review*, *21*(1), 39–66. https://doi.org/10.1006/drev.2000

Charmaz, K. (2014). *Constructing grounded theory*. Sage.

Côté, J. E., & Levine, C. G. (2015). *Identity formation, youth, and development*. Psychology Press. https://doi.org/10.4324/9780203767047

Crocetti, E., Rubini, M., & Meeus, W. (2008). Capturing the dynamics of identity formation in various ethnic groups: Development and validation of a three-dimensional model. *Journal of Adolescence*, *31*(2), 207–222. https://doi.org/10.1016/j.adolescence.2007.09

Eichas, K., Montgomery, M. J., Meca, A., & Kurtines, W. M. (2017). Empowering marginalized youth: A self-transformative intervention for promoting positive youth development. *Child Development*, *88*(4), 1115–1124. https://doi.org/10.1111/cdev.12866

Erikson, E. H. (1963). *Childhood and society*. Norton.

Erikson, E. H. (1968). *Identity: Youth and crisis*. Norton.

Ferrer-Wreder, L., & Kroger, J. (2020). *Identity in adolescence: The balance between self and other* (4th ed.). Routledge. https://doi.org/10.4324/9781315165806

Flum, H. (1994). The evolutive style of identity formation. *Journal of Youth and Adolescence*, *23*(4), 489–498. https://doi.org/10.1007/BF01538041

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine.

Granic, I. (2005). Timing is everything: Developmental psychopathology from a dynamic systems perspective. *Developmental Review*, *25*(3–4), 386–407. https://doi.org/10.1016/j.dr.2005.10.005doi

Grotevant, H. D., Thorbecke, W., & Meyer, M. L. (1982). An extension of Marcia's Identity Status Interview into the interpersonal domain. *Journal of Youth and Adolescence*, *11*(1), 33–47. https://doi.org/10.1007/BF01537815

Hatano, K., Sugimura, K., & Crocetti, E. (2016). Looking at the dark and bright sides of identity formation: New insights from adolescents and emerging adults in Japan. *Journal of Adolescence*, *47*, 156–168. https://doi.org/10.1016/j.adolescence.2015.09.008

Hihara, S., Saiga, S., & Sugimura, K. (2021). Relationships between demographic factors and trajectories of identity distress in various life domains among young adults: A three-wave longitudinal study. *Identity*, *21*(1), 36–50. https://doi.org/10.1080/15283488.2020.1839757

Josselson, R. (1994). Identity and relatedness in the life cycle focus. In H. A. Bosma, T. L. G. Graafsma, H. D. Grotevant, & D. J. de Levita (Eds.), *Identity and development: An interdisciplinary approach* (pp. 81–102). Sage.

Kerpelman, J. L., & Pittman, J. F. (2001). The instability of possible selves: Identity processes within late adolescents' close peer relationships. *Journal of Adolescence*, *24*(4), 491–512. https://doi.org/10.1006/jado.2001.0385

Klimstra, T. A., Luyckx, K., Hale, W. W., Frijns, T., van Lier, P. A. C., & Meeus, W. H. J. (2010). Short-term fluctuations in identity: Introducing a micro-level approach to identity formation. *Journal of Personality and Social Psychology*, *99*(1), 191–202. https://doi.org/10.1037/a0019584

Klimstra, T. A., & Schwab, J. R. (2021). Time and identity: An evaluation of existing empirical research, conceptual challenges, and methodological opportunities. *Identity*, *21*(4), 275–288. https://doi.org/10.1080/15283488.2021.1924722

Kroger, J., & Marcia, J. E. (2011). The identity statuses: Origins, meanings, and interpretations. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 31–53). Springer Science + Business Media. https://doi.org/10.1007/978-1-4419-7988-9

Kunnen, E. S. (2006). Are conflicts the motor in identity change? *Identity*, *6*(2), 169–186. https://doi.org/10.1207/s1532706xid0602_3

Lichtwarck-Aschoff, A., Kunnen, S., & van Geert, P. (2010). Adolescent girls' perceptions of daily conflicts with their mothers: Within-conflict sequences and their relationship to autonomy. *Journal of Adolescent Research*, *25*(4), 527–556. https://doi.org/10.1177/0743558410367953

Lichtwarck-Aschoff, A., Kunnen, S. E., & van Geert, P. L. C. (2009). Here we go again: A dynamic systems perspective on emotional rigidity across parent-adolescent conflicts. *Developmental Psychology*, *45*(5), 1364–1375. https://doi.org/10.1037/a0016713

Lichtwarck-Aschoff, A., van Geert, P., Bosma, H., & Kunnen, S. (2008). Time and identity: A framework for research and theory formation. *Developmental Review*, *28*(3), 370–400. https://doi.org/10.1016/j.dr.2008.04

Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006). Unpacking commitment and exploration: Preliminary validation of an integrative model of late adolescent identity formation. *Journal of Adolescence*, *29*(3), 361–378. https://doi.org/10.1016/j.adolescence.2005.03.008

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, *3*(5), 551–558. https://doi.org/10.1037/h0023281

Mascolo, M. F., & Fischer, K. W. (2015). Dynamic development of thinking, feeling, and acting. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science: Vol.1. Theory and method* (7th., pp. 113–161). Wiley. https://doi.org/https://doi.org/10.1002/9781118963418.childpsy104 Series.

McLean, K. C., & Jennings, L. E. (2012). Teens telling tales: How maternal and peer audiences support narrative identity development. *Journal of Adolescence*, *35*(6), 1455–1469. https://doi.org/10.1016/j.adolescence.2011.12.005

Meeus, W., van de Schoot, R., Keijsers, L., & Branje, S. (2012). Identity statuses as developmental trajectories: A five-wave longitudinal study in early-to-middle and middle-to-late adolescents. *Journal of Youth and Adolescence*, *41*(8), 1008–1021. https://doi.org/10.1007/s10964-011-9730-y

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Sage.

Ministry of Education, Culture, Sports, Science and Technology. (2020, December 25). *School basic survey*. Retrieved February 6, 2021, from https://www.e-stat.go.jp/SG1/estat/NewList.do?tid=000001011528

Moffitt, U., & Syed, M. (2020). Ethnic-racial identity in action: Structure and content of friends' conversations about ethnicity and race. *Identity*, *21*(1), 67–88. https://doi.org/10.1080/15283488.2020.1838804

Morgan, E. M., & Korobov, N. (2012). Interpersonal identity formation in conversations with close friends about dating relationships. *Journal of Adolescence*, *35*(6), 1471–1483. https://doi.org/10.1016/j.adolescence.2011.09 .

Rosenthal, D. A., Gurney, R. M., & Moore, S. M. (1981). From trust on intimacy: A new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence*, *10*(6), 525–537. https://doi.org/10.1007/BF02087944

Schachter, E. P. (2018). Intergenerational, unconscious, and embodied: Three underdeveloped aspects of Erikson's theory of identity. *Identity*, *18*(4), 315–324. https://doi.org/10.1080/15283488.2018.1523731

Sugimura, K. (2020). Adolescent identity development in Japan. *Child Development Perspectives*, *14*(2), 71–77. https://doi.org/10.1111/cdep.12359

Sugimura, K., Nakama, R., Mizokami, S., Hatano, K., Tsuzuki, M., & Schwartz, S. J. (2016). Working together or separately? The role of identity and cultural self-construal in well-being among Japanese youth. *Asian Journal of Social Psychology*, *19*(4), 362–373. https://doi.org/10.1111/ajsp.12154

Sugimura, K., & Shimizu, N. (2010). The role of peers as agents of identity formation in Japanese first-year university students. *Identity*, *10*(2), 106–121. https://doi.org/10.1080/15283481003711734

Sugimura, K., & Shimizu, N. (2011). Identity development in the learning sphere among Japanese first-year university students. *Child & Youth Care Forum*, *40*(1), 25–41. https://doi.org/10.1007/s10566-010-9118-2

van der Gaag, M. A. E., de Ruiter, N. M. P., Kunnen, S. E., & Bosma, H. (2020). The landscape of identity model: An integration of qualitative and quantitative aspects of identity development. *Identity*, *20*(4), 272–289. https://doi.org/10.1080/15283488.2020.1821154