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**The Role of Autonomy and Relatedness in the German School  
Context for Adolescents' Cultural Identity Development**

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**Abstract – English**

Adolescent identity development is shaped by two psychological needs: autonomy and relatedness. Limited research explores how autonomy and relatedness satisfaction in the school context relate to cultural identity development of adolescence. Using qualitative and quantitative data with 7<sup>th</sup> and 9<sup>th</sup> graders and teachers in Germany, results reveal the importance of both autonomy and relatedness for culturally diverse adolescents, promoting cultural identity development. Positive student-teacher relationships are revealed as important conditions for school-based interventions to promote heritage cultural identity development, however teachers' affective experiences in culturally diverse classrooms may hinder their support of students' needs for autonomy and relatedness. The findings underline the importance of creating school environments that can support both autonomy and relatedness in culturally diverse adolescents, as they are vital for adolescents' cultural identity development.

*Keywords:* adolescence, autonomy, relatedness, cultural identity

**Abstract – Deutsch**

Autonomie und Zugehörigkeit prägen die Identitätsentwicklung Jugendlicher, jedoch gibt es nur wenige Erkenntnisse zum Zusammenhang von Autonomie und Zugehörigkeit mit der kulturellen Identitätsentwicklung von Jugendlichen im Schulkontext. Qualitative und quantitative Untersuchungen mit Schüler\*innen der 7. und 9. Klasse sowie mit Lehrer\*innen in Deutschland zeigen, dass sowohl Autonomie als auch Zugehörigkeit für kulturell vielfältige Jugendliche wichtig sind und ihre kulturelle Identitätsentwicklung fördern. Besonders gute Lehrer\*innen-Schüler\*innen-Beziehungen sind eine wichtige Voraussetzung für schulische Interventionen zur Stärkung kultureller Identität. Affektive Erfahrungen von Lehrkräften in kulturell vielfältigen Schulen können sie dabei behindern, die Autonomie und Zugehörigkeit von Schüler\*innen zu unterstützen. Die Ergebnisse betonen die Notwendigkeit ein schulisches Umfeld zu schaffen, das Autonomie und Zugehörigkeit bei kulturell vielfältigen Jugendlichen unterstützen.

*Keywords:* Adoleszenz, Autonomie, Zugehörigkeit, kulturelle Identität

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### Publications

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2. Hölscher, S. I. E., Schachner, M. K., Juang, L. P., & Schwarzenhal, M. (2024). "When I am with my friends I am free, I am supported." - A mixed methods study on autonomy, relatedness and identity among culturally diverse adolescents in Germany [Preprint]. PsyArXiv. <https://doi.org/10.31234/osf.io/hyv2f>
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## German Summary

### Einleitung

Die Adoleszenz ist eine entscheidende Entwicklungsphase, die von physischer, kognitiver und sozialer Veränderung geprägt ist. Sie ist durch den Übergang zur Selbstständigkeit, die Vertiefung sozialer Bindungen außerhalb des familiären Kontextes und den Erwerb neuer Rechte und Pflichten gekennzeichnet (Steinberg, 2023). Inmitten dieser Veränderungen erkunden Jugendliche, wer sie sind und wer sie sein wollen. Dies wird als Identitätsentwicklung bezeichnet und ist eine zentrale Aufgabe der Adoleszenz (Erikson, 1968). Die Entwicklung einer kohärenten und stabilen Identität hat lebenslang erhebliche Auswirkungen auf das Wohlbefinden und wird mit Faktoren wie guten Beziehungen, hoher Lebenszufriedenheit und guten schulischen Leistungen in Verbindung gebracht (Crocetti, 2017).

Das soziale Umfeld einer Person spielt eine wichtige Rolle bei der Identitätsentwicklung von Jugendlichen (Eccles & Roeser, 2011; Erikson, 1968; Ryan & Deci, 2017). So wird die Identitätsentwicklung stark von zwei grundlegenden psychologischen Bedürfnissen geprägt: Autonomie und Zugehörigkeit (Kağıtçıbaşı, 2013). Autonomie wird im Allgemeinen als ein Gefühl willentlicher Handlungsfähigkeit verstanden, d.h. als Handeln im Einklang mit den eigenen Werten und Wünschen. Zugehörigkeit hingegen wird als das Gefühl definiert, mit anderen verbunden zu sein und qualitativ hochwertige Beziehungen zu anderen aufzubauen (Ryan & Deci, 2017). Autonomie und Zugehörigkeit spielen eine wichtige Rolle für die Identitätsentwicklung, da das Erkunden und Vergleichen mehrerer potenzieller Identitätsoptionen ebenso wie die Verinnerlichung einer gewählten Identität sehr aufwendig sind (Ryan & Deci, 2017). Die Energie für diese Prozesse kann aus der Befriedigung der Grundbedürfnisse Autonomie und Zugehörigkeit gewonnen werden (Luyckx et al., 2017), welche zu Gefühlen psychologischer Freiheit bzw. der sozialen Unterstützung führen (Vansteenkiste et al., 2020). Die Befriedigung der psychologischen

Grundbedürfnisse ist für Jugendliche aufgrund der vielen wichtigen Veränderungen, die in dieser Entwicklungsphase stattfinden, von besonderer Bedeutung (Laporte et al., 2021).

Eccles und Roeser (2011) betonen dabei insbesondere die Rolle der Schule bei der Befriedigung von Autonomie und Zugehörigkeit von Jugendlichen (*stage-environment fit*). Wenn Schulen die Bedürfnisse von Schüler\*innen unterstützen, z.B. Jugendlichen beim Lernen Wahlfreiheiten einräumen und ihre Beziehungen zu Gleichaltrigen fördern, begünstigt dies die positive Entwicklung und eine erfolgreiche Identitätsentwicklung von Jugendlichen. Dabei wird insbesondere die Bedürfnisbefriedigung durch Lehrkräfte als wichtige Unterstützung in der Identitätsentwicklung hervorgehoben (Erikson, 1968; Eccles & Roeser, 2011; Flum & Kaplan, 2012).

Trotz umfangreicher Forschungsarbeiten zu Autonomie und Zugehörigkeit in verschiedenen Kulturen und (kulturellen) Kontexten gibt es nur wenig Forschung, die untersucht hat, wie kulturell vielfältige Jugendliche selbst Autonomie und Zugehörigkeit in ihrem Leben definieren und erleben. Darüber hinaus beschränkte sich die bisherige Forschung zum Zusammenhang zwischen der Befriedigung der Autonomie- und Zugehörigkeitsbedürfnisse und der Identitätsentwicklung weitgehend auf die Entwicklung der globalen und beruflichen Identität (z.B. Luyckx et al., 2017). Erkenntnisse zum Zusammenhang zwischen Bedürfnisbefriedigung und der kulturellen Identität fehlen dabei noch.

Kulturelle Identität ist ein vielschichtiges Konzept, welches sowohl die Art und Weise, wie eine Person über seine kulturelle Gruppe denkt, als auch die Prozesse, durch die sie zu dieser Identität gelangt, umfasst. Kulturelle Identität wird hier als übergreifender Begriff verwendet, der sowohl kulturelle Hintergründe als auch die nationale Identität umfasst. Die Entwicklung der kulturellen Identität ist für alle Jugendlichen wichtig, spielt aber eine



besonders wichtige Rolle für das Wohlbefinden rassistisch markierter<sup>1</sup> Jugendlicher, die ihre Identität entwickeln, während sie mit negativen Stereotypen über ihre Gruppe(n) sowie mit Diskriminierung konfrontiert werden (Umaña-Taylor & Rivas-Drake, 2021). Daher ist die Untersuchung von Faktoren, die die kulturelle Identitätsentwicklung bei kulturell vielfältigen Jugendlichen<sup>2</sup> fördern können, unerlässlich.

Das Ziel dieser Dissertation ist es, die Beziehung zwischen Autonomie, Zugehörigkeit und kultureller Identität von Jugendlichen im deutschen Schulkontext zu untersuchen.

Konkret habe ich vier Forschungsziele mit Hilfe von vier empirischen Studien untersucht.

Diese beruhen auf drei Datensätzen mit kulturell vielfältigen Siebt- und Neuntklässler\*innen aus Sachsen-Anhalt und Berlin, sowie einem Datensatz mit Lehrkräften aller Schulformen und Klassenstufen aus ganz Deutschland.

## **1. Forschungsziel**

Mein erstes Forschungsziel bestand darin zu untersuchen, was Autonomie und Zugehörigkeit für kulturell vielfältige Jugendliche bedeuten. Obwohl in der Literatur Autonomie und Zugehörigkeit als psychologische Grundbedürfnisse anerkannt werden, deren Gleichgewicht und Bedeutung in verschiedenen (kulturellen) Kontexten variieren können (Kağıtçıbaşı, 2013; Ryan & Deci, 2017), weiß die Forschung noch wenig darüber, was Autonomie und Zugehörigkeit für kulturell vielfältige Jugendliche selbst bedeuten. Daher konzentrierte ich mich auf die von Jugendlichen erlebte Autonomie und Zugehörigkeit und

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<sup>1</sup> Auf Empfehlung des Deutschen Zentrums für Integrations- und Migrationsforschung (DeZIM, 2023) wird in dieser Arbeit von „rassistisch markierten“ und „nicht-rassistisch markierten“ Personen gesprochen. Ziel ist es, den Blick auf den aktiven Prozess der rassistischen Markierung zu richten. Dabei werden Personen oder Gruppen aufgrund rassistischer Zuschreibungen und Stereotypen als anders oder fremd etikettiert, was zu überproportional häufigen Diskriminierungserfahrungen führt. In Deutschland betrifft dies besonders Personen, die sich als Schwarz, muslimisch oder asiatisch identifizieren.

<sup>2</sup> In dieser Dissertation wird der Begriff „kulturell vielfältige Jugendliche“ verwendet, um Jugendliche in Deutschland zu beschreiben, die unterschiedliche kulturellen Hintergründe haben, und rassistisch markierte und nicht-rassistisch markierte Jugendliche einschließt. Der Begriff betont, dass diese Jugendlichen nicht als eine homogene Gruppe angesehen werden; stattdessen strebt diese Arbeit danach die vielfältigen Realitäten dieser Jugendlichen zu berücksichtigen, um ein umfassendes Verständnis ihrer Erfahrungen im deutschen Kontext zu gewährleisten.

untersuchte mögliche kulturelle Unterschiede zwischen verschiedenen Gruppen von Jugendlichen.

In Kapitel 2 untersuchte ich mit Hilfe halbstrukturierter Interviews und reflexiver thematischer Analyse die Rolle von Autonomie und Zugehörigkeit im Leben von  $N = 16$  Jugendlichen der 9. Klasse, darunter Jugendliche mit und ohne Einwanderungsgeschichte sowie mit Fluchterfahrung. Alle Jugendlichen in dieser Studie äußerten eine tiefe Sehnsucht nach und starke Abhängigkeit von engen Beziehungen (Zugehörigkeit) sowie den Wunsch nach Freiheit, Unabhängigkeit und der Möglichkeit, eigene Entscheidungen zu treffen (Autonomie). Autonomie war Jugendlichen zwar nicht ganz so wichtig wie Zugehörigkeit, jedoch unterstützen die Ergebnisse die Annahme, dass sowohl Autonomie als auch Zugehörigkeit psychologische Grundbedürfnisse aller Jugendlicher sind (Ryan & Deci, 2017). In Übereinstimmung mit der Literatur wurden auch kleine Unterschiede in der Bedeutung und dem Aushandeln von Autonomie und Zugehörigkeit bei Jugendlichen mit unterschiedlichen kulturellen Hintergründen festgestellt (Coşkan et al., 2016; Kağıtçıbaşı, 2005).

Diese Ergebnisse decken sich mit den Ergebnissen von Kapitel 3, in dem ich mit Hilfe eines Mixed-Methods-Ansatzes Aufsätze von  $N = 364$  Schüler\*innen der Klasse 7 analysierte, um zu untersuchen, welche Aspekte von Autonomie und Zugehörigkeit Jugendliche in ihrem Leben für wichtig halten. Unterschiede und Gemeinsamkeiten in der Bedeutung und Vereinbarkeit von Autonomie und Zugehörigkeit wurden bei Jugendlichen untersucht, die sich als „nur-deutsch“, „deutsch-und-nicht-deutsch“ oder „nicht-deutsch“ identifizieren. Die qualitativen und quantitativen Ergebnisse zeigen, dass sowohl Autonomie als auch Zugehörigkeit für kulturell unterschiedliche Jugendliche wichtig sind, unabhängig voneinander bestehen und sich sogar gegenseitig verstärken können. Zwischen den drei untersuchten Gruppen von Jugendlichen ergaben sich nur geringe Unterschiede.

Zusammen zeigen diese Ergebnisse, dass Autonomie und Zugehörigkeit zwei facettenreiche und voneinander unabhängige psychologische Bedürfnisse sind, die beide für

alle Jugendlichen wichtig sind. Bei der Bedeutung und Aushandlung von Autonomie sowie dem gleichzeitigen Auftreten von Autonomie und Zugehörigkeit zeigten sich nur geringe kulturelle Unterschiede. Diese Ergebnisse unterstreichen dennoch die Notwendigkeit eines kultursensiblen Ansatzes zur Förderung von Autonomie und Zugehörigkeit bei allen Jugendlichen.

## **2. Forschungsziel**

Mein zweites Forschungsziel bestand darin, die Beziehung zwischen der Befriedigung der Grundbedürfnisse nach Autonomie- und Zugehörigkeit und der kulturellen Identitätsentwicklung bei Jugendlichen zu untersuchen. Während frühere theoretische (Ryan & Deci, 2017) und empirische Studien (z.B. Luyckx et al., 2017) die Befriedigung psychologischer Bedürfnisse als treibende Kraft für die berufliche und globale Identitätsentwicklung von Jugendlichen und jungen Erwachsenen untersucht haben, gibt es nur wenige Erkenntnisse zur kulturellen Identitätsentwicklung.

In Kapitel 3 habe ich daher die beschriebenen Autonomie- und Zugehörigkeitsaspekte in den Aufsätzen der Jugendlichen (siehe Forschungsziel 1) mit Fragebogendaten zu ihrem kulturellen Identitätscommitment verknüpft. „Commitment“ bezieht sich dabei auf die Entscheidung für eine Identitätsoption und deren Integration in das Selbst. Es wurde nur ein Zusammenhang zwischen Autonomie und/oder Zugehörigkeit und dem kulturellen Identitätscommitment gefunden. Unter den Jugendlichen, die sich als „nur-deutsch“ identifizieren, wiesen die Jugendlichen mit geringer Autonomiewertschätzung höheres kulturelles Identitätscommitment auf als diejenigen die Autonomie überhaupt nicht wertschätzten. Gleichzeitig zeigten überraschenderweise Jugendliche mit hoher Autonomiewertschätzung kein höheres Identitätscommitment als Jugendliche die Autonomie überhaupt nicht wertschätzten, was die Annahme eines linearen Zusammenhangs zwischen Autonomiewertschätzung und kulturellem Identitätscommitment in Frage stellt.

In Kapitel 4 verwendete ich Fragebogendaten (drei Zeitpunkte über den Zeitraum von 16 Wochen) von  $N = 198$  Jugendlichen, die an dem *Identitätsprojekt* – eine schulische Intervention zur Steigerung der kulturellen Identität von Jugendlichen – teilnahmen, sowie von Jugendlichen in der Vergleichsgruppe, welche an regulären Klassenaktivitäten teilnahmen. Unabhängig von der Interventionsbedingung zeigten die Ergebnisse, dass die Befriedigung der Bedürfnisse nach Autonomie und Zugehörigkeit die Entwicklung der kulturellen Identität erheblich beeinflussen. Intrinsische Motivation wurde mit einer stärkeren Auseinandersetzung mit der kulturellen Identität in Verbindung gebracht, während das Gefühl der Zugehörigkeit zu Gleichaltrigen mit positiveren Gefühlen in Bezug auf die kulturelle Identität verbunden war.

Diese Studien deuten darauf hin, dass Autonomie und Zugehörigkeit bei der Entwicklung der kulturellen Identität eine Rolle spielen. Jedoch wurde in beiden Studien kein (starker) Zusammenhang zwischen Bedürfnisbefriedigung von Autonomie und Zugehörigkeit und Identitätscommitment gefunden. Dies deutet darauf hin, dass die Befriedigung der Grundbedürfnisse nach Autonomie und Zugehörigkeit allein nicht ausreicht um Identitätscommitment zu beeinflussen, sondern nur um die Auseinandersetzung mit und positive Gefühle in Bezug auf die kulturelle Identität zu beeinflussen.

### **3. Forschungsziel**

Mein drittes Forschungsziel bestand darin, zu untersuchen, ob die Bedürfnisbefriedigung von Autonomie- und Zugehörigkeit im Schulkontext die Wirksamkeit des Identitätsprojekts erhöht, d.h. die kulturelle Identitätsentwicklung von Jugendlichen steigert. Frühere Studien haben gezeigt, dass das Identitätsprojekt die Entwicklung von kultureller Identität im Schulkontext fördern kann (Umaña-Taylor et al., 2018). Da die Effekte jedoch variieren (Abdullahi et al., 2024; Ceccon et al., 2023; Juang et al., 2020; Schachner et al., 2024a), ist es wichtig Faktoren zu untersuchen, die die Wirksamkeit der Intervention beeinflussen können.

Dies habe ich in Kapitel 4 mit Hilfe der Längsschnittdaten der Jugendlichen, die am Identitätsprojekt teilgenommen haben, untersucht. Ergebnisse zeigen, dass Jugendliche, die sich stärker zu Gleichaltrigen zugehörig fühlten und über bessere Beziehungen zu ihren Lehrer\*innen berichteten (Befriedigung von Zugehörigkeit), sich mehr mit ihrer kulturellen Identität auseinandersetzten, wenn sie am Identitätsprojekt teilnahmen. Darüber hinaus zeigten Jugendliche, die am Identitätsprojekt teilnahmen, nur in Verbindung mit guten Lehrer\*innenbeziehungen mehr Identitätscommitment und positivere Gefühle in Bezug auf ihre kulturelle Identität. Bei wahrgenommenen Autonomieunterstützung durch Lehrkräfte waren die Ergebnisse jedoch entgegengesetzt zu den Erwartungen: Jugendliche, die am Identitätsprojekt teilnahmen und Autonomieunterstützung durch ihre Lehrer\*innen erfuhren, haben sich weniger mit ihrer kulturellen Identität auseinandergesetzt. Zusammenfassend verdeutlichen die Ergebnisse, wie wichtig es ist, die Bedürfnisbefriedigung von Autonomie und Zugehörigkeit bei der Konzeption und Umsetzung schulischer Interventionen zu berücksichtigen, da sie die kulturelle Identitätsentwicklung sowohl negativ als auch positiv beeinflussen können.

#### **4. Forschungsziel**

Mein viertes Forschungsziel war die Untersuchung des Zusammenhangs zwischen der Angst von Lehrkräften, für rassistisch gehalten zu werden, und ihrer selbst wahrgenommenen Fähigkeit, die Autonomie- und Zugehörigkeitsbedürfnisse ihrer Schüler\*innen zu unterstützen. Als wichtige Bezugsperson im Leben von Jugendlichen spielen Lehrkräfte eine wesentliche Rolle bei der Befriedigung der Autonomie- und Zugehörigkeitsbedürfnisse von Jugendlichen und damit auch ihrer kulturellen Identitätsentwicklung. Es gibt jedoch nur wenig Forschung dazu, wie sich die Erfahrungen von Lehrkräften in kulturell vielfältigen Klassen, insbesondere die Angst, für rassistisch gehalten zu werden, auf ihre Fähigkeit auswirkt, die Bedürfnisse der Schüler\*innen nach Autonomie und Zugehörigkeit zu unterstützen.

In Kapitel 5 habe ich Fragebogendaten von  $N = 584$  Lehrkräften in Deutschland verwendet, um dieses Ziel zu untersuchen. Die Ergebnisse weisen in folgende Richtung: Je mehr Lehrkräfte sich Sorgen machten, von ihren Schüler\*innen als rassistisch wahrgenommen zu werden, desto weniger waren sie in der Lage, die Autonomiebedürfnisse ihrer Schüler\*innen zu unterstützen, da sie mehr Stress und weniger Selbstwirksamkeit im Zusammenhang mit kultureller Vielfalt erlebten. Außerdem waren Lehrkräfte, die mehr Angst hatten, als rassistisch wahrgenommen zu werden, weniger in der Lage, die Zugehörigkeitsbedürfnisse ihrer Schüler\*innen zu unterstützen, was teilweise durch eine geringere Selbstwirksamkeit in Bezug auf kulturelle Vielfalt moderiert wurde. Zusammenfassend zeigen diese Ergebnisse, dass die affektiven Erfahrungen der Lehrkräfte in kulturell vielfältigen Klassenzimmern nachteilige Folgen für die kulturelle Identitätsentwicklung von Schüler\*innen haben können, da Lehrkräfte, die Angst haben, für rassistisch gehalten zu werden, weniger in der Lage sind die Bedürfnisse der Schüler\*innen sowohl nach Autonomie als auch nach Zugehörigkeit zu unterstützen.

### **Diskussion**

Diese Ergebnisse untermauern die Wichtigkeit, Autonomie und Zugehörigkeit als Grundbedürfnisse für alle Jugendliche anzuerkennen. Dabei muss Autonomie neu definiert werden – Autonomie ist nicht das Gegenteil von Zugehörigkeit, sondern die Möglichkeit, willentlich zu Handeln. Wird jedoch nicht Autonomie, sondern die Abkopplung von den Eltern, als Voraussetzungen für eine gesunde Entwicklung von Jugendlichen gesehen, kann dies das Bedürfnis der Zugehörigkeit untergraben, gesunde Familiendynamiken gefährden und Eltern-Kind-Beziehungen pathologisieren, insbesondere bei rassistisch markierten Jugendlichen, die Autonomie nicht als Abkopplung verstehen (Kağıtçıbaşı, 2013). Daher ist es dringend erforderlich, dass Psycholog\*innen und Lehrkräfte ein umfassenderes und kultursensibles Verständnis für die Entwicklung von Jugendlichen haben, und wie sie diese am besten unterstützen können.

Die Ergebnisse unterstreichen außerdem die Relevanz der Bedürfnisbefriedigung von Autonomie und Zugehörigkeit im schulischen Kontext und bieten wertvolle Erkenntnisse für die kulturelle Identitätsentwicklung. Lehrkräfte spielen eine wichtige Rolle in diesem Prozess, indem sie durch das Anerkennen und Verstehen der Wünsche, Vorlieben und Perspektiven der Schüler\*innen ihr Bedürfnis nach Autonomie unterstützen. Diese haben dann die Energie, und das richtige Umfeld, um ihre kulturelle Identität zu erkunden (Luyckx et al., 2009). Zudem tragen starke Gefühle der Zugehörigkeit zur Peer-Gruppe bei Jugendlichen zu einer positiven Selbstwahrnehmung ihrer kulturellen Identität bei (Rageliené, 2016). Die Anerkennung dieser unterschiedlichen Prozesse von Autonomie und Zugehörigkeit im schulischen Umfeld ist für Schulen von entscheidender Bedeutung. Die Schaffung eines Umfelds, das sowohl Autonomie als auch bedeutungsvolle Beziehungen zu Gleichaltrigen fördert, kann positiv zu ihrer kulturellen Identitätsentwicklung beitragen und so das Wohlbefinden von Jugendlichen verbessern.

Andererseits zeigen die Ergebnisse auch, dass die Befriedigung von Bedürfnissen allein nicht ausreicht, um alle Prozesse der kulturellen Identitätsentwicklung zu fördern. Autonomie- und Zugehörigkeitsbefriedigung standen außerhalb des Identitätsprojektes nicht mit kulturellem Identitätscommitment im Zusammenhang. Es wird deutlich, dass strukturierte Anreize, wie sie das Identitätsprojekt bietet, jenseits von Autonomie- und Zugehörigkeitsbefriedigung im schulischen Kontext notwendig sein könnten, um die Identitätsentwicklung von Jugendlichen zu unterstützen. Daher sollte die Befriedigung der Bedürfnisse von Autonomie und Zugehörigkeit im schulischen Kontext mit Möglichkeiten zur Auseinandersetzung mit der kulturellen Identität einhergehen, um die Entwicklung der kulturellen Identität zu fördern.

Die Ergebnisse haben auch Auswirkungen auf die Gestaltung von Interventionen zur Förderung der kulturellen Identitätsentwicklung. Insbesondere positive Lehrer\*innen-Schüler\*innen-Beziehungen werden als wichtige Bedingung für Interventionseffekte deutlich.

Im Rahmen des Identitätsprojekts schaffen diese Beziehungen ein Umfeld, in dem Jugendliche sich sowohl sicher fühlen, sich zu öffnen, als auch sensible Themen, wie beispielsweise Erfahrungen von Diskriminierung, zu besprechen (Walton & Yeager, 2020).

Schließlich unterstreichen diese Ergebnisse, wie wichtig es ist, ein schulisches Umfeld zu schaffen, in dem Lehrkräfte in der Lage sind, die Autonomie- und Zugehörigkeitsbedürfnisse ihrer Schüler\*innen zu unterstützen. Die Erfahrungen von Lehrkräften in kulturell vielfältigen Klassenzimmern, insbesondere ihre Angst, für rassistisch gehalten zu werden, können nachteilige Folgen sowohl für die Lehrkräfte als auch die Schüler\*innen haben. Durch die Einführung umfassender Schulungsprogramme für Lehramtsstudierende und Lehrkräfte, die ihnen Ressourcen und Instrumente an die Hand geben, um Rassismus im Klassenzimmer zu erkennen und zu bekämpfen, können wir die Bedürfnisse von Lehrkräften in kulturell vielfältigen Schulumgebungen unterstützen. Nur so können sie die Autonomie- und Zugehörigkeitsbedürfnisse der Schüler\*innen, und damit die Entwicklung ihrer kulturellen Identität, unterstützen.

Entscheidend bei all diesen Überlegungen ist, dass sowohl Autonomie als auch Zugehörigkeit für das Wohlbefinden und die Entwicklung aller Jugendlicher unverzichtbar sind. Es muss jedoch vermieden werden, ein reduktionistisches Verständnis von Autonomie und Zugehörigkeit („Menschen/Kulturen schätzen entweder Autonomie und Zugehörigkeit“, z.B. Hofstede, 1980; Markus & Kitayama, 1991) durch eine andere Simplifizierung („Autonomie und Zugehörigkeit sind allen Menschen gleich wichtig“) zu ersetzen. Motivationale und kulturpsychologische Theorien betonen neben der universellen Bedeutung der psychologischen Grundbedürfnisse von Autonomie und Zugehörigkeit auch kulturelle Unterschiede in der Bedeutung, Wichtigkeit und Balance dieser Bedürfnisse (Coşkan et al., 2016; Kağıtçıbaşı, 2005; Ryan & Deci, 2020). Daher müssen kulturelle und individuelle Unterschiede in der Art und Weise, wie die Bedürfnisse von Autonomie und Zugehörigkeit erfüllt werden, bei der Arbeit mit Jugendlichen stets berücksichtigt werden.



**Fazit**

Zusammenfassend beleuchtet diese Arbeit das Zusammenspiel von Autonomie, Zugehörigkeit und kulturelle Identitätsentwicklung von Jugendlichen im deutschen Schulkontext. Sie betont Autonomie und Zugehörigkeit als wichtige psychologische Grundbedürfnisse bei kulturell vielfältigen Jugendlichen, wobei der kulturelle Hintergrund eine Rolle für ihre Bedeutung und optimale Balance spielt. Autonomie und Zugehörigkeit ohne Anreize zur Entwicklung der kulturellen Identität, wie sie das Identitätsprojekt bietet, haben unterschiedliche Auswirkungen auf die Entwicklung dieser Identität. Gleichzeitig sind gute Lehrer\*innen-Schüler\*innen-Beziehungen entscheidend für die Wirksamkeit von Interventionen, was die Notwendigkeit unterstreicht, die Bedürfnisbefriedigung Jugendlicher bei der Gestaltung von Interventionen zu berücksichtigen. Dies betont die Dringlichkeit, Lehrkräfte in kulturell vielfältigen Schulen zu unterstützen, damit sie im Gegenzug den Autonomie- und Zugehörigkeitsbedürfnisse von Schüler\*innen entgegenkommen können. Insgesamt zeigen die Ergebnisse, wie wichtig es ist, sowohl Autonomie als auch Zugehörigkeit als grundlegende Bedürfnisse aller Jugendlichen anzuerkennen. Ein schulisches Umfeld, das beide unterstützt, spielt eine entscheidende Rolle in der kulturellen Identitätsentwicklung von Jugendlichen; jedoch sind kultursensible Ansätze zur Förderung von Autonomie und Zugehörigkeit unerlässlich, da ihre Befriedigung bei kulturell vielfältigen Jugendlichen variieren kann.

## 1. Introduction

### 1.1 Adolescence

Adolescence is a crucial developmental stage, driven by physical, cognitive and social changes. It marks the transition towards self-reliance, the strengthening of relationships outside of the family, and the gaining of more responsibilities and rights (Steinberg, 2023). Amidst these changes, adolescents are exploring who they are and deciding who they want to be. This is called identity development, and is a central task of adolescence (Erikson, 1968). Developing a coherent and stable identity holds substantial implications for well-being across the life span, and is associated with factors such as better psychological well-being, high-quality relationships, and higher life satisfaction and academic achievement (Crocetti, 2017).

The social environment plays a pivotal role in shaping adolescents' identity development (Erikson, 1968; Eccles & Roeser, 2011; Ryan & Deci, 2017). As such, identity development is strongly influenced by whether the two basic psychological needs for autonomy and relatedness are fulfilled by the adolescents' environment (Kağıtçıbaşı, 2013). Autonomy typically refers to a sense of self-directed agency, wherein individuals can act in alignment with their own values and desires. Relatedness entails feeling connected to others and fostering meaningful relationships (Ryan & Deci, 2017). Autonomy and relatedness play crucial roles in identity development because the process of exploring and comparing various potential identity options (e.g., different career options) demands considerable effort, as does the internalization of a chosen aspect of identity (Ryan & Deci, 2017). Satisfying the basic psychological needs for autonomy and relatedness may serve as psychological resources for these processes, as they foster a sense of psychological freedom and feelings of social support, respectively (Luyckx et al., 2017; Vansteenkiste et al., 2020). Recognizing and meeting adolescents' basic psychological needs is of particular importance, given the many critical changes and transitions that characterize this developmental stage (Laporte et al., 2021).

Eccles and Roeser (2011) specifically highlight the significance of schools in addressing autonomy and relatedness needs of adolescents (stage-environment fit). Schools that prioritize supporting students' needs by fostering choices in learning and encouraging social connections with teachers and peers, are more likely to promote favorable developmental outcomes in adolescents, including identity development. Research especially underscores the importance of teacher support of autonomy and relatedness in identity development (Erikson, 1968; Eccles & Roeser, 2011; Flum & Kaplan, 2012).

Despite numerous studies conducted on autonomy and relatedness across diverse (cultural) contexts, limited research has delved into how adolescents themselves define and experience autonomy and relatedness in their lives. Moreover, existing research on autonomy and relatedness satisfaction and identity development has been largely limited to global and vocational identity development (e.g., Luyckx et al., 2017), and not focused on cultural identity<sup>3</sup> development. Cultural identity development is important for all adolescents, but plays an especially important role for ensuring the well-being of racially minoritized<sup>4</sup> adolescents who are developing their identity while contending with negative stereotypes and experiencing discrimination based on their group (Umaña-Taylor & Rivas-Drake, 2021). Thus, investigating factors that promote the development of cultural identity among culturally diverse adolescents<sup>5</sup> is of utmost importance.

In this dissertation I<sup>6</sup> investigate the interplay of adolescents' autonomy, relatedness,

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<sup>3</sup> Cultural identity is used here as an overarching term that incorporates both heritage cultural and national identity.

<sup>4</sup> "Racially minoritized" refers to individuals and groups, including those in the numerical majority, who have experienced a reduction in cultural, economic, political, and social power due to factors related to their racial, ethnic or cultural identity. This term is often used together with "racially majoritized" to highlight the impact of systemic processes that marginalize or advantage certain racial, ethnic or cultural communities.

<sup>5</sup> The term "culturally diverse adolescents" will be used to refer to the targeted adolescents in Germany throughout this dissertation, who represent a wide array of cultural backgrounds, including both racially minoritized and majoritized groups. It highlights that these adolescents are not viewed as a homogeneous group; instead, our analysis consistently takes into account the varied and nuanced realities of these adolescents, aiming to provide a comprehensive understanding of their experiences within the German context.

<sup>6</sup> In the introduction, I employ the first person singular ("I") to convey my individual contributions and perspective. However, as the empirical chapters that follow (Chapters 2 to 5) were conducted collaboratively with co-authors, I switch to the first person plural ("we") when discussing the research conducted in these empirical chapters and in the subsequent discussion (Chapter 6) to accurately reflect the collective effort.

and cultural identity development in the German school context from both a universalistic and contextual perspective. It is important to recognize what is universally good for adolescent development (universalistic) and also to be cognizant of contextual-environmental differences such as cultural background, that shape optimal development in adolescents (contextual; Kağıtçıbaşı, 2013). In Chapter 1, I define central concepts of autonomy, relatedness, heritage cultural and national identity, drawing on previous research in (cross-)cultural, developmental, social and motivational psychology to formulate a conceptual model. Specifically, I posit that autonomy and relatedness are both universally important to adolescents, but their meaning and interplay may differ across adolescents' diverse cultural backgrounds. Further, I hypothesize that autonomy and relatedness satisfaction within the school context will promote cultural identity development in the school context, particularly within contexts of school-based interventions. Lastly, I expect teachers' affective experiences in culturally diverse classrooms to impact their ability to support adolescents' needs for autonomy and relatedness in the classroom. The relationships posited in the conceptual model are empirically tested in Chapters 2 to 5, using qualitative and quantitative data collected with adolescents and teachers in Germany. Finally, the findings will be discussed in Chapter 6.

## **1.2 Autonomy and Relatedness: A Dichotomy or Compatible Basic Needs?**

Although the acknowledgment of autonomy and relatedness as basic psychological needs is widespread, varying conceptualizations exist. In the ensuing sections, I will first describe earlier prominent cross-cultural theories that perceive autonomy and relatedness as opposite ends of one spectrum, on which cultures differ. Following this, I will delve into motivational and contemporary (cross-)cultural theories, presenting autonomy and relatedness as two separate but both universally important needs, with variations across cultural contexts.

### ***1.2.1 Autonomy vs. Relatedness***

Autonomy and relatedness are focal points in various cross-cultural theories, which seek to uncover patterns of similarities and differences across diverse societies, even those

geographically distant. Many prominent cross-cultural theories categorize individuals and cultural groups based on their valuing of either autonomy or relatedness, often depicting them as opposing ends of a spectrum. Most well-known among these theories is the individualism–collectivism framework (Hofstede, 1980). It distinguishes individualistic cultures, which are characterized by a focus on the needs of oneself and one’s immediate family, from collectivistic cultures, which place greater importance on the goals and well-being of the group.

Hofstede’s (1980) characterization of individualism–collectivism thus focuses on the cultural level; in contrast, Markus and Kitayama’s (1991) influential theory focuses on individuals’ self-construals. The theory posits that in East Asian cultures, there is an emphasis on viewing oneself in connection with others, known as interdependent self-construal. Contrarily, Euro-American cultures tends to prioritize an independent self-construal, where individuals see themselves as separate and distinct from others. Despite the empirical evidence stemming mostly from Euro-American and East Asian contexts, the authors claim that interdependent self-construals are also prevalent in other cultures categorized as collectivistic. Therefore, despite some criticism on this conceptualization and its empirical foundation (e.g., Matsumoto, 1999), the dimensions of independence vs. interdependence and individualism vs. collectivism are commonly considered interchangeable in theoretical definitions and measurements (Krys et al., 2022).

Other cross-cultural theories that categorize individuals based on autonomy and relatedness include, but are not limited to, Greenfield (2013, *gesellschaft* vs. *gemeinschaft*), Schwartz (2006, autonomy vs. embeddedness), and Gelfand (2018, tightness vs. looseness). In all these theories, individuals and groups valuing autonomy (individualistic/ independent/ *gesellschaft*/ autonomy/ looseness) are portrayed as autonomous but also separate, while those valuing relatedness (collectivistic/ interdependent/ *gemeinschaft*/ embedded/ tightness) are

seen as related to others but also lacking autonomy. This has led to questioning the significance and even the existence of autonomy in related cultures (Kağıtçıbaşı, 2017).

However, evidence suggests that cross-cultural variations in measures such as individualism/collectivism or independence/interdependence are not as extensive or consistent as often assumed, with values exhibiting greater variability within countries than between them (Oyserman et al., 2002). Even in countries traditionally associated with a high regard for autonomy, both autonomy and relatedness are valued (Krys et al., 2022). Moreover, studies have found the independent–interdependent self-construals to be overly broad and not unidimensional (Santamaría et al., 2010). These findings emphasize the importance of questioning the underlying theoretical constructs of prominent cross-cultural theories.

Nonetheless, this dichotomized framing of autonomy and relatedness is still prevalent and has led to a bias towards prioritizing autonomy over relatedness, both in the Global North and within the discipline of psychology. Valuing autonomy has long been viewed as synonymous to developmental progress of countries (Greenfield, 2013). Psychology in the Global North is influenced by individualistic assumptions and thus emphasizes the significance of achievement, self-actualization, self-reliance, and freedom of choice. This assumption has led to an overemphasis on the importance of autonomy in adolescent development, defining independence from others as a requirement for healthy human development (Kağıtçıbaşı, 2017). It is evident that within the framing of this developmental task, autonomy is once again positioned in contrast to, and at the expense of, relatedness (Kağıtçıbaşı, 2013).

Treating autonomy and relatedness as opposing ends of one dimension and overemphasizing autonomy over relatedness in adolescence oversimplifies these constructs and neglects the nuanced manner in which they coexist within (cultural) groups and individuals. This approach essentializes cultures by reducing cultural diversity into an oversimplified “binary” framework of cultures, i.e., cultures and individuals valuing

autonomy vs. those valuing relatedness (Krys et al., 2022). Consequently, restricted definitions of autonomy and relatedness are imposed on individuals and may adversely affect adolescent development (Kağıtçıbaşı, 2013). Therefore, transcending this restricted understanding of both autonomy and relatedness is imperative not only for an accurate portrayal of the intricate interplay between these constructs but also for promoting healthy adolescent development and well-being.

### ***1.2.2 Self-Determination Theory***

Self-determination theory (SDT; Ryan & Deci, 2017) is a well-established motivational theory with roots extending back to the 1970s (Deci, 1975). SDT posits that individuals possess an inherent inclination toward psychological growth, but need supportive conditions to engage in this development. SDT specifically argues that, for healthy development to unfold, individuals require support for the basic psychological needs for autonomy and relatedness, as well as competence (Ryan et al., 2019). In line with the central theme of this dissertation, I continue to focus here on the psychological needs for autonomy and relatedness.

Within SDT, autonomy refers to the experience of volition. This need is satisfied when individuals can act in accordance with one's own values and wishes, thus aligning their actions, thoughts, and feelings with their self. Relatedness refers to the inherent human desire to belong, and is satisfied by connecting with others and feeling significant in those relationships (Vansteenkiste et al., 2020). Autonomy and relatedness are not only viewed as compatible in SDT, but the fulfillment of all needs together leads to the most optimal outcomes of psychological growth and well-being (Ryan & Deci, 2020), and contribute to identity development (Skhirtladze et al., 2019), prosocial behavior (Tian et al., 2018), political engagement (Wüttke, 2020), and emotion regulation (Roth et al., 2019).

If one of the needs is frustrated, these processes are hindered. In regard to identity development for instance, parents supporting an activity (relatedness support) may provide a

starting point to begin internalizing that activity into own's own identity. However, the process of internalization will be incomplete when the individual does not feel like this activity is in line with their interests (autonomy frustration). Without autonomy, individuals may engage in the activity solely to please others (Haerens et al., 2015). On the other hand, if activities are in line with one's own values (autonomy satisfaction), but are not encouraged by close others (relatedness frustration), the internalization of this activity into one's identity is hindered too (Milyasvkaya et al., 2014).

While satisfying these psychological needs is important for healthy development at all life stages, how individuals experience need satisfaction evolves across the lifespan. According to SDT, need satisfaction is of particular importance during adolescence, as, due to the aforementioned physical, cognitive, and social changes, it constitutes a particularly crucial developmental stage for personal growth and development (Griffin et al., 2017). In contrast to other conceptions of adolescent development (e.g., individuation perspective, Oznobishin & Kurman, 2016), SDT regards adolescence as a period characterized by a movement toward autonomy and not a time of separation from adults. During adolescence individuals experience more autonomy and thus play a more agentic role in their own development (Soenens et al., 2019). They are able to choose and respond to their environments based on personal characteristics, rather than being dependent on external decisions made by primary caregivers (Laporte et al., 2021). In this process, relatedness to parents, teachers or peers serve as a secure foundation for adolescents to shape their identity, rather than something they become independent from during adolescence (Deci & Ryan 2000).

Moreover, SDT posits that the satisfaction of basic psychological needs is functional across cultures and (cultural) contexts. In contrast to Markus and colleagues (1996), who argued that autonomy is not important in collectivist cultures, SDT argues that autonomy is a universally important driver of psychological growth and well-being. This is supported by empirical evidence, showing that autonomy enhanced well-being and educational outcomes



also in cultures categorized as collectivistic (Chirkov & Ryan, 2001; Oga-Baldwin et al., 2017; Yu et al., 2018). SDT nonetheless underlines the importance of appreciating cultural variations in how these basic psychological needs are fulfilled (Ryan & Deci, 2020).

In conclusion, SDT underlines the importance and compatibility of autonomy and relatedness for adolescents across cultures, shaping their psychosocial development. Recognizing the universal importance of these basic psychological needs while appreciating cultural nuances ensures a holistic understanding of adolescents' growth and well-being. SDT provides a valuable lens through which to comprehend and support adolescents' development by satisfying both the needs for autonomy and relatedness.

### ***1.2.3 Autonomy and Relatedness in Context***

In many (cross-)cultural studies using the dimensions of individualism/collectivism or interdependence/independence, individualism/independence scales measure autonomy but also separateness (i.e., a lack of relatedness), and collectivism/interdependence scales measure relatedness but also a lack of autonomy. Newer (cross-)cultural theories (e.g., Kağıtçıbaşı, 2013) view this as a conceptual problem, as they understand autonomy and relatedness as separate entities; the presence of one does not necessitate the absence of the other. These theories build on the foundational frameworks of Erikson's psychosocial development theory (Erikson, 1968), SDT (Ryan & Deci, 2017), and cross-cultural theories (e.g., Hofstede, 2011). Going beyond the autonomy-relatedness dichotomy and in line with SDT, they define autonomy as volitional agency; therefore, autonomy does not conflict with relatedness, and both needs are seen as separate but compatible. Additionally, these theories go beyond SDT by situating identity development within familial and socio-cultural contexts.

One such theory addressing these previous shortcomings is the theory of the *autonomous-related self* (Kağıtçıbaşı, 2005, 2013, 2017). This theory posits two distinct dimensions of self, "agency/autonomy" and "interpersonal distance". Autonomy is construed as volition, while interpersonal distance pertains to the self's connection to others, i.e., a

spectrum from separateness to relatedness. Within this construal, autonomy neither suggests more nor less relatedness; as a distinct dimension, autonomy can exist alongside both relatedness or separateness.

Research within the past decades involving adolescents supports the aforementioned conceptualization, i.e., the compatibility and distinctiveness of autonomy and relatedness (Kağıtçıbaşı, 2017). Research conducted in Belgium and the Netherlands demonstrated that relatedness and autonomy are independent dimensions (Beyers et al., 2003; Huiberts et al., 2006). Moreover, American and Korean adolescents exhibited a stronger positive correlation between autonomy and relatedness compared to autonomy and separateness (Kim et al., 1998). In Germany, Phalet and Schönpflug (2001) discovered that between Turkish immigrant parents and their adolescent children, autonomy does not imply separateness. Similarly, Meeus and colleagues (2002) found that relatedness with parents promotes autonomy among Dutch, Moroccan and Turkish adolescents. Taken together, these findings align with the perspectives of SDT (Ryan & Deci, 2020), which suggest that adolescent autonomy develops within the context of parental relatedness (Kağıtçıbaşı, 2017).

Another implicit assumption of many predominant cross-cultural theories is that the valuing of autonomy and relatedness is stable across settings and time. However, newer research highlights that the balance between autonomy and relatedness may be dynamic (Tamis-LeMonda et al., 2008). For example, during adolescence autonomy may be more salient, as adolescents become increasingly independent from the influence of parents and other adults and gain more opportunities to decide their own behavior. This can lead to a temporary decline of relatedness with parents (Inguglia et al., 2015). Moreover, a number of studies have shown that the relative levels and balance of autonomy and relatedness may differ based on the social-cultural and familial contexts (Tamis-LeMonda et al., 2008). For example, a study conducted in Belgium showed that adolescents of Turkish descent indicated lower autonomy and higher relatedness than their peers of Belgian descent only in relation to

teachers and not mothers. This suggests that cultural variations in the balance between autonomy and relatedness may not be stable, but rather context-specific (Coşkan et al., 2016).

Together, these ideas challenge a binary value system that conceptualizes autonomy and relatedness as conflicting, and instead highlight the coexistence of both autonomy and relatedness within individuals and (cultural) groups. These findings advise against placing an excessive emphasis on separation from parents as a developmental goal in adolescence, as this may lead to undermining relatedness needs and harm healthy family relationships (Kağıtçıbaşı, 2005). The findings further highlight that autonomy and relatedness may differ based on developmental and contextual changes. The key is to both recognize that autonomy and relatedness are universally important for adolescent development while understanding contextual-environmental demands on adolescents may impact how autonomy and relatedness are experienced or satisfied.

### **1.3 Cultural Identity Development**

Identity development stands as a central task of adolescence, with adolescents navigating the process of defining themselves and their aspirations. In the following section I will describe central theories of adolescent identity development and define key identity processes. Following this foundational overview, my focus will shift to the examination of ethnic-racial identity development, beginning with its origins in U.S.-based research. Subsequently, I will apply insights from ethnic-racial identity research to the German setting, where the significance of cultural identity for German adolescents will be discussed. This progression aims to provide a comprehensive understanding of how adolescents across diverse contexts navigate identity formation.

#### ***1.3.1 Identity Development***

Though originally developed in 1968, Erik Erikson's (1968) theory of human development remains influential to this day. In alignment with SDT, this theory assumes that people have an innate drive towards psychological growth, which Erikson described as "ego

synthesis”, and is referred to as “integration” in SDT. This development is understood to occur through ongoing interaction with significant others and the wider cultural environment (Soenens & Vansteenkiste, 2023). Erikson (1968) specifically suggested that individuals must navigate eight successive developmental challenges that, when dealt with successfully, enhance their psychosocial resilience. If individuals however do not successfully navigate a developmental task, they become less equipped for the following developmental task and have an increased vulnerability for future developmental problems and psychological difficulties.

According to Erikson (1968), in adolescence individuals are faced with the central developmental task of identity development, where they either develop a clear understanding of their identity (“Identity”) or fail to do so, leading to uncertainty regarding one’s role in life (“Role Confusion”). Adolescents actively explore various alternative roles rather than passively adopting socially prescribed roles, striving to define themselves in terms of values they personally endorse. They face the complex task of integrating different aspects of their identity into a personally meaningful and unified whole, which is more than the sum of its parts and fosters a sense of continuity of one’s self across time and different situations (Erikson, 1968). From Erikson’s perspective, adolescence is a critical phase of human development, because a well-established identity is fundamental in achieving psychosocial maturity.

This identity develops in an interaction between individuals and their surroundings. Individual interests and talents may attract individuals to particular surroundings and these in return provide recognition (or not) of these identities, influencing their further development (Erikson, 1968). Erikson (1968) conceptualized identity development as requiring the gathering of information and actively considering multiple identity options (i.e., exploration), as well as deciding on and integrating one of these options into the self (i.e., commitment or resolution). While Erikson stressed that an initial resolution of one’s identity often occurs

during adolescence, he also posited that identity is never definitively resolved, but rather continues to evolve over the course of an individual's adult life.

Building on Erikson's foundational ideas, Marcia (1980) operationalized the processes of identity exploration and commitment more explicitly by developing the identity status model. While Erikson had conceptualized identity resolution as existing on a spectrum between identity and role confusion, Marcia introduced four different pathways by which adolescents navigated the process of identity development. Based on whether individuals engage in identity exploration and/or commitment, Marcia (1980) developed four identity statuses: achievement (exploration followed by commitment), foreclosure (commitment without exploration, often based on significant others), moratorium (exploration without (yet) committing), and diffusion (no exploration or commitment). These identity statuses have been supported and expanded by further research (e.g., Crocetti et al., 2008; Luyckx et al., 2005, 2006; Meeus et al., 2010).

Work using Marcia's identity status model as well as contemporary refinements have investigated well-being outcomes linked to each identity status among adolescents. Identity commitment based on identity exploration has been linked to a low prevalence of problem behaviors, coupled with high levels of well-being and agency (e.g., Schwartz et al., 2011; Shanahan & Pychyl, 2006). In contrast, a lack of both exploration and commitment has been related to psychosocial problem behaviors and low psychosocial functioning, (e.g., Laghi et al., 2013; Schwartz et al., 2011; Shanahan & Pychyl, 2006), and either identity exploration or commitment without the other shows mixed effects on psychological functioning and well-being, for example high levels of meaning in life as well as depression and anxiety (e.g., Schwartz et al., 2011). These results highlight the importance of identity development for adolescents' well-being.

### ***1.3.2 Ethnic-Racial Identity Development***

Building on the foundational theories of Erikson (1968) and Marcia's (1980) operationalization of identity development, the conceptualization of ethnic–racial identity<sup>7</sup> (ERI) has its roots in Phinney's (1989) original work on ethnic identity. ERI is a multifaceted construct, that is partially defined by the degree to which individuals explore their ethnicity and race as well as their self-identification, their beliefs, or their feelings about their group as part of their general self-concept (Umaña-Taylor, 2018). As individuals strive for a stable and consistent identity, ERI development is a normative process (Erikson, 1968; Umaña-Taylor, 2016).

In regard to ERI, exploration is crucial for adolescents to gain their own understanding of their ethnic–racial background, rather than passively adopting others' views, such as those of their parents, teachers or peers. Furthermore, exploration gives adolescents a clearer understanding of their identity, so-called identity resolution (Umaña-Taylor, 2016), or referred to as commitment by Marcia (1980). In addition, ERI includes the feelings that individuals have about belonging to their ethnic-racial group, i.e., ERI affirmation (Umaña-Taylor, 2016). According to social identity theory (Tajfel, 1981; Tajfel & Turner, 1986), having positive feelings towards the social groups one belongs to is crucial for upholding a positive self-image. Additionally, a favorable perception of one's group membership is thought to assist individuals in preserving their self-esteem when confronted with challenges.

In line with Erikson's theory of development (1968), understanding individuals' development of ERI necessitates focusing on different contexts that shape their identity,

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<sup>7</sup> It is important to acknowledge that terminology surrounding identity can vary significantly across different contexts. As this section focuses on research conducted in the United States, the term ethnic-racial identity will be used. Ethnicity reflects a collective cultural and social heritage (e.g., shared languages or traditions, Phinney, 1996), while race refers to socially constructed differences based on physical characteristics (primarily skin color, but also including others such as hair texture). This construction often exaggerates differences between groups while minimizing variations within, using these perceived differences to justify unequal resources and power in society (Helms, 1990). Individuals' identities are shaped by both their ethnicity and their racialization within the U.S. context. Therefore, the concept of an ERI more accurately captures the intertwined nature of ethnic and racial dimensions of identity, where separating one from the other is often impossible (Umaña-Taylor, 2016).

including social (e.g., family or school), historical, or developmental context (e.g., age; Umaña-Taylor, 2016). For example, numerous studies have highlighted the pivotal role of familial ethnic-racial socialization in shaping ERI development (e.g., Sladek et al., 2020). Moreover, the salience of race–ethnicity in the social context can vary, influencing ERI development. Based on self-categorization (Turner et al., 1987) and social identity (Tajfel, 1981; Tajfel & Turner, 1986) theories, the development of ERI is especially important and salient for racially minoritized adolescents due to their experiences of individual and institutional discrimination and marginalization, and may provide a protective function against these adverse experiences. Racially minoritized adolescents develop their ERI while being aware of their group’s marginalization in society, i.e., in a context where they encounter negative stereotypes and face ethnic-racial discrimination. In contrast, racially majoritized adolescents undergo this developmental journey from a position of privilege, where their ERI might often go unnoticed or be deemed “invisible”. However, despite differences in the socio-contextual conditions they encounter, ERI development is a normative experience among both racially minoritized and majoritized adolescents (Umaña-Taylor, 2023).

Next to social contexts, the developmental phase of adolescence impacts ERI, as it is during this phase of development, that individuals can begin to think abstractly about their identity. This results in increased exploration: in middle school, cognitive abilities enable meaningful consideration of ethnic–racial background, while in high school, encounters with discrimination and societal issues contribute to further exploration (Umaña-Taylor, 2018). The increase of ERI exploration and commitment/resolution across adolescence is supported by longitudinal studies (e.g., Umaña-Taylor et al., 2014).

ERI can directly promote adolescents’ well-being, as well as have a protective function against adverse experiences. These relationships differ depending on the aspect of ERI studied. Exploration and commitment/resolution have been linked to adolescent well-being: lower externalizing problems, lower depressive symptoms, greater academic self-

efficacy, greater social competence with peers, positive academic values and higher self-esteem (Umaña-Taylor, 2016). Commitment/resolution has been more consistently associated with well-being compared to exploration, however ERI exploration may have unique benefits for adolescents' long-term well-being (Umaña-Taylor, 2016). In regard to ERI affirmation, several cross-sectional and longitudinal studies with adolescents have provided support for the association between affirmation and academic values, active coping strategies, positive social functioning, self-esteem, and reduced depressive symptoms and health risks (Douglass & Umaña-Taylor, 2015; Rivas-Drake et al., 2014b; Umaña-Taylor et al., 2015; White et al., 2011). Additionally, in comparison to exploration or commitment/resolution, affirmation shows the strongest evidence for a protective function for adolescents regarding externalizing behaviors, acculturative stress and depressive symptoms (Umaña-Taylor, 2016).

Taken together, this indicates that ERI exploration and commitment/resolution could directly benefit adolescents: by participating in ERI exploration and commitment/resolution, adolescents may experience enhanced self-confidence and global identity commitment/resolution (i.e., developing an understanding of oneself across various life domains). This, in turn, could foster the well-being of adolescents (Erikson, 1968; Umaña-Taylor, 2016). On the other hand, ERI affirmation may more effectively mitigate the adverse effects of risk, as feeling positively about one's social group membership can act as protective when facing threats directed at one's social group (Tajfel, 1981; Tajfel & Turner, 1986).

Based on the importance of ERI development for adolescents and the theory reviewed here, the *Identity Project* was developed in the U.S. It was designed as a school-based intervention to provide all adolescents with the necessary tools to explore and deepen their understanding of their ERI (Umaña-Taylor et al., 2018). The theory of intervention proposed that giving adolescents opportunities to explore and resolve their ERI would lead to greater global identity commitment/resolution; in turn, this strengthened sense of identity was hypothesized to enhance adolescents' health and well-being (Umaña-Taylor & Douglass,



2017). Findings from a randomized control trial conducted in an ethnically and racially diverse high school showed that, in line with predictions, the intervention significantly increased adolescents' exploration of their ERI. This, in turn, resulted in increased ERI commitment/resolution six weeks later, and subsequently contributed to higher global identity commitment/resolution, self-esteem, academic performance, and reduced symptoms of depression one year later (Umaña-Taylor et al., 2018). Following its initial success, the Identity Project has been adapted for use beyond the U.S. (see Juang et al., 2022 for a detailed review). Further implementations in schools across North America and Europe yielded encouraging effects (e.g., Abdullahi et al., 2024; Ceccon et al., 2023, 2024), including in schools in Germany (Juang et al., 2020; Schachner et al., 2024a).

Terminology surrounding identity varies significantly across different contexts, with research conducted in the U.S. focusing on ethnicity and race, whereas German discourse leans towards discussions of descent and cultural identities. While both approaches aim to encompass individuals who experience marginalization, i.e., are “othered” and structurally disadvantaged based on phenotype, culture or religion, there are differences in the conceptualization of this marginalization across both contexts. The next chapter (1.3.3) will discuss the specificities of ERI in the German context.

### ***1.3.3 Heritage Cultural and National Identity in Germany***

In the German context, instead of race and ethnicity, the discourse focuses on categorizing individuals and groups based on culture and descent. This was a reaction to discursive shifts within Europe following the racist persecution policies under National Socialism. References to the category of race or ethnicity were considered taboo and increasingly sanctioned in public and political discourse. The concept of culture offered an alternative frame of reference for collectively homogenizing individuals and assigning them specific characteristics and traits. Culture functions as a substitute for race due to its conceptual vagueness, and operates with similar biological assumptions on the supposedly

hereditary nature of culture within groups (DeZim, 2023, for a more detailed description of the German context see Chapter 1.5).

In consequence, ERI is conceptualized as heritage cultural<sup>8</sup> identity in the German context. Heritage cultural identity encompasses the thoughts and feelings individuals have about being a part of their heritage cultural groups. In contrast to studies on ERI in the U.S., in Europe national identity (i.e., identification with the country of residence, e.g., Germany) is often included in studies together with heritage cultural identity (Juang et al., 2023a). This is because in Europe, national identity is frequently equated to ethnic identity, a phenomenon also referred to as ethnic nationalism (Brubaker, 2009). Until the year 2000, German citizenship was determined by *jus sanguinis* (descent) rather than *jus soli* (place of birth), linking ethnicity directly to the notion of being German. This leads to ethnicity being equated to nationality until today, fostering national identities in which being “German” is exclusively associated with white, Christian-secular individuals, and as a contradiction to “foreigners”, “migrants”, or being of immigrant descent<sup>9</sup> (Moffitt et al., 2018).

Therefore, heritage cultural and national identities are both important identities in the German context, especially within the context of acculturation. Acculturation refers to the cultural and psychological transformation that occurs when two or more cultural groups and their members come into direct contact (Berry, 2006). During the acculturation process, adolescents whose heritage culture(s) are not identical to the national culture<sup>10</sup>, are concurrently developing their identities in relation to their heritage culture(s) and the national

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<sup>8</sup> While in the German public discourse culture is often perceived as static and hereditary (DeZim, 2023), our approach adopts a dynamic view of culture. In line with Nathan (2015), we conceptualize culture as dynamic interacting cultural systems and social institutions, countering essentialist views of culture as unchanging and homogeneous. This perspective underscores the importance of both individual and collective agency in the continuous shaping of cultural meanings, emphasizing the fluidity and complexity of cultural experiences.

<sup>9</sup> “Immigrant descent” encompasses both first-generation immigrants, who immigrated, and second-generation immigrants, who have at least one foreign-born parent who immigrated.

<sup>10</sup> While most acculturation research focuses on individuals whose heritage culture(s) are not identical to the national culture, it is crucial to acknowledge that “acculturation” is inherently a bidirectional process, in which also adolescents whose heritage culture is identical to the national culture may maintain the national culture and/or adopt other heritage cultures, influencing psychological well-being outcomes such as self-esteem (Haugen & Kunst, 2017).

culture (Phinney, 1989). Berry (1997) proposed a two-dimensional model of cultural identification, investigating whether acculturating individuals maintain their heritage cultural identity and adopt the national identity. He suggested that the best well-being outcomes result from developing high heritage cultural and national identities (i.e., integration; Berry, 2006), bearing multiple benefits for psychological and sociocultural well-being (Nguyen & Benet-Martínez, 2013).

Other studies suggest that there may not be a single ‘best’ strategy of acculturation, but that the acculturation strategy is strongly affected by the context and national expectations on acculturation. Importantly, a misfit between an individual’s preferred acculturation strategy and societal expectations can have adverse effects. For example, when an individual desires to “integrate” but finds themselves in a society that prioritizes assimilation, maintaining aspects of their heritage culture may elicit further discrimination (Birman & Simon, 2014). In Germany, there exists an expectation that racially minoritized individuals assimilate, with visible cultural diversity being seen as a sign of failed integration (Moffitt et al., 2018).

This strongly influences adolescents’ cultural identity development in the German context. Due to the limited definition of what constitutes “being German”, the national identity may not be accessible for all. Having German ancestry still predominates having German citizenship in who is seen as “being German” (Ditlmann et al., 2011), and speaking German without an accent and not being Muslim are considered key attributes for individuals to be perceived as “German” (Foroutan et al., 2014). Germany has been identified to have the least inclusive national identity for Muslim youth when compared to other European countries, largely due to its national identity being defined in terms of ancestry and a Christian heritage. This definition contributes to adolescents of immigrant descent<sup>11</sup>

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<sup>11</sup> While the term “racially minoritized individuals” is generally used in this dissertation to refer to individuals marginalized based on their phenotype, ethnicity or culture, in the context of specific studies referenced, the term “immigrant descent” may be employed. This distinction is made to accurately represent the categorization used

identifying less strongly with the national identity than adolescents of non-immigrant descent (Fleischmann & Phalet, 2018). Moreover, heritage cultural and national identities are viewed as less compatible in Germany than in countries emphasizing multiculturalism more strongly (Yağmur & van de Vijver, 2012). This may have negative implications for adolescents' cultural identity development in the German context.

In Germany, adolescents of immigrant descent who have a stronger connection to their heritage identities tend to experience better psychological well-being, as evidenced by fewer depressive symptoms, increased life satisfaction, and higher self-esteem (Göbel & Preusche, 2019; Kunyu et al., 2020; Schachner et al., 2018; Schotte et al., 2018). On the other hand, having a stronger connection to their national identity is not consistently associated with socioemotional well-being (Schotte et al., 2018). In some studies, adolescents who identify strongly with their national identity have exhibited increased motivation and engagement in school (Schachner et al., 2016), although these findings are not consistent (Spiegler et al., 2018). Other studies show that only when national identity was coupled with a strong connection to their heritage identity during early adolescence, it has been identified as beneficial for school outcomes (Preusche & Göbel, 2022; Spiegler et al., 2018) and life satisfaction (Juang et al., 2023a). Taken together, these results highlight the importance of considering both heritage cultural and national identity in the development of adolescents, especially in the context of acculturation, as overlooking either aspect offers an incomplete understanding of how these intertwined identities collectively influence development and well-being (Juang et al., 2023a).

In light of the specificities of ERI in the German context, the Identity Project was adapted in the German context prior to implementation. In line with common terminology

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by these studies, which focus on categorizing participants based on their immigrant status rather than racial minoritization. It is important to note that while these categories often overlap, they may not fully encompass the same groups of individuals, and the distinction is made here to ensure clarity and fidelity to the referenced studies.

used in the German context, the concept of “ethnic–racial identity” was replaced with “cultural identity”, addressing both heritage cultural and national identity in its content (Juang et al., 2023b). Within the content of the intervention, the Identity Project highlighted regional variations within national identities, aimed at fostering a more dynamic understanding of culture and a more inclusive understanding of national identity, as well as underscoring the significance of cultural identity for racially minoritized and majoritized individuals. First implementations in the German context (Juang et al., 2020) found partial evidence for an increase in heritage cultural identity exploration throughout the Identity Project, and findings suggest that exploring one’s heritage cultural identity was related to greater global identity commitment/resolution. In recent implementations, we explored the interplay of the classroom cultural diversity climate and the Identity Project on adolescents’ heritage cultural identity development, finding that the Identity Project and a stronger critical consciousness climate in the classroom before the intervention promoted heritage cultural identity exploration, but not commitment/resolution in Germany (Schachner et al., 2024a).

As results show varying effects on heritage cultural identity exploration (Juang et al., 2020) and commitment/resolution (Schachner et al., 2024a), the conditions under which interventions take place need to be investigated (Walton & Yeager, 2020). One important condition influencing the efficacy of the Identity Project may be basic psychological need satisfaction within the school context (Eccles & Roeser, 2011; Erikson, 1968; Ryan & Deci, 2017). In the next chapter (1.4), I outline the pivotal role autonomy and relatedness satisfaction may play in shaping adolescents’ cultural identity development in more detail.

#### **1.4 Promoting Identity Development: Autonomy and Relatedness Satisfaction**

As summarized above, cultural identity development is a central task in adolescence, with racially minoritized adolescents facing additional challenges. As exploring, understanding and valuing one’s identity are important predictors of psychosocial and academic outcomes, it is important to investigate how to support all adolescents, but

especially racially minoritized adolescents, in the process of cultural identity development. In the following section I describe why the basic psychological needs for autonomy and relatedness may shape the cultural identity development of culturally diverse adolescents. Moreover, I describe how adolescents' needs for autonomy and relatedness can be satisfied in the school context, thus promoting cultural identity development.

#### ***1.4.1 Need Satisfaction as an Energizing Catalyst***

Despite their different theoretical origins, Erikson's (1968) view on identity development aligns well with SDT's (Ryan & Deci, 2017) perspective on identity. Both theories view humans as having the innate drive to seek information on and develop an integrated sense of self, i.e., identity development. Moreover, both theories describe healthy psychological growth involving interactions between individuals and their environment. However, exploring different identity options, committing to specific identities, and continually reassessing these commitments requires substantial effort. From an SDT perspective, psychological need satisfaction of autonomy and relatedness is a much-needed resource during these efforts and promotes healthy identity development (La Guardia, 2009). Supporting this assumption, cross-sectional and longitudinal studies with emerging adults confirmed that psychological need satisfaction was related to and predicted increases in identity exploration and commitment (e.g., Cordeiro et al., 2018; Luyckx et al., 2009; Skhirtladze et al., 2019).

The need for autonomy plays a central role in identity development. When individuals have the opportunity to act autonomously, they can ensure that their behaviors and decisions reflect their personal interests and values. This freedom acts as a motivational driver encouraging individuals to explore identity options and evaluate identity-relevant information (Luyckx et al., 2009). Moreover, adolescents in autonomy-supportive settings can be themselves, freely explore different roles, values and interests, and make their own choices, contributing to a secure and authentic identity (Ryan et al., 2019). Lastly, when identity

commitments are based on intrinsic motivation and on individual's own choices, they are accompanied by feelings of authenticity and self-expression (Erikson, 1968). In contrast, when commitments are made under the pressure of social expectations, individuals feel insecure about their identity (Ryan & Deci, 2017).

These assumptions are supported by empirical research with adolescents and emerging adults, underlining the importance of autonomy-supportive environments as energizing processes within identity development. Perceived autonomy-support is related to more global identity exploration and commitment (Sznitman et al., 2019), more self-endorsed and authentic decisions about a field of study in higher education (Katz et al., 2018), and greater self-acceptance (Inguglia et al., 2018). Moreover, identity commitments based on autonomous exploration have been further found to contribute to psychological well-being and academic outcomes (Inguglia et al., 2018).

Relatedness satisfaction too plays an important role in adolescent's identity development. For adolescents to develop and internalize their identity, adolescents' environment must provide adequate support for their identity-related exploration and commitments (Griffin et al., 2017). When individuals perceive support from their social network, satisfying their need for relatedness, this likely gives them the psychological security needed for them to explore their surroundings and self, and helps them gain an understanding of their identities. Additionally, support from important others for an individual's chosen identity strengthens their conviction in that identity (Soenens & Vansteenkiste, 2023). Studies have found relatedness satisfaction to positively predict global identity exploration and commitment (Luyckx et al., 2009), as well as boost individuals' sense of engagement and fulfillment in their identity development process (Griffin et al., 2017).

Taken together, theoretical and empirical evidence points towards the needs for autonomy and relatedness playing an important role in identity development. Though previous studies were focused on vocational or global identity development. I posit that the

relation between autonomy and relatedness satisfaction and identity development will also apply to cultural identity development processes of culturally diverse adolescents.

#### ***1.4.2 Need Satisfaction in the School Context***

The school context is an important developmental context for adolescents, where they spend much of their time and their daily activities and interactions heavily influence their learning and development (Eccles & Roeser, 2011). Schools play an important role in adolescents' cultural identity development, for example through norms and the cultural diversity climate (see our studies Schachner et al., 2024a, 2024b for more detail). However, basic psychological needs are important in the school context, as educational environments that support their satisfaction enhance students' psychosocial and academic outcomes, including identity development (Verhoeven et al., 2019). I argue that by supporting or thwarting adolescents' needs for autonomy and relatedness, schools play an important role in the cultural identity development of culturally diverse adolescents. In the following section, I will describe how the school setting can promote the needs for autonomy and relatedness by focusing on intrinsic motivation, teachers and peers.

##### **1.4.2.1 Intrinsic motivation.**

One important aspect of autonomy in the school context is (academic) intrinsic motivation, i.e., engaging in (academic) activities that resonate with individuals' values, interests, and aspirations. When students engage in learning activities that are intrinsically motivated within the school setting, these activities are experienced as spontaneous, self-determined, and voluntary self-expressions. This encourages further engagement with that learning activity and personal development through continuous interaction between individuals and their educational surroundings (La Guardia, 2009).

Waterman (2004) proposes that intrinsic motivation plays a crucial role in selecting activities and goals that can develop into important aspects of one's identity. He highlights the importance of natural inclinations in identity development. Through play, many children



discover their fascination and unique abilities in certain activities. For instance, a young girl who enjoys running and jumping may realize she excels in these areas. Her play becomes more focused and sophisticated as she learns techniques to jump further, explores other sports, and becomes even faster. Her intrinsic motivation is evident in her active, self-driven engagement with and immersion in these athletic activities (e.g., racing with friends, running in the schoolyard, or joining a sports team), separate from any external conditions requiring such engagement such as P.E. class. Thus, intrinsic motivation by its nature is a process of identity exploration.

Extensive research involving adolescents and emerging adults has delved into the relationship between academic intrinsic motivation and the development of both global and vocational identities. Adolescents possessing a high degree of academic intrinsic motivation tend to be more self-directed and are likely to engage in positive exploration to ascertain how various options align with their inner self (La Guardia, 2009). Both cross-sectional and longitudinal studies further reveal that (academic) intrinsic motivation propels adolescents to commit to specific global identity choices and to form a stronger connection with these chosen identities (Cannard et al., 2016; Luyckx et al., 2017). For instance, research by Skinner and colleagues (2017) demonstrated that intrinsic motivation was linked to a heightened identification with being a scientist.

#### **1.4.2.2 Teachers.**

Research highlights the critical role of teacher support for autonomy and relatedness in the processes of identity development (Erikson, 1968; Eccles & Roeser, 2011; Flum & Kaplan, 2012), especially at important developmental crossroads such as school transitions (La Guardia, 2009). Teachers can create a nurturing environment for personal discovery and the development of intrinsic interests through autonomy support in students (La Guardia, 2009). Autonomy-supportive teachers strive to comprehend and recognize student's aspirations, preferences, and viewpoints. They encourage students to start and engage in new

activities, interests, or roles as well as offer choices. Autonomy supportive teaching allows students to feel more ownership of activities, and empirical studies have found that autonomy supportive practices promote students' intrinsic motivation (see Ryan & Deci, 2020 for a review).

When teachers are autonomy supportive, they are typically also supportive of students' relatedness: they are more attuned to students' perspectives, attempting to understand, acknowledge, and where possible, be responsive to their perspectives, all important aspects of relatedness (Ryan & Deci, 2020). Teacher relatedness itself is also associated with more academic intrinsic motivation (La Guardia, 2009). Furthermore, the nature of teachers' interactions with adolescents, along with their reactions to the (cultural) groups adolescents identify with or the different roles adolescents explore, can either facilitate or hinder the integration of identity options into one's identity (Soenens & Vansteenkiste, 2023).

Using the example of the budding athlete, although the enjoyment with which she engages in her athletic activities likely contributes to her developing an identity as an athlete, it is the support from those close to her (relatedness support) that can advance intrinsic interests into an identity. Teachers can subtly promote intrinsic interests (e.g., acknowledging her talents) or offer more direct encouragement (e.g., signing her up for athletic clubs, helping her improve her form), but what is crucial that the teacher is engaged, caring, warm and interested in the child's activities without bias (La Guardia, 2009).

The importance of teachers supporting both student autonomy and relatedness together is highlighted by two distinct intervention studies conducted by Faircloth (2012) and Sinai and colleagues (2012). Through educational activities, the interventions aimed to promote exploration of global identity. These studies show that when teachers use autonomy supportive teaching practices, rather than controlling ones, students tend to engage more in identity exploration. However, it was observed that a secure classroom environment was a prerequisite for motivating students to actively participate in identity exploration. These

results suggest that when students feel supported by their teachers (relatedness support), they feel secure and have the energy necessary to engage in identity development processes when presented with opportunities to do so (autonomy support).

A crucial assumption of SDT is, that while the function of autonomy and relatedness is universal, need support is dependent on the learner's personal frame of reference (Ryan & Deci, 2020). Teacher autonomy support is associated with positive outcomes in the U.S., Russia, Nigeria, India, Japan, South Korea and China (for a review, see Ryan & Deci, 2020), however autonomy and relatedness support may look different for students of diverse cultural backgrounds (e.g., Cheng et al., 2016). Therefore, a central aspect of effective teaching is being able to effectively adapt teaching styles to students' frame of reference (Ryan & Deci, 2020).

Taken together, these studies highlight the importance of teachers' support of autonomy and relatedness for all students' identity development, while considering students' cultural background. Acknowledging the importance of teachers attending to their students' needs, it is essential to note that environmental factors and experienced stressors such as job demands or burnout can drive teachers towards more controlling behaviors, thereby diminishing the quality of their relationships with students and undermining students' autonomy and relatedness (Ryan & Deci, 2020). Research has indicated that culturally diverse classrooms can also present stressors for teachers (e.g., Glock et al., 2019; Gutentag et al., 2018), and can influence teachers' self-efficacy, quality of teaching and their relationships with students (Skaalvik & Skaalvik, 2017). However, not much research has focused on how teachers' experiences in culturally diverse classrooms, specifically, their concerns about appearing racist and their cultural diversity related stress and self-efficacy, may influence their ability to support students' needs for autonomy and relatedness. Initial studies among teachers in the U.S. have highlighted that the concern about appearing racist may negatively impact teachers and students (Tropp & Rucinski, 2022). However, a more detailed

investigation into factors that influence teachers' support of students' needs for autonomy and relatedness in culturally diverse classrooms is crucial.

### **1.4.2.3 Peers.**

During middle childhood and adolescence, individuals' social contexts significantly widens, and adolescents often turn to peers as their main sources of social support over parents (Soenens et al., 2019). Relatedness to peers and friends offers a secure foundation from which adolescents can explore their identity (Deci & Ryan, 2000). Belonging to peer groups and receiving support from friends are positively related to identity exploration and commitment/resolution in adolescents (Rageliené, 2016).

Peer groups are not only important due to the support they provide (see our study Wenzing et al., 2024 for more details), adolescents also define themselves in relation to their peers (Nawaz, 2011). As adolescents navigate school, they develop their identity while observing how they and different facets of their identity are perceived and valued by their peers (La Guardia, 2009). Adolescents often compare themselves to their peers and model their behavior and values based on group norms, leading peer groups to wield significant influence on adolescents' identity development (Griffin et al., 2017). In their interactions with their peers, adolescents gather information and based on either positive or negative peer feedback adjust their behavior in an effort to feel that their identity is in line with their values (autonomy) while also feeling connected to their peers (relatedness; Griffin et al., 2017). These comparisons can also influence adolescents' intrinsic motivation, which in turn may influence identity exploration and commitment. For example, peers' interest in sport predicted adolescents' intrinsic motivation for sport (Jõesaar et al., 2012).

Peers play an especially important role in regard to ERI or heritage cultural identity development. More diversity in peer groups in regard to the heritage culture composition may heighten individuals' awareness of their own heritage culture(s), making it a more central aspect of their identity, particularly when in the numerical minority (self-categorization

theory, Turner et al., 1987). Moreover, the valuation of one's heritage cultural identity is influenced by how others within the same heritage cultural group perceive and value that identity (social identity theory, Tajfel, 1981; Tajfel & Turner, 1986). In this line, adolescents with more friendships within the same heritage cultural group tend to report more positive feelings about their heritage culture (i.e., affirmation; Graham et al., 2014). Friendships provide a platform for socialization, through which heritage cultural knowledge is transmitted, and offer opportunities for adolescents to navigate shared experiences of discrimination, contributing to increases in heritage cultural identity exploration and commitment (Jugert et al., 2020a). These findings underscore the significance of peers and friendships in shaping adolescents' identities, encompassing overall identity development as well as specific dimensions such as ERI and heritage cultural identity.

### **1.5 The German (School) Context: Assimilation under the Guise of Integration**

To understand the development of autonomy, relatedness and cultural identity among culturally diverse adolescents in Germany, the German political, social and school context needs to be described. Despite a long-standing history of immigration, politicians did not officially recognize Germany as a country of immigration until the 2000s (Bundeszentrale für politische Bildung, 2021). Today, it is the second most popular destination country for immigration (International Organization of Migration, 2022), with approximately 27% of Germany's population being of immigrant descent (Statistisches Bundesamt, 2022a). Additionally, Germany has received a significant number of children with experiences of flight; around 3% of the population have had experiences of flight, with around one-third of these individuals being minors (Mediendienst Integration, 2024).

Within the German context, the discourse surrounding race and racism is largely influenced by the historical legacy of National Socialism. The term "race" (Rasse) is considered a taboo and is seldom, if ever, mentioned in public discourse, while discussions of racism frequently center on right-wing extremism. Racism in Germany is often associated

solely with a specific historical period, namely National Socialism, which can overshadow and lead to the neglect of contemporary, everyday racism that persists but is not widely acknowledged (Roig, 2017). Despite the presence of global racial justice movements such as Black Lives Matter in Germany, there remains a gap in developmental science perspectives on adolescents' experiences with racism in Germany (Federal Government Expert Commission, 2021). The lack of attention to everyday instances of racism, both in everyday discourse and scholarly discussions, may hinder conversations about race and racism in German society and their implications for adolescent development within this context (Juang et al., 2021).

Instead of race and racism, the German discourse focuses on culture and descent. Non-white, non-Christian-secular individuals are racially minoritized and labeled as “of immigrant descent”, while reserving “German” identity for white, Christian-secular, non-immigrant individuals (Moffitt et al., 2018). This is accompanied by a demand that those perceived as “non-German” and of “immigrant descent” assimilate into the seemingly static national group in order to protect cultural homogeneity (Risse, 2018). While the scholarly definition of integration encompasses strong connections to heritage cultural and national groups (Berry, 1997), in German public discourse, integration is used synonymously with assimilation, with visible diversity being perceived as failed integration (Moffitt et al., 2018). This means that in Germany, there exists a significant emphasis on assimilation and a lack of awareness of racism, with immigrants' retention of aspects of their heritage culture frequently viewed as a form of separation in public discourse (Kunst & Sam, 2014).

As schools serve as a microcosm of the broader society, the silence around race and racism as well as the prevailing assimilationist climate in the German context is mirrored within the German school system. Pre-service and in-service teachers in Germany often lack adequate training to address issues of discrimination (Barrett, 2018), and an examination of Germany's school curricula reveals that topics related to racism and anti-Semitism are mostly

limited to history classes on National Socialism (Mercator Forum Migration und Integration, 2021). Teachers and schools lack knowledge and resources on how to adequately equip children and adolescents to navigate and understand racism experienced in everyday life. Consequently, adolescents' encounters with racism often go unrecognized, unaddressed and undiscussed, thus normalizing its existence (Juang et al., 2021). This is complimented by assimilative school policies, such as emphasizing monolingualism in classrooms (Gries et al., 2021), alongside egalitarian norms that resemble color-evasion and superficial multiculturalism (Civitillo et al., 2017). Together, these factors perpetuate systemic discrimination and fail to provide equal opportunities for support or success for all adolescents.

Consequently, the German school diversity climate disproportionately affects racially minoritized students compared to their peers. They experience additional challenges, such as stereotypes, individual-level racism, lower academic expectations of teachers, and lower well-being in the German school context (Gries et al., 2021; Moffitt et al., 2018; Müller et al., 2019; Wenzing et al., 2023). Moreover, compared to their non-immigrant counterparts, where 43.0% attend a *Gymnasium* (i.e., schools providing access to university), only 16.1% of first-generation and 30.3% of second-generation students of immigrant descent attend a *Gymnasium* (Reiss et al., 2018), highlighting structural racism within the German school context.

This context may also pose challenges for racially minoritized adolescents' psychological needs for autonomy and relatedness as well as cultural identity development. The limitations on opportunities to explore non-German cultural identities in an assimilative school climate, indicative of a lack of autonomy satisfaction, may impede their ability to freely navigate and express their diverse cultural backgrounds. Simultaneously, assimilationist school climates and experiences of exclusion as well as racism may lower feelings of belonging to the German national identity (Fleischmann & Phalet, 2018) and to the school

context (Celeste et al., 2019), reflecting a lack of relatedness satisfaction. Together, this may hinder the development of adolescents' heritage cultural and national identities.

## **1.6 This Dissertation**

The overarching aim of my dissertation is to examine adolescents' basic psychological needs for autonomy and relatedness within the context of German schools. Starting with an exploration of what these needs mean for culturally diverse adolescents, I want to understand how autonomy and relatedness are related to adolescents' cultural identity development, specifically within interventions, and how autonomy and relatedness can be supported in the German school context. Based on the literature reviewed in the first chapter, I have pinpointed several research gaps that have guided the development of four specific research aims.

### ***1.6.1 Research Gaps and Research Aims***

Contemporary lines of research conceptualize autonomy and relatedness as universally important needs, whose balance and understanding may vary across (cultural) contexts. However, there is a limited understanding of how adolescents themselves define autonomy and relatedness, as well as how specific conceptualizations of these constructs may co-occur or even oppose each other. This leads to the first research aim:

Research aim 1: Explore what autonomy and relatedness mean to culturally diverse adolescents (i.e., definitions and importance), while focusing on the co-occurrence of specific conceptualizations these needs (i.e., distinct vs. conflicting vs. compatible), and investigating possible cultural variations in culturally diverse adolescents.

Previous theoretical and empirical studies, mostly around SDT, have examined the importance of need satisfaction as an energizing mechanism for adolescents' and emerging adults' vocational and global identity development. So far, there is research missing on how experiencing behaviors as in accordance with one's own values and wishes (i.e., autonomy)



and high-quality bonds with others (i.e., relatedness) are related to the cultural identity development of adolescents. This gives rise to the second research aim:

Research aim 2: Investigate how autonomy and relatedness satisfaction are related to the development of different aspects of cultural identity (i.e., heritage cultural and national identity), as well as different cultural identity development processes (i.e., exploration, commitment/resolution, affirmation) in culturally diverse adolescents.

Previous studies have shown that the Identity Project intervention can enhance ERI and heritage cultural identity development in the school context. However, as effects vary, it is important to explore factors that influence the efficacy of the intervention, particularly the contextual variables surrounding its implementation. So far, little is known about the role autonomy and relatedness satisfaction in the school context play in facilitating school-based interventions aimed at promoting ERI and heritage cultural identity development. This brings me to the third research aim:

Research aim 3: Examine whether autonomy satisfaction (i.e., academic intrinsic motivation, perceived teacher support of autonomy) and relatedness satisfaction (i.e., peer belonging, perceived teacher support of relatedness) of culturally diverse adolescents in the school context will enhance the efficacy of the Identity Project intervention on heritage cultural identity development.

As a main socializing agent in adolescents' lives, teachers play an important role in supporting adolescents' needs for autonomy and relatedness, and thus adolescents' identity development. Research has shown that when teachers' functioning is affected, they are less able to support students' needs for autonomy and relatedness. However, not much research has focused on how teachers' experiences in culturally diverse classrooms, specifically the concern about appearing racist, can affect their ability to support students' needs for

autonomy and relatedness via cultural diversity related stress and self-efficacy. This leads me to research aim four:

Research aim 4: Study relations between teachers' concern about appearing racist and their self-perceived ability to support culturally diverse students' autonomy and relatedness, via cultural diversity related stress and self-efficacy.

### ***1.6.2 Study Overview and Connection to Research Aims***

To address my research aims, I conceived four empirical studies using four datasets collected with adolescents and teachers in Germany. An overview of the conceptual model can be seen in Figure 1. Given that the empirical chapters are crafted as stand-alone papers, readers may notice variations in the terminology used across them. However, all terminology is explained within each respective paper, ensuring clarity. Despite the variation in terminology, the foundational concepts are consistently applied across all studies, ensuring a coherent understanding of the research findings.

In the first empirical study (Chapter 2), I used interview data of  $N = 16$  9<sup>th</sup> grade adolescents, that was collected together with my (former) colleagues, Julia Wenzing, Dr. Lina Alhaddad, and Dr. Nadya Gharaei in Saxony-Anhalt. In this study I used reflexive thematic analysis to investigate the role of autonomy and relatedness in the lives of culturally diverse adolescents. I examined potential differences in the importance, meaning, and negotiation of autonomy and relatedness across adolescents of non-immigrant descent, second-generation adolescents of immigrant descent and first-generation immigrant adolescents with experiences of flight (research aim 1).

In the second study (Chapter 3), I used essay and survey data from the first wave of a self-affirmation intervention study (i.e., cross-sectional data) conducted with  $N = 364$  7<sup>th</sup> grade students, that was collected by Prof. Linda Juang, one of the supervisors of this thesis, and her team in Berlin. First, I used thematic analysis to explore the meaning and co-occurrence of different aspects of autonomy and relatedness among adolescents identifying as

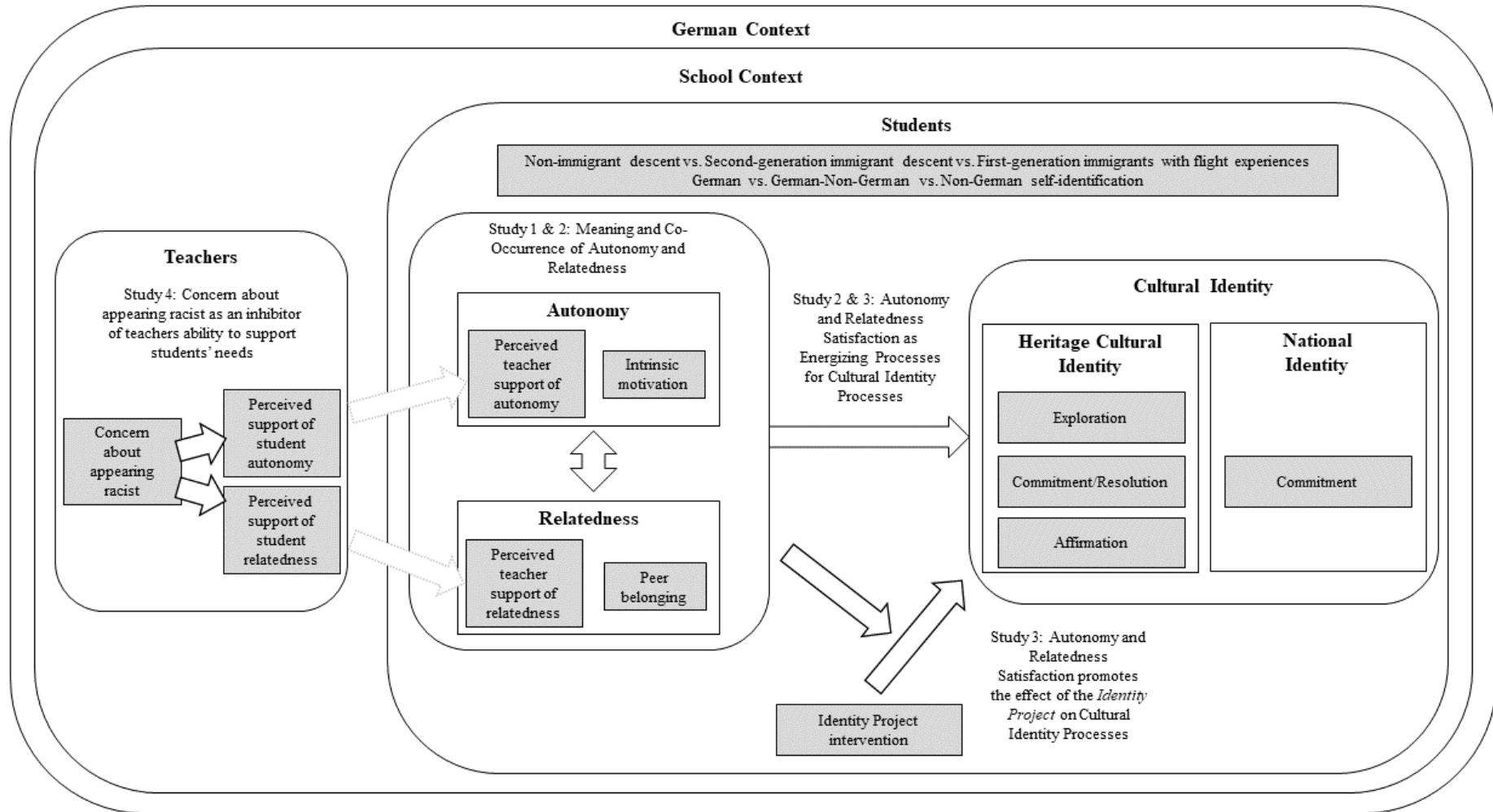
“German-only”, “German-and-non-German”, or “non-German”, as well as potential differences across the groups (research aim 1). Then, I investigated how autonomy and relatedness satisfaction is related to the development of adolescents’ cultural identity. Using cluster analyses, I grouped adolescents based on their descriptions of autonomy and relatedness and subsequently through regression analysis studied the relationship between autonomy and relatedness clusters and adolescents’ heritage cultural and national identity commitment (research aim 2).

The third study uses longitudinal survey data from  $N = 198$  7<sup>th</sup> grade students from 19 classrooms in Saxony-Anhalt and Berlin, that I collected together with the other members of the German Identity Project teams of Prof. Maja Schachner and Prof. Linda Juang, both supervisors of this thesis (Chapter 4). I examined whether autonomy satisfaction (i.e., higher academic intrinsic motivation, perceived teacher support of autonomy) and relatedness satisfaction (i.e., higher peer belonging, perceived teacher support of relatedness) in the school context was related to adolescents’ trajectories of heritage cultural identity exploration, commitment/resolution and affirmation (research aim 2). Next, I explored whether autonomy and relatedness satisfaction of adolescents in the school context enhanced the efficacy of the Identity Project intervention on heritage cultural identity development (research aim 3).

The last study uses cross-sectional survey data of  $N = 584$  teachers in Germany, that I collected online together with my (former) colleagues Priscilla Krachum Ott, Dr. Nadya Gharaei and Dr. Sören Umlauf (Chapter 5). Given the importance of teachers for adolescents’ needs for autonomy and relatedness in the school context, I studied how teachers’ experiences in culturally diverse classrooms, specifically the concern about appearing racist, can affect their ability to support students’ needs for autonomy and relatedness via cultural diversity related stress and self-efficacy (research aim 4).

**Figure 1**

*Conceptual model and study overview*



*Note.* Grey arrows indicate theorized, but not tested associations.

**2. Study 1: Caught between autonomy, relatedness, and an uncertain future:****Exploring what is important to adolescents**

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### **Abstract**

Adolescence is an important period of development, as adolescents explore who they are and want to be, while at the same time negotiating autonomy and relatedness within their social and cultural contexts. In this study, we examine the roles autonomy and relatedness play in the lives of  $N = 16$  culturally diverse adolescents. Semi-structured interviews with adolescents of non-immigrant descent ( $n = 5$ ), of second-generation immigrant descent ( $n = 5$ ), and first-generation immigrants with experiences of flight ( $n = 6$ ) were analyzed using reflexive thematic analysis. Four themes were identified: 1) Family and friends are most important in life, 2) Autonomy is a developmental privilege you can earn, 3) Too much autonomy is bad for you – humans need rules, and 4) I am not in control over my own future, school is. The findings highlight relatedness as most important for adolescents from all backgrounds. The importance and negotiation of autonomy varied across the groups of adolescents, however all adolescents accepted the necessity of rules for personal and societal well-being. Findings further highlight the importance of dismantling classist and assimilationist structures embedded in the German school system to enhance the autonomy, well-being and success of adolescents with diverse backgrounds and experiences.

## 2.1 Introduction

Adolescence represents an important developmental stage, marked by social, cognitive and physical changes. Adolescents become more self-reliant, are cultivating stronger relationships outside of the family, are granted more rights and responsibilities, and are facing the complex task of identity development (Erikson, 1968; Steinberg, 2023). As development occurs in context (Erikson, 1968; Eccles & Roeser, 2011; Ryan & Deci, 2017), these changes are closely intertwined with two basic psychological needs: autonomy and relatedness. Autonomy is generally understood as a sense of volitional agency, i.e., acting in accordance to one's own values and wishes, while relatedness is defined as feeling connected to, and establishing high quality bonds with, others (Ryan & Deci, 2017).

Much research has focused on the importance of autonomy and relatedness in adolescence. Autonomy and relatedness are highlighted as fundamental human needs by self-determination theory (SDT; Ryan & Deci, 2017), and posited as an essential resource for tackling developmental challenges and experiencing psychosocial well-being (Soenens & Vansteenkiste, 2023). Recognizing and meeting autonomy and relatedness is of particular importance in adolescence, given the many important changes within this developmental stage (Laporte et al., 2021). As such, motivational and developmental psychology have linked autonomy and relatedness in adolescence to intrinsic motivation (Schweder & Raufelder, 2021), academic achievement (Loeb et al., 2020), identity development (Luyckx et al., 2009), self-esteem (Demirtas et al., 2017), and reduced anxiety and depression (Inguglia et al., 2015).

At the same time, extensive (cross-)cultural psychology research has been dedicated to on autonomy and relatedness. These studies have focused on whether autonomy and relatedness differ systematically across diverse societies. Many influential cross-cultural theories have grouped individuals and cultural/national groups by their valuing of either autonomy or relatedness, presenting them as opposite ends of one spectrum (e.g., Hofstede, 2011; Markus & Kitayama, 1991). Other (cross-)cultural research emphasizes that autonomy

and relatedness are important for individual well-being and development across countries and cultures, but that the meaning and balance of autonomy and relatedness can vary across cultures and (cultural) contexts (e.g., Kağıtçıbaşı, 2013; Vignoles et al., 2016).

In contrast, relatively little is known about how adolescents experience autonomy and relatedness within their own lives, while taking into account their cultural backgrounds. Understanding the role of autonomy and relatedness in the lives of all adolescents is crucial, given their significance for well-being and development. However, this becomes particularly important for adolescents of immigrant descent and immigrant adolescents with experiences of flight, who may face additional challenges and disparities in their development (Jugert et al., 2020c). To address this gap, this paper employs semi-structured interviews and reflexive thematic analysis to explore two main objectives: (1) to investigate the role autonomy and relatedness play in the lives of adolescents, and (2) to examine potential cultural variations in culturally diverse adolescents' experiences of autonomy and relatedness.

### ***2.1.1 Autonomy and Relatedness: Delving into Different Cultural Conceptualizations***

Though autonomy and relatedness are universally acknowledged as basic psychological needs, they have often been perceived as conflicting. Historically, autonomy has been equated to separateness, i.e., distancing oneself from others and asserting uniqueness. This perspective stems from an individualistic stance, assuming that connectedness with others diminishes autonomy (Kağıtçıbaşı, 2013). This binary division into autonomy and relatedness has also been reflected in prominent cross-cultural theories, dividing cultural/national groups and individuals into those valuing autonomy (i.e., separateness), versus those valuing relatedness – construing them as opposite ends of the same dimension (e.g., Greenfield, 2013; Hofstede, 2011; Markus & Kitayama, 1991; Schwartz, 2006).

In contrast, other lines of research, including SDT (Ryan & Deci, 2017) and contemporary (cross-)cultural psychology research (e.g., Kağıtçıbaşı, 2013; Tamis-LeMonda



et al., 2008; Vignoles et al., 2016) define autonomy as volitional agency, i.e., having the opportunities to act in line with one's own wishes and values. These frameworks consider autonomy and relatedness as two separate yet compatible psychological needs; they do not place autonomy in opposition to relatedness, but instead emphasize that adolescents develop autonomy within the context of relationships. While acknowledging that the meaning of autonomy and relatedness may differ across (cultural) contexts, these theories maintain that both are universally essential for the well-being and development of individuals.

Yet, this binary framing of autonomy and relatedness (e.g., Hofstede, 2011; Markus & Kitayama, 1991) remains influential, often leading autonomy to be prioritized over relatedness in psychology and the Global North to this day. Autonomy and self-sufficiency are seen as indicators of developmental progress of countries (Greenfield, 2013), depicting the "developed" Global North as valuing autonomy (e.g., individualistic/independent), while the "developing" Global South is depicted as valuing relatedness (e.g., collectivistic/interdependent). Such views have inadvertently led to autonomy, specifically the distancing of adolescents from parents, being generally understood as a key developmental task during adolescence (Kağıtçıbaşı, 2013).

This limited view on autonomy as separateness, therefore placing it in conflict with relatedness, fails to recognize that both autonomy and relatedness hold universal significance for adolescents' development. Cross-sectional as well as longitudinal research has linked autonomy and relatedness to greater well-being, personal achievement and psychological adjustment in various cultural contexts around the world (Vansteenkiste et al., 2020).

Research with culturally diverse adolescents, including adolescents from cultural backgrounds often assumed to value relatedness at the cost of autonomy, suggests that close relatedness with parents fosters healthy autonomy development in adolescents (Fuligni & Tsai, 2015), and that parents and adolescents seek both autonomy and relatedness within their relationships (Kağıtçıbaşı, 2013).

While both autonomy and relatedness are important basic needs for all adolescents regardless of cultural background, there may be differences in their meaning and balance across individuals and cultural groups (Kağıtçıbaşı, 2013; Ryan & Deci, 2017). Adolescents from cultural backgrounds assumed to value relatedness over autonomy may maintain stronger connections to their families and endorse family obligations more strongly (Fuligni & Tsai, 2015). Moreover, research with Belgian adolescents suggests that while autonomy is beneficial for academic achievement among adolescents from cultural backgrounds assumed to value autonomy over relatedness, it is most adaptive for cultural backgrounds assumed to value relatedness over autonomy, when autonomy is combined with relatedness (Coşkan, 2016).

Taken together, prioritizing autonomy over relatedness may hinder the development of adolescents (Ryan & Deci, 2017), as may imposed meanings of autonomy as separateness (Kağıtçıbaşı, 2013). Therefore, transcending a restricted perception of autonomy and relatedness and understanding what these concepts mean to culturally diverse adolescents is essential for promoting their healthy development and overall well-being. Through the inclusion of adolescents from diverse cultural background, we aim to go beyond an individualistic view on autonomy and relatedness and center adolescents' experiences, which may help foster culturally sensitive approaches to adolescent development.

### ***2.1.2 Development of Autonomy and Relatedness in Adolescence***

Autonomy and relatedness undergo significant development during adolescence, a period marked by physical and cognitive changes, the deepening of social bonds outside the familial context, and the acquisition of additional rights and responsibilities. The concept of stage-environment fit suggests that the degree to which the environment supports the evolving needs at each developmental stage is crucial for optimal adolescent development (Eccles et al., 1996). As adolescents transition towards self-reliance, gaining more agency in shaping their identity, and the ability to self-regulate thoughts, emotions, and behaviors, their

autonomy steadily increases (Steinberg, 2023). Despite the rise in autonomy across adolescence, the need for relatedness remains, with adolescents gradually shifting their focus from parents as primary sources of intimacy and social support towards peers and larger social groups (Oldfield et al., 2016; Umaña-Taylor et al., 2014). During normative development, autonomy and relatedness develop in a balanced and mutually reinforcing manner, a process that is significantly enhanced when the environment adequately matches the adolescent's developmental needs (Inguglia et al., 2015). This underscores the importance in fostering an environment that supports the dynamic interplay between growing autonomy and the enduring need for relatedness during adolescence.

Until adolescence, parents are a person's primary source of intimacy and social support (Oldfield et al., 2016). Parents are also a person's first contact with autonomy: parents inhibit their children's autonomy by setting rules and boundaries (e.g., no hitting siblings) but also nurture their children's autonomy by acknowledging their children's perspectives, encouraging them to experiment or allowing them to make choices (Vansteenkiste et al., 2020). While parents tend to agree with their adolescent children that they should become more autonomous in their decision-making, research has shown that parents often lag behind their adolescents in timing and content of adolescent autonomy, prompting adolescents to negotiate for greater autonomy in matters such as technology use, dating, or curfew (Daddis, 2011). This can sometimes lead to heightened conflicts with and temporary declines in the sense of closeness to their parents (Inguglia et al., 2015), particularly when parents are not supportive of their child's autonomy (Oudekerk et al., 2015). However, as adolescents gain more autonomy in their decision-making and life choices, the desire for a connection with parents remains. Adolescents continue to seek out their parents to support and guide them in times of stress even into young adulthood (Oldfield et al., 2016).

In order for adolescents to successfully develop autonomy, parents should allow opportunities for youth to take on more decision making, grant adolescents more

independence in the way they spend their time and in the choices they make, and do this in a supportive manner where emotional closeness is maintained (Seiffge-Krenke and Pakalniskiene 2010). In this way, supportive relationships with parents provide adolescents with a secure base from which to explore their independence and refine their decision-making skills (Oudekerk et al., 2015). If parents conversely exert too much control, this can undermine the development of autonomy and relatedness. A longitudinal study with adolescents found, that parental control at age 13 was associated with decreases in autonomy and relatedness with friends during adolescence, as well as lower autonomy and relatedness with romantic partners in adulthood (Oudekerk et al., 2015).

As adolescents mature and become increasingly autonomous, they turn to peers as their main sources of social support in favor of parents (Oldfield et al., 2016). Adolescents describe being happiest when with their peers, and peers are central to adolescents' development of social skills (Allen & Loeb, 2015). Moreover, adolescents learn about freedom and autonomy by comparing themselves to their peers. For example, when adolescents find out that their friends have more lenient curfews, they may conclude that they should have more autonomy in this domain too (Daddis, 2011). Autonomy and relatedness in friendships are also important for short- and long-term academic success: a longitudinal study found, that autonomy and relatedness in friendships at age 13 predicted academic achievement and attainment at age 29 (Loeb et al., 2020).

Lastly, adolescents spend much of their days at school, where daily activities and interactions with peers and teachers heavily influence their learning and development, including autonomy and relatedness. Schools are important for fulfilling adolescents' needs: schools that prioritize adolescents' autonomy and bolster social connections with peers and teachers are more likely to promote positive educational and psychological well-being outcomes (Eccles & Roeser, 2011). Both autonomy and relatedness in the school context have been linked to higher student engagement and academic success, along with reduced

psychological problems, such as depressive symptoms and emotional distress (Van Ryzin et al., 2009).

In sum, both autonomy and relatedness are fundamental to the optimal development of adolescents, and the environment's ability to meet the evolving needs of adolescents at this stage of development plays a crucial role in maximizing the benefits of autonomy and relatedness. Nonetheless, research shows that cultural values and norms shape which experiences of autonomy and relatedness are optimal for adolescent well-being (Kağıtçıbaşı, 2013). This highlights the importance of a nuanced and culturally sensitive approach in fostering adolescents' development of autonomy and relatedness.

### ***2.1.3 The Current Study***

Adolescence is an important developmental period, in which individuals are negotiating autonomy and relatedness with their surroundings. Despite extensive research highlighting the significance of autonomy and relatedness during adolescence and the variations of these concepts across cultures and (cultural) contexts, there is still a gap in understanding how autonomy and relatedness are experienced by culturally diverse adolescents themselves. This is particularly vital given the additional challenges and disparities faced by adolescents of immigrant descent and immigrant adolescents with experiences of flight within Germany.

Applying reflexive thematic analysis to semi-structured interviews with adolescents, this study aims to (1) explore the role autonomy and relatedness play within the lives of adolescents. Additionally, (2) this study investigates potential cultural variations in adolescents' experiences of autonomy and relatedness by including culturally diverse adolescents of non-immigrant descent<sup>12</sup>, second-generation immigrant descent<sup>13</sup> and first-generation immigrants with experiences of flight<sup>14</sup>. Qualitative data can capture nuanced

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<sup>12</sup> Adolescents reported that they themselves and both of their parents were born in Germany.

<sup>13</sup> Adolescents reported being born in Germany, with at least parent born outside of Germany.

<sup>14</sup> Adolescents reported having fled their country of origin and coming to Germany.

narratives, enriching the understanding of autonomy and relatedness with lived experiences from different cultural contexts.

## **2.2 Method**

### ***2.2.1 Participants***

Adolescents were recruited as part of a project on belonging and identity in German schools in the school year 2021/2022. After receiving approval by the State Education Office of Saxony Anhalt and the ethics committee of the University of Halle, schools in Halle-Neustadt were contacted to participate in a study on students' belonging and identity in schools. This region of Halle (Saale) was targeted to ensure a culturally diverse sample of adolescents (proportion of inhabitants in 2021 without a German passport: 24,94, Stadt Halle (Saale), 2021). The schools targeted within this study are however not only characterized by a student body with high cultural diversity, but also lower economic resources. While the German national average of children and youth living under the poverty line lies around 14,4% (Funcke & Menne, 2023), this is the case for up to 72,9% of children in Halle-Neustadt (Sonntag, 2020). Within the German school system, educational opportunities and achievements are strongly influenced by the parental economic and cultural background (OECD, 2018). Consequently, the adolescents in this study attend schools that culminate after the 10th grade. Such schools do not grant direct access to universities, effectively limiting opportunities for many financially lucrative and socially desirable career paths.

With approval from the headmasters, the study was presented to 9<sup>th</sup> grade students in three schools in Halle-Neustadt, and consent forms for parents and adolescents were distributed. Ninth graders were targeted, as due to cognitive changes and deepening of social bonds outside of the familial context middle adolescence is an important period for the development of autonomy and relatedness (Steinberg, 2023). Interested adolescents contacted the main investigators via email. The study included  $N = 16$  adolescents (31.25% female) from two schools, aged 14 to 17 years ( $M_{age} = 15.44$ ,  $SD_{age} = 0.81$ ). The sample consists of  $n$

= 6 first-generation immigrant adolescents with experiences of flight (37.5%),  $n = 5$  second-generation adolescents of immigrant descent (31.25%), and  $n = 5$  adolescents of non-immigrant descent (31.25%). The adolescents were of various cultural backgrounds. First-generation immigrant adolescents with experiences of flight included individuals identifying as Afghan ( $n = 2$ ), Syrian ( $n = 1$ ), Arabic-Syrian-Muslim ( $n = 1$ ) and Muslim ( $n = 1$ ). Second-generation adolescents of immigrant descent identified as German ( $n = 2$ ), Nigerian ( $n = 1$ ) and German-Polish-French ( $n = 1$ ). Adolescents of non-immigrant descent identified as German ( $n = 2$ ), Saxony-Anhalt ( $n = 1$ ) and German-American ( $n = 1$ ). In each group, one student did not provide their self-identification, totaling three students across all groups with missing cultural self-identifications ( $n = 3$ ). An overview of the participants can be found in Table 1.

### ***2.2.2 Procedure***

Interviews were conducted in quiet rooms provided by the schools, either after school or during free periods, between September 2021 and July 2022. Four female members of the research team conducted the interviews. Of these, three were of immigrant descent (one passing as non-immigrant descent) and one member was of non-immigrant descent. As interview subjects are more willing to share intimate details with a researcher whom they believe can relate to their experiences (Savage, 2016), interviewers were matched to the immigrant and/or cultural background of interviewees as much as possible with limited prior information on adolescents before the interview.

All adolescents were interviewed individually and in German. Written informed consent of parents and adolescents was given prior to the interview. Before the start of the interview, adolescents were informed of the interview procedure, asked for their consent to audio record the interview, as well as informed about their rights (e.g., data protection, being able to skip any question they did not want to answer and the possibility to stop the interview at any point in time).

**Table 1***Overview of adolescents*

Name	Gender	Age	Country of Birth	Parents' Country of Origin	Experience(s) of flight	Cultural/religious self-identification [I am...]	Chose card family and/or friends?	Chose card being free and independent?	Themes reflected in interview
Max	Male	14	Germany	M & F: Germany	No	NA [Halle described as home]	Family & friends	No	1
Susanne	Female	16	Germany	M & F: Germany	No	German	Family & friends	No	1,2,3
Lisa	Female	17	Germany	M & F: Germany	No	Sachsen-Anhalt	No	Yes	1,2
Anna	Female	15	Germany	M & F: Germany	No	German	Family & friends	Yes	1,2,4
Robert	Male	15	Germany	M & F: Germany	No	German-American	Family	No	1,2,3,4
Zara	Female	16	Germany	M & F: Nigeria	No	Nigerian	Family & friends	No	1,2,4
Tobias	Male	16	Germany	M: Thailand F: Germany	No	German	Family & friends	Yes	1,2,3
Julius	Male	15	Germany	M: Germany-France F: Germany-Poland	No	German-Polish-French	Family & friends	No	1,2
Andrej	Male	14	Germany	M: Germany F: Nigeria	No	NA [Germany described as home]	Family & friends	No	1,3
Nikolas	Male	15	Germany	M: Germany F: Africa	No	German	Family & friends	No	1,4
Anas	Male	16	Syria	M & F: Syria	Yes	Arabic, Syrien, Muslim	Family & friends	No	1,2,3,4
Djamal	Male	16	Syria	M & F: Syria	Yes	Syrien	Family & friends	No	1,4
Faris	Male	16	Syria	M & F: Syria	Yes	NA [Syria described as home]	Family & friends	No	1,3,4
Wasim	Male	15	Afghanistan	M & F: Afghanistan	Yes	Afghan	Family & friends	No	1,2,3
Asiyah	Female	15	Iran	M: Iran F: Afghanistan	Yes	Afghan	Family & friends	No	1,4
Hakim	Male	16	Syria	M & F: Syria	Yes	Muslim [Syria described as home]	Family	No	1,3,4

*Notes.* Names of adolescents ( $N = 16$ ) were changed while retaining the cultural origin of the name. M = mother, F = father. The themes numbers refer to 1) Family and friends are most important in life, 2) Autonomy is a developmental privilege you can earn, 3) Too much autonomy is bad for you – humans need rules, and 4) I am not in control over my own future, school is.



The interviews were semi-structured (see Appendix A for the interview guide), lasting between 15 and 54 minutes ( $M = 34.70$ ,  $SD = 10.10$ ). The interviews were initiated and concluded with a self-affirmation exercise (Cohen et al., 2006; Steele, 1988). Adolescents were presented with twelve cards depicting words and asked to choose the three words that are most important to them. Having adolescents describe why something is important to them is a straightforward and effective method for affirming their sense of self. Experimental studies have shown that self-affirmations strengthen self-esteem and can therefore help students, particularly vulnerable students who experience discrimination, deal with stress and can lead to improved academic performance and health (Cohen et al., 2006). Furthermore, providing the affirmation exercise at the beginning of an interview can potentially reduce adolescents' resistance or hesitation during the interview and offers an immediate opportunity for the interviewer to express empathy with the adolescent (e.g., 'I see that you said family is an important value for you. '; Ehret et al., 2015, p. 95).

The words presented on the cards were based on previous self-affirmation studies (e.g., Cohen et al., 2006). These were slightly adapted to the German context and the investigators' research interests (for details, see Table A1). The final list of words presented to adolescents included (1) family, (2) friends, (3) home, (4) school, (5) Germany, (6) religion, (7) being free and independent, (8) belonging to a group, (9) equality, (10) health, (11) being athletic, and (12) being musically/artistically talented.

The cards guided the interviews. After adolescents chose the three cards most important to them, interviewers explored the personal importance of the chosen cards for each adolescent. Subsequently, some of the remaining cards were discussed in no particular order, exploring why these were not chosen by the adolescents. This approach provided interviewers with the opportunity to delve into other cards with the adolescents and understand their significance. At the end of the interview, the self-affirmation exercise was repeated. Adolescents were presented with all twelve cards and asked whether the three most important

cards had changed, providing insight into any evolving reflections. Furthermore, repeating the self-affirmation exercise aimed to leave adolescents feeling self-affirmed after the interview. Finally, adolescents were thanked and given 10 EUR for their participation, along with a contact card containing emergency numbers and resources such as helplines for adolescents.

### **2.2.3 Analysis**

Interviews were audio recorded and transcribed verbatim, preserving pauses and laughter, and anonymized by student assistants. Pseudonyms, keeping in line with the cultural origin of the adolescents' real names, were assigned to interviewees. Data were analyzed in MAXQDA Analytics Pro 2020 (VERBI Software, 2019) using reflexive thematic analysis (Braun & Clarke, 2022). The emphasis of this approach is on researchers being subjective, context-aware, and reflexive.

A structured six-phase process (familiarization, coding, theme generation, theme development and review, theme refinement, analytical report) guided the analysis (Braun & Clarke, 2022). After familiarizing themselves with the interviews, the first author solely coded the data, following common and good practice in reflexive thematic analysis (Braun & Clarke, 2022). The coding units were sentences, and latent codes were used to capture more implicit meanings of the adolescents' statements. Only data related to the research questions (i.e., adolescents' experiences of autonomy and relatedness) were coded. Codes were developed inductively by the first author, while being informed by their theoretical knowledge and position in society. Analysis involved repeated readings of the transcribed data and recursive coding of the data, where codes were returned to and revised. Data were then analyzed for potential patterns within and across adolescents' accounts. Recurrent themes were generated from grouping of codes based on similarity and further reviewed in their exclusivity and prevalence across the dataset, as well as their value in giving an overall account of the data (Braun & Clarke, 2022).

The analysis identified four themes related to our research questions, i.e., (1) how adolescents experience autonomy and relatedness in their lives, and (2) whether there were any potential cultural variations in adolescents' experiences of autonomy and relatedness. These themes were discussed amongst all authors and interrogated from authors' theoretical knowledge and related existing theories (e.g., SDT, Ryan & Deci, 2017), ultimately leading to the production of this analytical report. An overview of the final themes and associated codes can be found in Table A2.

#### ***2.2.4 Positionality***

The backgrounds and positionality of members of the research team are an important part of the research process, as they inform the lens through which the study is conceptualized and data are interpreted. The research team involved in this study comprised diverse researchers with distinct cultural backgrounds and varying levels of professional training and experience in qualitative research methods. The intentional inclusion of scholars from different backgrounds is crucial, particularly when working with a diverse sample of adolescents. It promotes a broader range of perspectives, enriches discussions on researcher positionality, and informs the conceptual, methodological, and analytical processes.

The lead author, a doctoral researcher, identifies as a white German bisexual cis-woman and third culture child. She has cultivated expertise on autonomy-relatedness research within culturally diverse school contexts in Germany. The second author, a professor with expertise in educational, developmental and cross-cultural psychology, comes from a low SES background and identifies as a white German heterosexual woman. The third author is a post-doctoral researcher of immigrant descent and identifies as a social psychologist and European-born (visible) minority scholar. The fourth author identifies as a Taiwanese American professor with an academic background in cultural and developmental psychology and educational research from the U.S. and Germany. The fifth author, a doctoral researcher and psychotherapist in training, identifies as a white German heterosexual woman, and

primarily focuses on research related to acculturative challenges and the mental health of immigrant and refugee adolescents.

Despite their educational training placing a greater emphasis on quantitative methodologies, all authors have actively sought opportunities to engage with and develop proficiency in qualitative research methods. This proactive approach stems from an acknowledgment of the significance of qualitative methods in enhancing the comprehension of psychological phenomena. The first and fifth authors jointly conceived the study and managed participant recruitment. The first author also coded the data. Interviews were conducted by the first, third and fifth author. The second, third and fourth authors played supervisory roles, guiding the conceptualization, analysis, interpretation and write-up process.

## **2.3 Results and Discussion**

The idea that relatedness, as characterized through close relationships, is most important in adolescents' lives (theme 1) was apparent across all adolescents. In comparison, adolescents had a more nuanced relationship with autonomy. While freedom and independence are appreciated and autonomy was characterized as an important developmental step in adolescence (theme 2), complimented by reports of a lack of autonomy (agency) over their scholarly future being distressing (theme 4), adolescents shared the notion that, be it at home, at school or in larger society, there must be a balance between autonomy and rules to allow for individual and societal well-being (theme 3). These four themes are discussed in detail below.

### ***2.3.1 Theme 1: Family and friends are most important in life***

Theme 1 revolves around the profound significance of close relationships, specifically family and friends, in the lives of adolescents participating in our study. This is evidenced by Tobias (German<sup>15</sup>, of German-Thai descent): "Family and friends are the most important

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<sup>15</sup> Cultural self-identification, immigrant descent and/or experiences of flight of adolescents are listed, as far as provided by participant. A full overview of participant information can be found in Table 1.

things in life.” This narrative emerged regardless of adolescents’ cultural background, aligning with extensive research that underscores the fundamental human need for relatedness (Ryan & Deci, 2017).

Both family and friends were found to fulfill numerous roles in the lives of adolescents (Steinberg, 2023). These roles ranged from providing crucial support (“[Friends] are there when you need them”, Andrej, of German-Nigerian descent), to eliciting positive feelings (“At home with my family or with my friends. That’s where I feel most comfortable.”, Asiyah, Afghan, fled from Afghanistan). Additionally, they were seen as a safeguard against loneliness and potential depression (“If you don’t have parents and friends, so you’re completely alone, then you might fall into a depression.”, Nikolas, German, of German-African descent), and a source of belonging (“Those are the people I belong to”, Anas, Arabic-Syrian-Muslim, fled from Syria) and freedom (“[When I am with my friends] I just feel free from things like school or family.”, Susanne, German, of German descent). The prevailing sentiment was that true happiness and fulfillment hinge on the presence of family and friends, underscoring the necessity of relatedness and a fear in adolescents of being alone (Corsano et al., 2019).

Although both family and friends hold tremendous importance, subtle distinctions emerged in the roles and attributes assigned to each. Family, for instance, was often associated with the concept of “home”, a place that could shift depending on the geographical location of family members. This notion was complemented by a recurring belief that family members should be together, echoing research detailing children’s and adolescents’ longing for family reunification, whether separated by divorce or by flight (Bragg & Wong, 2016; Dowling & Barnes, 2020):

**Susanne (German, of German descent):** “Because in the past I always felt a bit lonely, because my mom lived in [Town in Germany]. But since she also missed me

because I moved to Halle with my dad and she also wanted to have a fresh start, she also moved here and then everything became whole again.”

**Djamal (Syrian, fled from Syria):** “Germany didn’t allow my brother and sister to go to Germany. Because-, so my sister and brother had to stay in Turkey. So, I wanted a whole family that is together.”

In contrast, friendships were defined by shared interests (“We have the same sense of humor. We like the same things.”, Nikolas, German, German-African descent), and friends were highlighted as the primary reason adolescents enjoyed school (“[I feel good at school] because my friends are here.”, Wasim, Afghan, fled from Afghanistan), providing a unique support system distinct from the family circle. This underscores the idea that during adolescence friends gain importance (Oldfield et al., 2016), and individuals often turn to friends rather than family for certain topics (“And if I can’t tell my parents or my siblings, then I can tell my friends and they give me advice on what I should or shouldn’t do.”, Zara, Nigerian, of Nigerian descent).

To summarize, Theme 1 underscores the pivotal role of relatedness, specifically relationships to friends and family, in the lives of adolescents. Family and friends are perceived as indispensable sources of support, belonging, and happiness. This perception holds true across different cultural backgrounds, underlining the assumptions of theories such as SDT (Ryan & Deci, 2017) and literature from cross-cultural psychology (e.g., Kağıtçıbaşı, 2005; Tamis-LeMonda et al., 2008; Vignoles et al., 2016), that relatedness is a basic psychological need, whose importance for individual well-being and development remains universal. This is underlined by the following quotes by Wasim (Afghan, fled from Afghanistan), “Everything, family is everything, isn’t it?” and Zara (Nigerian, of Nigerian descent), “I couldn’t live without [friends].”

### ***2.3.2 Theme 2: Autonomy is a developmental privilege that you can earn***

Theme 2 evolves around adolescents' descriptions of autonomy as a valued privilege, that you can earn through maturation and good behavior, as highlighted by Anna (German, of German descent): "My parents trust me, so I can do a lot independently."

This is in line with contemporary literature on autonomy (Kağıtçıbaşı, 2013; Ryan & Deci, 2017), adolescents predominantly conceptualize autonomy as volitional agency ("That you can decide for yourself and you can be you and make free decisions.", Julius, German-Polish-French, of German-French-Polish descent) rather than separation from others, such as parents. In certain instances, aligning with SDT (Ryan & Deci, 2017) adolescents linked autonomy with intrinsic motivation, emphasizing feelings of freedom resulting from enjoying activities ("I feel very free [when riding a bike], because you have nothing you have to listen to.", Robert, German-American, of German descent; "For example, when I read in the Koran, it calms me down afterwards. I feel free somehow.", Wasim, Afghan, fled from Afghanistan).

Autonomy is perceived as generally positive by adolescents regardless of their cultural background ("When I am free, then I feel really happy. Then I'm a different level of happy.", Susanne, German, of German descent) with the absence of autonomy deemed undesirable ("Because I don't want to be controlled by anyone. I just want to do what I feel like doing.", Tobias, German, of German-Thai descent). Autonomy is often framed in relation to someone: In their home life, adolescents frequently frame autonomy as the process of becoming independent from parents ("[My parents] always give us the freedom to express our opinion and they give us freedom, so for example important things to decide, like what do I want to study later for example.", Faris, fled from Syria). In school teachers are described as the main agents in relation to autonomy ("It depends on the teacher. In some subjects we can sometimes decide for ourselves what we want to do and so on and in others it's just: do it, no discussion.", Tobias, German, of German-Thai descent).

Moreover, autonomy is viewed as an essential developmental milestone. It is seen as something that individuals must cultivate as they progress through life, growing more

important with age. This corresponds to developmental research showing that autonomy undergoes significant development during adolescence, driven by physical, cognitive, and social changes (Steinberg, 2023). It also corresponds with developmental literature (e.g., Erikson, 1968), where autonomy is identified as a key developmental task:

**Lisa (Saxony-Anhalt, of German descent):** “Because freedom and independence are important from a certain age, so that you can find your way in life later. [...] For example, even now the children who go out alone with friends, even in elementary school, sometimes fall down and hurt themselves, are better than the children who are held back by their parents.”

As a developmental task, autonomy is also viewed as something that can be earned through increasing age and through good behavior, both at home (“[I have more freedom than my sister] because I also behave better and am better in school. I try harder and have more privileges. I am also older than her.”, Anna, German, of German descent) and in school (“I think it’s good that I’m doing well at school because I get good grades and I am viewed as the class nerd. It makes it easier for me with the teachers.”, Anna, German, of German descent). This perspective reflects the underlying assumption of meritocracy prevalent in German society—the more deserving you are, the more autonomy you are granted.

However, while autonomy is viewed as desirable across all adolescents, emphasizing autonomy as a basic human need (Ryan & Deci, 2017), the individualistic assumption prevalent in the Global North—that independence from parents is indicative of healthy development (Kağıtçıbaşı, 2013) — is explicitly expressed only by adolescents of German descent. This assumption implies that without autonomy defined as independence, children may face challenges later in life. Such urgency is not as apparent in interviews with adolescents from cultural backgrounds assumed to value relatedness over autonomy, for example Syria. As evidenced by Anas, some adolescents believe that autonomy is not as crucial at their current age but rather gains importance in adulthood:



**Anas (Arabic-Syrian-Muslim, fled from Syria):** “Whether I am free or not and whether I am independent is not so important for me, at this age. Maybe I’ll think about something like that later, when I’m an adult who has his own life and so on.”

Culture and (cultural) contexts of adolescents may also play a role in the negotiation of autonomy (Coşkan et al., 2016; Kağıtçıbaşı, 2005). For example, only adolescents of German descent described the ability to gain more autonomy from parents by challenging them:

**Robert (German-American, of German descent):** “Yes, because on school days we also have the rules that we turn everything off at 10 pm. And then on weekends when you have friends to play with, I think that’s really stupid. And that’s why I fought against it and then we said that if we do all the tasks that are due during the week, we’ll have Saturday and Sunday off. Then we can play from 10 a.m. to 8 p.m.. Just as long as we want.”

In contrast, Zara (Nigerian, of Nigerian descent) does not see challenging parental rules as a viable option to gain more autonomy: “At first I’m very angry and then I think to myself, there’s no point in arguing with [my parents] now, because it doesn’t lead anywhere, and then I give in.”

These insights shed light on adolescents’ beliefs about the purpose of autonomy. It grants them the freedom to act in line with their interests and wants, eliciting positive emotions. It is further regarded as a privilege that grows with age and can be earned through good behavior, both with parents and teachers. However, the interviews also underscore that the importance and negotiation of autonomy may differ across cultures and cultural contexts (Coşkan et al., 2016; Kağıtçıbaşı, 2005). This highlights the importance of not overemphasizing autonomy, and especially separation from parents, as a developmental goal when working with culturally diverse adolescents (Fuligni & Tsai, 2015).

### ***2.3.3 Theme 3: Too much autonomy is bad for you – humans need rules***

Theme 3 delves into the significance of maintaining a delicate equilibrium between autonomy and rules in the lives of adolescents, as evidenced by Robert (German-American, of German descent): “But I also don’t think, that I should be able to do everything I want to do. It’s like at home. There are rules you have to follow.” While adolescents value autonomy (see Theme 2), they concurrently stress the necessity of rules across various domains: within their homes, at school, and in larger society. Striking this balance is essential, because according to adolescents, excessive autonomy can lead to adverse outcomes. Adolescents do not view unlimited freedom as their ultimate goal. Instead, they prioritize the well-being of their families and friends over unrestricted freedom, as highlighted by Wasim (Afghan, fled from Afghanistan): “So, I mean family or friends and so, they are, that is much more important [than being free and independent].”

Regardless of their cultural backgrounds, adolescents acknowledge and accept the existence of limitations to their autonomy. They perceive these boundaries as a necessity to ensure harmony, security, and overall well-being. The interplay between autonomy and rules extends into various spheres of adolescents’ lives. At home, parental boundaries protect individuals from adverse outcomes:

**Anas (Arabic-Syrian-Muslim, fled from Syria):** “You can also do bad things like taking drugs or something, if you are free the whole-, so if you are really free and if you are, if your parents don’t ask me what I’m doing there and then do bad things. That’s why it’s not always so good to be free.”

In school, these boundaries ensure an atmosphere in which students can learn and teachers can teach without disturbances:

**Robert (German-American, of German descent):** “You have rules you have to follow. You can’t try to get up in class and go home. You just have to say, come on, I’ll do it, even if it’s boring sometimes. [...] I think the rules are actually great,

because if you stick to them, class is not disturbed as often and then the teachers also have an easy time.”

And in larger society, rules and laws organize the day to day, and allow the German government to grant and protect individual freedom (e.g., of religion or sexuality):

**Faris (fled from Syria):** “[In Syria] I made a lot of problems with my little brother and when we came here to Germany, we couldn’t do that anymore because we were disturbing our neighbors. [...] That Germany is better because you have more freedom here. [...] Okay with freedom I mean that for example things like for example [...] homosexuality, to speak other languages. [...] and when I came here to Germany, then I found more freedom. [...] I can do more here in Germany. I have more opportunities.”

These quotes illustrate, that adolescents seem to accept the rules imposed on them by their parents, teachers or society. Ultimate freedom does not seem to be the primary desire of adolescents; instead, they seem to view rules as something positive or, at the very least, necessary. Rules are perceived as helpful in organizing their everyday lives and protecting individuals from engaging in activities that may be detrimental to themselves (e.g., taking drugs) or harmful to others (e.g., disturbing peers or neighbors).

These rules may in part also reflect Germany’s assimilative policies on immigration, emphasizing the expectation for “foreigners” to adapt to German rules and norms (Jahn, 2012). As schools function as microcosms of society, they are contexts in which students are exposed to and taught the same norms and values prevalent in larger society (Fuller, 2015). Consequently, it is not surprising that the broader German assimilative climate is reinforced in schools, where teachers emphasize and instill in students who immigrated to Germany from Syria or Afghanistan the importance of adhering to German rules as an integral part of integration (“Because Germany gives rules for us that we all live together here. That’s what they told us at school. We also try to live together at school with these rules. And we will

manage, have managed to do that.” Hakim, Muslim, fled from Syria). In adolescents of German descent, these assimilationist expectations are mirrored in their attitudes towards others, as evidenced by this quote of Robert talking about his peers in school:

**Robert (German-American, of German descent):** “What defines a German is acting like one. [...] And that you behave yourself. Simply because when you’re in a foreign country, you have to stick to [the rules].”

These quotes underscore a distinct expectation: The adherence to “German rules” is framed as a prerequisite for acceptance and integration, implicitly valuing certain cultural norms and practices over others. It essentially places the responsibility for integration on the shoulders of those perceived as “non-German”, without acknowledging the need for a more inclusive approach that values cultural exchange and mutual adaptation. These “rules” of integration often reflect broader power relations, potentially marginalizing those who do not or cannot conform to these prescribed norms (Schinkel, 2017).

Overall, this theme highlights that ensuring a delicate balance between autonomy and rules is important for adolescents, fostering their autonomy while maintaining necessary boundaries for their well-being and societal integration (e.g., Steinberg, 2023). This balancing act aligns with literature emphasizing that autonomy should not be viewed as complete freedom but as the capacity to make choices within a framework of responsibilities and norms (Ryan & Deci, 2017). However, it is crucial to acknowledge that assimilationist norms in schools can inadvertently exacerbate educational disparities between adolescents of non-immigrant descent and adolescents of second-generation immigrant descent as well as first-generation immigrants with experiences of flight, through decreased school belonging (Celeste et al., 2019).

#### ***2.3.4 Theme 4: I am not in control over my own future, school is***

Theme 4 delves into adolescents diminished sense of autonomy and a lack of agency over their future due to their experiences in the German school system, as evidenced by the

following quote by Anas (Arabic-Syrian-Muslim, fled from Syria): “Because I’m not doing so well in school, I don’t really see my future.” School holds not only great importance for adolescents’ future, but is, for many adolescents, synonymous with securing a prosperous future:

**Zara (Nigerian, of Nigerian descent):** “School means a lot to me because it, I need school in the future. I need education in the future. If I don’t have a good degree or do well in school now, I won’t be as successful later.”

The highly selective German educational system provides an important background to understanding adolescents’ challenges within the German school system. These adolescents attend schools that culminate after the 10th grade, which do not grant direct access to universities, and thus, certain highly valued career paths. There exists an alternative path to acquire the high school diploma required for university admission (Abitur), which involves an additional three years of schooling at a *Gymnasium*, but this possibility is contingent upon students’ grade point average. While many adolescents express their desire to attend a *Gymnasium*, they are uncertain about their ability to make this transition (“So, I think my grades are good [...], but the thing is, I’m not sure yet if I can make it.”, Faris, fled from Syria). This uncertainty is partly rooted in the lack of support provided to students for the transition from secondary school to *Gymnasium*. Students of immigrant descent and first-generation immigrant adolescents with experiences of flight report their teachers discouraging them from pursuing a *Gymnasium*, suggesting that their current schooling does not prepare them adequately for this transition:

**Djamal (Syrian, fled from Syria):** “But sometimes when I tell [teachers] that I want to go to the *Gymnasium*, they say, “No, don’t go.” Because-, our school is not as good as *Gymnasium*, so to speak. Because-, you learn less here than you learn at a *Gymnasium*. It’s a different level, you can say.”

Many adolescents describe feelings of being overwhelmed when contemplating their future (“When we talk about jobs or the future, then [I feel] mostly overwhelmed, because I just can’t have that much of a say myself, because I don’t really have a picture of what my future should look like.”, Anna, German, of German descent). However, a pronounced narrative of a lack of agency in deciding the trajectory of their lives and an uncertainty about their future prospects emerged among second-generation adolescents of immigrant descent and first-generation immigrant adolescents with experiences of flight. For example, Djamal (Syrian, fled from Syria), describes: “I don’t know what’s going to happen with high school after tenth grade. [...] Sure, I study at home, I try hard. But you always have this feeling that you’re not going anywhere.”

The interviews further shed light on the inherent inequalities within the German school system. In general, students are placed into educational tracks after the 5th grade (around age 10). However, this placement is strongly dependent on parental economic and cultural background, therefore families with lower economic status and with experiences or a history of migration are overrepresented in the lower educational track (Reiss et al., 2018). As evidenced by the interviews, switching tracks after the 10th grade is difficult, and adolescents receive insufficient guidance and support for this transition, perpetuating a two-tiered educational landscape (OECD, 2018).

Moreover, adolescents who fled to Germany from Syria or Afghanistan reported additional challenges than adolescents born in Germany. First-generation immigrant adolescents with experiences of flight arrive in a new country, lose all that is familiar to them, are confronted with new languages, values, and cultures, and are subjected to potential impacts to their mental health (Alhaddad et al., 2021). In their interviews these adolescents describe that they feel a responsibility towards ensuring their families future, and view education as a way to achieve this (“But I feel like I have to do this. [...] Not for me, for my future, for my family.”, Djamal, Syrian, fled from Syria)

Overall, this theme illuminates adolescents' lack of agency over their future due to their experiences in the German school system. These are in part due to the highly segregating German educational system, in which students with low economic resources, and especially students with experiences of or a family history of immigration face additional challenges (Gries et al., 2021). It highlights the need for more permeable educational tracks and comprehensive support structures to empower adolescents with a sense of agency over their future, as a lack of fulfillment of the need for autonomy has been linked to poor performance, reduced motivation, negative emotions and decreased well-being (Ryan & Deci, 2017).

## **2.4 General Discussion**

As adolescence is an important developmental period in which individuals are negotiating autonomy and relatedness with their surroundings, our focus was on understanding experiences of autonomy and relatedness in the lives of culturally diverse adolescents. Using semi-structured interviews and reflexive thematic analysis, four themes emerged: 1) family and friends are most important in life, 2) autonomy is a developmental privilege you can earn, 3) too much autonomy is bad for you – humans need rules, and 4) I am not in control over my own future, school is.

Taken together, these themes reinforce the universal importance of relatedness, emphasizing that close relationships with family and friends are pivotal for adolescents' well-being and sense of self (Ryan & Deci, 2017). They further give insight into the nuanced role of autonomy in adolescents' lives. While all adolescents expressed a desire for freedom, independence, and the ability to make their own decisions, this desire is not as strong as the importance they place on relatedness, and they accept rules as a necessity for maintaining individual and societal well-being. Slight differences emerged in the importance and negotiation of autonomy across different cultural backgrounds (Coşkan et al., 2016; Kağıtçıbaşı, 2005).

Results also indicate that conditions in German schools may hinder adolescents' autonomy through two mechanisms. Firstly, as a microsystem of German society assimilationist norms impose rules on students on how to behave in a "German" way, prioritizing conformity over cultural diversity. Consequently, due to decreased school belonging, this could widen the educational achievement and opportunity gap between adolescents of non-immigrant descent and adolescents of immigrant descent or immigrant adolescents with experiences of flight (Celeste et al., 2019). Secondly, the highly segregating German school system may disproportionately limit the agency of students with lower socioeconomic status, of second-generation immigrant descent, and first-generation immigrants with experiences of flight, particularly concerning their future (Teltemann & Schunck, 2016).

Taken together, the accounts of adolescents provide valuable insights into the universal significance of autonomy and relatedness during adolescence, while also emphasizing the critical need to consider how socio-economic status and cultural background shape these experiences. These narratives not only echo the foundational premise that adolescence is a crucial developmental period marked by the negotiation of autonomy and relatedness but also extend our understanding by highlighting the complex interplay of these needs with broader societal factors. In particular, they bring to light the ways in which structural inequalities and experiences of flight add layers of complexity to adolescents' experiences of autonomy and relatedness. This underscores the importance of a nuanced approach in research and interventions, one that not only acknowledges but actively addresses the additional challenges and disparities faced by culturally diverse adolescents, especially second-generation adolescents of immigrant descent and immigrant adolescents with experiences of flight in Germany.



### ***2.4.1 Strengths, Limitations and Implications for Future Research***

This study exhibits several notable strengths. One of the key strengths of our study lies in its commitment to authentically represent the experiences of culturally diverse adolescents in relation to autonomy and relatedness. Semi-structured interviews allow adolescents from various cultural backgrounds, both assumed to value autonomy or relatedness, and including adolescents of non-immigrant descent, of second-generation immigrant descent and first-generation with flight experiences, to express their thoughts and feelings beyond quantitative measures. This diversity enriches our understanding of autonomy and relatedness during adolescence and contributes to a more accurate representation of adolescents' experiences, ensuring that their voices remain at the forefront of the discussion. Additionally, it fosters a more comprehensive understanding of autonomy and relatedness, as historically, mainstream research in psychology has acted from an individualistic stance and prioritized a limited definition of autonomy over relatedness (Kağıtçıbaşı, 2013).

Furthermore, our use of reflexive thematic analysis in this study facilitates rich data interpretation, allowing for the discovery of latent themes and a nuanced understanding of adolescents' experiences. Emphasizing the importance of considering the broader context, including cultural, social, and environmental factors, this approach also requires reflection on the researchers' positions during data interpretation (Braun & Clarke, 2022). The research team incorporates diverse identities, with members at the intersection of multiple marginalized identities (e.g., cultural background, (familial) immigration experiences, gender, sexuality).

However, it is important to critically reflect on the predominantly Global Northern, educated and quantitative perspective of psychology in general and of the researchers in particular, that shape the study's lens, interview questions, and data interpretation. Despite acknowledging and reflecting on their privileges, considering the socio-cultural and economic dimensions of the adolescents and schools involved, the researchers' positionality and power

dynamics with the adolescents must be considered when interpreting the results. Concretely, the position of the researchers could influence which themes are emphasized or overlooked, how participants' responses are understood, and which narratives are given precedence, thereby embedding the analysis with the researchers' own assumptions and perspectives. Like all data analysis, this process is not neutral but is inherently shaped by the lenses through which researchers view the data, underscoring the importance of reflexivity in acknowledging these influences to strive for an interpretation that, as much as possible, captures the authentic voices and experiences of the participants.

It is important to acknowledge that the interviewers and the school environment may have also influenced adolescents' responses. Efforts were made to create a comfortable and confidential space for interviews, such as matching interviewer's cultural and immigrant background with that of the adolescents as much as possible. Additionally, the interviews were conducted within the school setting, a space that the adolescents are familiar with and limiting the effort of the adolescents to participate in the study. However, the presence of an interviewer who does not share the identical cultural background and experiences as the adolescent themselves and the physical school setting may have contributed to a sense of surveillance or self-censorship. Particularly first-generation immigrant adolescents with experiences of flight might have been cautious about expressing dissenting opinions or sharing sensitive information within the school, especially to researchers who they might feel may not understand them. It is important to note that one interview with a student of immigrant descent was conducted by an interviewer of non-immigrant descent, and none of the interviewers had personal experiences of flight themselves. In the interviews, adolescents agreed and expressed valuing the "German" rules and norms in schools and in society at large. However, within the assimilative context of school, it is difficult to ascertain whether adolescents truly do not mind these assimilative expectations, are expressing what they

believe are socially desirable answers, or perceive that assimilation simply is what has to be done in order to be accepted in German society.

The exploration of culturally diverse adolescents' autonomy and relatedness in the school context holds significant implications for the field of education. It highlights the importance of both autonomy and relatedness for all adolescents, cautioning against treating separation from parents as the primary developmental goal. Such an approach may have potential negative consequences for adolescents from cultural backgrounds assumed to value relatedness over autonomy, and hinder their ability to develop belonging or an identity to a social group (Fuligni & Tsai, 2015). Instead, a nuanced and culturally sensitive approach to understanding and supporting adolescent development of autonomy and relatedness is essential (Inguglia et al., 2015; Kağıtçıbaşı, 2013). This can be achieved by utilizing culturally responsive teaching practices, which have been linked to positive outcomes for students, such as reduced achievement gaps or a more positive school climate for students (Aronson & Laughter, 2016).

Lastly, this study underscores the importance of examining adolescents' experiences from a more comprehensive and intersectional perspective, in order to enhance our understanding of how structural inequalities intersect to create unique challenges for second-generation adolescents of immigrant descent and first-generation immigrant adolescents with experiences of flight. It is important to acknowledge that while cultural variations play a significant role, they are not the sole factors contributing to the varied experiences of adolescents in this study. The potential influence of ethnic or racial discrimination and the profound impact of flight experiences, which may involve trauma, should also be considered in future studies (see study by Wenzing et al., 2024). Nonetheless, the findings highlight the need for continued efforts within schools to dismantle classist and racist systems, ensuring equal opportunities in academic and professional education for all adolescents. One potential approach is the adoption of critically conscious school policies that reflect on systems and

structures of oppression, and aim at changing these conditions (Schwarzenthal et al., 2022). Critically conscious school policies have been associated with reductions in the academic achievement gap (Heberle et al., 2020). Changing the classist and racist school structures, may also help empower adolescents with a sense of agency over their future, thus further enhancing their well-being (Ryan & Deci, 2017).

## **2.5 Conclusion**

In conclusion, our study shines a spotlight on adolescents' experiences of autonomy and relatedness. Relatedness, especially connections with family and friends, outweighs adolescents' desire for autonomy, accepting the necessity of rules for personal and societal well-being. Nonetheless, autonomy is considered important by all adolescents, with cultural backgrounds playing a role in their importance and negotiation. Moreover, the findings underline the assimilationist and segregating nature of the German school system, potentially limiting adolescents' autonomy over their future. Recognizing the importance of both autonomy and relatedness for all adolescents and creating environments that support adolescents in experiencing both autonomy and relatedness is important for adolescent development. Simultaneously, dismantling classist and assimilationist structures inherent to the German school system that undermine adolescents' agency in shaping their future, is crucial to promote the well-being and success of adolescents with diverse backgrounds and experiences.

## Appendix A: Caught between autonomy, relatedness & an uncertain future

### Interview guide

#### Introduction (3 min.)

- What exactly are we doing here and why
- Audio recordings and pseudonymization
- Rules of conduct
  - It would be nice if you said something on every topic, but if you feel uncomfortable you don't have to answer
  - We can interrupt or stop the interview at any time if you feel uncomfortable or find questions too stressful
  - Everything that is said in the interview remains between us

#### Warm-up (3 min.)

- 12 cards with words: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Being free and independent, Belonging to a group, Home, Germany, Equality, Health

The first thing I would do is give you these 12 cards. Take your time to read them all carefully. Have you finished? Then please choose the three cards that are most important to you.

#### Main part (45 min.)

##### General

- Address the chosen cards
  - Why did you choose this card?
  - Can you describe a situation in which this is important to you/where you felt this way...
  - Go deeper/ask why/why/how...
  - Build a bridge to follow-up topics
- At the end: address cards not chosen
  - Why didn't you choose this card?
  - Do not go into all of them, address 2-3 relevant topics depending on the course of the interview and time (preferably topics that do not fit as follow-up topics or that have not yet been addressed at all)
  - It is best to link them to the topics discussed

##### Interview topics

##### Belonging:

- Can be linked to: Family, friends, religion, school, belonging to a group, being athletic, being musical/artistic, home, Germany, equality
- With whom do you feel a sense of belonging/with whom not
- Addressing cultural & religious affiliation
- Belonging at school
- Reconciling belonging & independence

Vignette: Sarah/Rafael (15): „ My family is very important to me and I enjoy spending a lot of time with my parents and siblings. At the same time, I don't want to be restricted by my family. I discuss a lot with my parents because I want to have more freedom and be independent. But I'm also aware that it's not worth arguing or fighting about everything. After a lot of discussions, I've managed to stay out late in the evenings, but I know that they will never accept me having a boyfriend/girlfriend. It's not even worth arguing about."

##### Independence:

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Being free and independent, Belonging to a group
- Importance & meaning
- Situation in which you feel independent/would have liked to have more independence
  - Independence from whom or what?
- Independence at school: helping to shape/co-decide
  - Reconciling belonging & independence

##### Religion:

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Being free and independent, Belonging to a group, Home, Germany, Equality, Health
- Importance & meaning for one's own life/identity/religious identity
- Exclusion due to religion
- Role of religion in experienced exclusion/buffer factor?

#### Identity:

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Being free and independent, Belonging to a group, Home, Germany, Equality, Health
- Global, cultural, religious & national identity
- Exploration: do you know X well, X actively explored?
- Commitment: belonging, importance, meaning
- Resolution: What role do different aspects play in your life? Do you find it easy to describe this to other people/put it into words?

#### Exclusion:

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Belonging to a group, Home, Germany, Equality, Health
- Situations where exclusion is experienced and why
- School context (classmates, teachers)
- Mental health
- Dealing with exclusion (family, friends, teachers, religion: What helps? What doesn't help?)

#### Mental health:

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Being free and independent, Belonging to a group, Home, Germany, Equality, Health
- Consequences of exclusion
- Importance of family, friends, teachers & religion for mental health

#### Critical consciousness (awareness of privilege & exclusion):

- Can be linked to: Family, Friends, Religion, School, Being athletic, Being musically/artistically talented, Belonging to a group, Home, Germany, Equality, Health
- If we look at our lives as a story, each of us has our own unique story based on personal experiences.
- Do certain people have more advantages and/or disadvantages in life
- Concrete situations
- Feelings
- Line placement (advantages/disadvantages): Imagine a line. At one end are the young people who have the most advantages in Germany. At the other end are the young people in Germany who experience the most disadvantages. Where would you stand on this line?
- Self-experienced privileges/exclusion & privileges/exclusion of others

#### Debriefing (3 min.)

Almost done! Last but not least, I would like to repeat the question from the beginning. Here are the 12 cards from the beginning again, many of which we have already talked about. If you were allowed to choose 3 cards again, would you choose the same cards, or has something changed? [If change, why?]

Now we're really done. I would like to thank you very much for participating so well and for saying what you think. Do you have any questions? Then you'll get your 10 euro voucher now.

You will also receive this card with contacts from us. You can contact these people if you feel unwell or sad after the topics in this interview and you want to talk to someone about it, you can call this number.

**Table A1***Overview of the adaption of the self-affirmation values for the current study*

Values presented by Cohen and colleagues (2006)	Values presented in our study	Changes made
1. Athletic ability	1. Being athletic	Slight rewording
2. Independence	2. Being free and independent	Slight rewording
3. Religious values	3. Religion	Slight rewording
4. Being smart or getting good grades	4. School	'Being smart or getting good grades' was changed to school, to reflect not only performance but also an important social context for adolescents
5. Politics	5. Equality	'Politics' was changed to 'Equality', as deemed more relatable for the study's population (9 <sup>th</sup> graders)
6. Being good at art	6. Being musically/artistically talented	'Being good at art' and 'music' were combined to one value reflecting musical and artistic talent
7. Music		
8. Membership in a social group (such as your community, racial group, or school club)	7. Belonging to a group 8. Germany	'Membership in a social group' was slightly reworded. In addition, 'Germany' was added to represent belonging to the national group
9. Relationships with friends or family	9. Friends 10. Family 11. Home	'Relationships with friends or family' was split up into 'family' and 'friends', in order to access the unique significance of each relationship category
	12. Health	'Health' was added to recognize the profound influence of the Covid-19 pandemic on adolescents

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10. Creativity	'Creativity' was cut to limit the amount of values to the original twelve, and was deemed significantly encompassed in 'Being musically/artistically talented'
11. Sense of humor	'Sense of humor' was cut to limit the amount of values to the original twelve
12. Living in the moment	'Living in the moment was cut to limit the amount of values to the original twelve

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**Table A2***Overview of these and codes with examples*

Theme	Code	Example quote
Family and friends are the most important thing in life	Family should be together	[My mom] also moved here and then everything became whole again.
	Family/friends are more (the most) important	Because family and friends are the most important things in life, in my opinion.
	Family/friends are people you spend a lot of time with	My friends are the ones I share a lot with and I spend a lot of time with them.
	Family/friends make you feel good	I feel most comfortable with my family and my friends.
	Family/friends save you from being alone	If you have no parents and no friends, for example, so you're completely alone, you might get depressed.
	Friends fill roles family cannot	There are also topics that you don't talk about with your parents. That's what friends are for.
	Friends have the same the interests	[My friends and I] have the same sense of humor. We like the same things.
	Home is where family is	Home is where you feel comfortable, where you have your family, where you simply feel good.
	Spending time with family/friends makes you feel free	<i>(Prompt: What other feelings do you have when you're with your friends?)</i> I just feel free from things like school or family.
	Talking as an indicator of close relationships	You can also talk to them when something is going on.
	With family/friends you are part of something	These are the people I belong to - my family.
Autonomy is a developmental privilege you can earn	You can rely on family/friends (and they can rely on you)	They're there when you need them.
	Being free grows more important with age	It doesn't really matter to me now. Whether I'm free or not and whether I'm independent isn't that important to me at this age. Maybe I'll think about that later, when I'm an adult and have my own life and stuff.
	Challenging parents for more freedom	If I don't agree with something at home, I tell my father.

Freedom is being on your own/doing something for yourself	I think being free and independent is when you move out and take your first steps. Before that, your parents make sure that you don't fuck up and that you don't do anything else. At some point, you move out and live somewhere else and you have to take care of a lot of things. I think that's being free.
Freedom is making own decision/having own thoughts	That you can decide for yourself and you can be yourself and make free decisions.
Importance of being free	Because you have to be free somewhere. You can't be on the phone to your parents all the time because they're worried. So you have to be free somewhere.
Importance of independence	Because freedom and independence is important from a certain age so that you can find your own path in life later on.
It does not feel good when others decide for you	Because I don't want to be determined by anyone. I just want to do what I want to do.
It is a privilege to have less restrictive parents	My parents have a lot of faith in me, so I can do a lot of things on my own. If I want to go somewhere, I can just let them know and go. There are a lot of people who can't do that. But there are also many who have even more privileges.
Parents are restrictive	Like my parents, because they're also a bit "do this, do that, do this" and sometimes you don't want to do it or want to do it a day later.
Parents give you space	My mother says that as long as the police don't bring me home, I can do what I want.
School is restrictive	[I feel free] At home rather than at school, because the teacher usually tells me what to do next anyway.
The better the grades, the better teachers treat you	At school it's usually chill because I get good grades everywhere.
You can decide certain things in school	In some subjects we can sometimes decide for ourselves what we want to do and in others it's like: you do it, no discussion.
You earn parental privileges	I try harder[at school] and get more privileges [from my parents].
Too much autonomy is bad for you – humans need rules	
Freedom with restrictions	For example, if I went out today, I wouldn't be allowed out tomorrow because I was already out today.
Germany allows everyone to be free	When I came here to Germany, I found more freedom. [...] All people decide what they want here.

	Not following rules leads to negative consequences	Too many people in my class are also sent out because they've done something stupid.
	Other things are more important than being free	So, I mean family or friends and so on, that's much more important [than being free and independent].
	Rules are important/make sense	I actually think the rules are great, because if you stick to them, class gets less disrupted and then the teachers have an easy time.
	There has to be a balance between rules and freedoms	I actually have enough freedom. Sometimes I even think that my parents give me too much freedom.
	You have to follow the rules of the country you are in	What makes you German is that you behave like that here, because when we go to Italy, we behave like the locals.
I am not in control over my own future, school is	I can make it at a <i>Gymnasium</i>	I think my grades are good and I think I can do well at a <i>Gymnasium</i> .
	My teacher does not believe I can make it at <i>Gymnasium</i>	But sometimes when I tell them that I want to go to a <i>Gymnasium</i> school, they say: "No, don't go." Because - our school is not as good as a <i>Gymnasium</i> , so to speak.
	Our school does not adequately prepare us for <i>Gymnasium</i>	We learn things in 9 <sup>th</sup> grade nine that people in <i>Gymnasium</i> learn in 8 <sup>th</sup> grade, for example. And when I go to a <i>Gymnasium</i> , I will encounter a lot of things [...] that I don't know, that they learned in the previous year, for example, and that can be difficult for me.
	School decides your future	So, for me, school is important, that I want to study and do my <i>Abitur</i> , so I also want to do my <i>Abitur</i> for my heart, so that I can at least earn money and then pay my rent or buy food, and so on.
	Unsure what the future looks like	When we talk about careers or the future, I'm usually overwhelmed, because I can't say much myself, because I don't really have a picture of what my future should look like.
	Unsure, if I can make it at a <i>Gymnasium</i>	Although, I don't know whether I'll manage it or not if I go to <i>Gymnasium</i> .

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**3. Study 2: “When I am with my friends I am free, I am supported.” - A mixed methods study on autonomy, relatedness and identity among culturally diverse adolescents in Germany**

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### Abstract

Autonomy and relatedness are important psychological constructs that are related to a critical task of adolescence, identity development. However, a detailed understanding of the different content of autonomy and relatedness is missing, including their co-occurrence, relationship to identity development, and possible cultural variations. A mixed-methods approach using essay and survey data of  $N=364$  7<sup>th</sup> grade students ( $M_{age}=12.34$  years,  $SD_{age}=0.72$ , 50.55% female) was used to investigate the three aims of this study: explore (1) the content of autonomy and relatedness, (2) the co-occurrence of these contents, and (3) how these contents are related to heritage cultural and national identity commitment in German-only ( $n=145$ ), German-hyphenated ( $n=127$ ), and non-German ( $n=92$ ) self-identifying adolescents. Our results highlight autonomy and relatedness as multifaceted and separate psychological needs. Depending on the specific aspect of autonomy and relatedness, they may co-occur, be in conflict or enhance one another. Variations across gender and cultural self-identifications highlight the importance of appreciating cultural variations while also recognizing other sources of variation, such as gender, when examining autonomy and relatedness among adolescents. While no direct relationship between autonomy, relatedness, and identity commitment was found, fostering structured opportunities for engagement with heritage culture and national identity could be vital to promoting adolescent well-being.

### 3.1 Introduction

Autonomy and relatedness are highlighted as important basic needs in many cross-cultural theories. Prominent cross-cultural theories conceptualize autonomy as separateness (i.e., distancing oneself from others) and thus construe autonomy and relatedness (i.e., being connected to others) as conflicting, opposite ends of one dimension (e.g., Hofstede, 2011; Markus & Kitayama, 1991). On the basis of this dimension, they divide individuals and cultural groups into those who value autonomy versus those who value relatedness. In contrast, Self-Determination Theory (SDT; Ryan & Deci, 2017) and more recent (cross-)cultural psychology research (e.g., Kağıtçıbaşı, 2013; Vignoles et al., 2016) define autonomy as volition, i.e., acting in accordance with one's own values and desires. This definition does not put autonomy in opposition to relatedness, rather they are seen as distinct but compatible needs. These theories posit that while the meaning and balance of autonomy and relatedness may differ across cultures and (cultural) contexts, the importance for individual well-being and development are universal.

Nonetheless, the binary conceptualization of autonomy and relatedness (e.g., Hofstede, 2011; Markus & Kitayama, 1991) remains widespread, resulting in a prioritization of autonomy over relatedness in the Global North and in psychology that persists until today. For decades, autonomy and self-sufficiency have been equated with developmental progress and advancement of countries (Greenfield, 2013), with the Global North being characterized as valuing autonomy (e.g., individualistic, independent), while the Global South has been characterized as valuing relatedness (e.g., collectivistic, interdependent). This assumption has also led research to overemphasize the importance of autonomy, specifically separateness, at the cost of relatedness at the personal level. Autonomy, specifically the distancing of children from parents, is seen as an essential developmental goal during adolescence (Kağıtçıbaşı, 2013).

However, this limited understanding of autonomy as separateness, and therefore in conflict with relatedness, overlooks that autonomy and relatedness may mean different things for individuals from different cultural contexts (Kağıtçıbaşı, 2013; Ryan & Deci, 2017). It disregards the nuanced ways in which these constructs coexist within individuals and cultural groups (Coşkan et al., 2016). Imposing narrow definitions of autonomy and relatedness may negatively impact adolescents in their development (Kağıtçıbaşı, 2013), and a lack of autonomy or relatedness may hinder identity development (Ryan & Deci, 2017). Therefore, moving beyond a limited understanding of autonomy and relatedness and understanding how different meanings of autonomy and relatedness relate to identity development in culturally diverse adolescents is crucial for fostering healthy development and well-being in all adolescents.

Consequently, using a mixed methods approach, the current study aims to investigate autonomy and relatedness amongst culturally diverse adolescents. Specifically, the (1) content and (2) co-occurrence of autonomy and relatedness will be explored, as well as (3) how the content of autonomy and relatedness are related to heritage cultural and national identity commitment in adolescents.

### ***3.1.1 Conceptualizations of Autonomy and Relatedness***

Whether autonomy is defined as separateness, i.e., distancing oneself from others (e.g., Hofstede, 2011; Markus & Kitayama, 1991), or as a sense of volitional agency, i.e., having the freedom to act in line with one's values and desires (e.g., Kağıtçıbaşı, 2013; Ryan & Deci, 2017; Vignoles et al., 2016), plays a role for whether autonomy and relatedness can conceptually co-occur. If autonomy is conceptualized as separateness, autonomy scales measure autonomy but also the absence of relatedness, and relatedness scales measure relatedness but also the absence of autonomy, thus not allowing for autonomy and relatedness to coexist (e.g., Kağıtçıbaşı, 2013). When autonomy however is defined as volitional agency, autonomy and relatedness are separate constructs. Having one does not inherently imply the

absence of the other; as two separate dimensions, autonomy can co-occur alongside both high or low relatedness (i.e., separateness).

Research conducted over recent decades with adolescents provides support for the distinctiveness and co-occurrence of autonomy and relatedness (Kağıtçıbaşı, 2017). Studies carried out in Europe support that autonomy and relatedness are separate dimensions (e.g., Beyers et al., 2003; Huiberts et al., 2006), and that autonomy does not imply separateness (Phalet & Schönflug, 2001). Additionally, research involving American and Korean adolescents found a stronger positive relationship between autonomy and relatedness than between autonomy and separateness (Kim et al., 1998). Similarly, Meeus and colleagues (2002) found that among Dutch, Moroccan, and Turkish adolescents, relatedness with parents actually fosters autonomy, and does not oppose it.

Moreover, theories and empirical evidence suggest that autonomy is a universally important for individual well-being and development (Kağıtçıbaşı, 2013; Ryan & Deci, 2017; Vignoles et al., 2016). Even in cultures labeled as collectivistic, autonomy enhances well-being and academic outcomes (e.g., Chirkov & Ryan, 2001; Oga-Baldwin et al., 2017; Yu et al., 2018). Nevertheless, it is important to recognize cultural variances in autonomy and relatedness (Ryan & Deci, 2020), as cultural norms and values play a significant role in shaping adolescents' autonomy and relatedness (Kağıtçıbaşı, 2013). For example, studies have found that adolescents of immigrant descent from multiple backgrounds may have stronger family ties and endorse family obligations more intensely than their peers on non-immigrant descent (Fuligni & Tsai, 2015). Additionally, various studies have indicated that the relative levels and co-occurrence of autonomy and relatedness can vary according to social-cultural and family contexts (Coşkan et al., 2016; Tamis-LeMonda et al., 2008), suggesting that cultural variations in autonomy and relatedness may be context-specific rather than stable.



Overall, these findings emphasize autonomy and relatedness as distinct constructs, which may differ across social-cultural contexts. Moreover, they highlight that the definition of autonomy plays a role in whether autonomy and relatedness can co-occur. However, there has been limited research on how adolescents themselves define autonomy and relatedness beyond volition and separateness, and on how specific aspects of autonomy and relatedness may co-occur or oppose one another. To gain a detailed understanding of the meaning and interplay of autonomy and relatedness, the current study analyzes the content of autonomy and relatedness, drawing from both academic theory and lived experiences of adolescents.

### ***3.1.2 Autonomy, Relatedness and Identity Commitment***

Identity development is a critical developmental task in adolescence, comprising exploration and commitment (Erikson, 1968; Marcia, 1980). SDT (Ryan & Deci, 2017) emphasizes that satisfying the basic psychological needs for autonomy and relatedness is important for developing one's identity. The intensive process of exploring, and evaluating potential identity options (exploration), as well as integrating a chosen identity into the self (commitment) requires considerable effort (Ryan & Deci, 2017). The satisfaction of the basic needs for autonomy and relatedness may act as psychological resources and provide the energy necessary for this task. That these basic psychological needs are satisfied by the environment is especially important during adolescence. This is due to the many important transitions and physical, cognitive and social changes that happen during this developmental stage, such as gaining more rights and responsibilities, becoming more self-reliant, and forming stronger relationships outside of the family (Laporte et al., 2021).

Empirical research supports the assumption that autonomy and relatedness satisfaction may facilitate identity development. A study by Luyckx and colleagues (2017) showed that need satisfaction of the autonomy and relatedness positively predicted commitment processes across life domains (global identity development). When individuals have the opportunity to behave in line with their own values and interests (autonomy), and receive support from their

social circle (relatedness), they are more sure of their chosen identity, thus more likely to commit to it (Soenens & Vansteenkiste, 2023). So, autonomy and relatedness can help individuals make choices that they can commit to in regards to their identity.

As previous studies focused mainly on vocational and global identity development, there is a lack of research examining the relationship between autonomy and relatedness satisfaction and heritage cultural and national identity development of adolescents. Research suggests that autonomy and relatedness satisfaction in one domain may promote identity commitment in a different domain, for example, need-supporting parenting contributes to integrated career exploration and commitment-making (Cordeiro et al., 2018; Katz et al., 2018). Therefore, we assume that autonomy and relatedness satisfaction in the lives of adolescents will also promote commitment to heritage cultural and national identity.

### ***3.1.3 Heritage Cultural and National Identity Commitment***

Heritage cultural or ethnic-racial identity pertains to individuals' thoughts and emotions concerning the heritage cultural or ethnic-racial groups they belong to (Umaña-Taylor et al., 2014). Similarly, national identity encompasses individuals' thoughts and emotions regarding their membership in the country of residence. Depending on individuals' familial background and if they define their heritage group at the national or regional level, their heritage cultural group may be the same as their national group (e.g., German both as heritage and national identity) or they may differ (e.g., Bavarian heritage and German national identity, Turkish heritage and German national identity, ...).

When individuals commit to a certain identity, they gain a sense of understanding regarding the personal significance of that identity aspect and achieve a secure identity characterized by feelings of wholeness (Umaña-Taylor et al., 2014). According to identity development and social identity perspectives (Erikson, 1968; Tajfel & Turner, 1986), committing to one's social groups plays a vital role in preserving a positive self-image, and helps individuals in upholding their self-esteem amid challenges. Further, Berry's (1997) two-

dimensional model of cultural identification posited that optimal psychological and sociocultural well-being is achieved by cultivating high heritage cultural and national identities (i.e., integration; Stogianni et al., 2022). Other studies call this into question (Bierwiazek & Kunst, 2021) and posit that there may not be a universally ‘best’ acculturation strategy. Rather, well-being outcomes of acculturation strategies may be strongly influenced by the national acculturation expectations (Birman & Simon, 2014).

In Germany specifically, adolescents with stronger ties to their heritage identities generally experience improved psychological well-being, as indicated by higher self-esteem, more life satisfaction, and fewer depressive symptoms (Göbel & Preusche, 2019; Juang et al., 2020; Kunyu et al., 2020; Schachner et al., 2018; Schotte et al., 2018). However, the relationship between a strong connection to national identity and socioemotional well-being is less consistent (Schotte et al., 2018). Some studies suggest that adolescents strongly identifying with their national identity exhibit higher school motivation and engagement (Schachner et al., 2016), though findings vary (Spiegler et al., 2018). Research indicates that when national identity is combined with a strong heritage identity during early adolescence, it may positively impact life satisfaction (Juang et al., 2023a) and school outcomes (Preusche & Göbel, 2022; Spiegler et al., 2018). Therefore, it is important to find ways to support adolescents in identity development of both heritage cultural and national identities, and explore whether promoting autonomy and relatedness is a pathway to supporting adolescents in both their heritage cultural and national identity commitment.

The current study focuses on heritage cultural and national identity commitment in three self-identification groups: German-only self-identifying, German-hyphenated self-identifying (i.e., identities including both German and another cultural identity), and non-German self-identifying adolescents. We decided against grouping individuals using labels such as “migration background”, as it is not a chosen but rather attributed category, which many individuals assigned to that label do not identify with (Nesterko & Glaesmer, 2019).

Therefore, adolescents were grouped based on their self-identification, as it allows them to choose their own label, and allows for various separate or integrated heritage cultural and national identities (see Moffitt & Juang, 2019; Vietze et al., 2022). Moreover, these three self-identification groups (German-only, German-hyphenated and non-German) can indicate the degree of enculturation or acculturation to the German context and possibly a different heritage group. Self-identification groups therefore allow us to investigate possible cultural variations in adolescents' understanding of autonomy and relatedness as well as identity commitment.

### ***3.1.4 The current study***

Much research has focused on autonomy and relatedness in different cultures and cultural contexts. However, a comprehensive understanding of what autonomy and relatedness mean beyond volition and separateness is lacking. Questions remain about which aspects of these constructs are compatible and how they relate to heritage cultural and national identity development. Additionally, the extent to which these relationships vary across culturally diverse adolescents is still uncertain. To bridge these gaps, our research is structured around three primary aims. First, we aim to explore the content of autonomy and relatedness (research aim 1). Second, we will investigate the co-occurrence of different autonomy and relatedness contents (research aim 2). Third, we plan to examine the relationship between autonomy and relatedness contents, and heritage cultural and national identity commitment (research aim 3). All these aims will be pursued within the context of culturally diverse adolescents to investigate possible cultural variations.

In order to pursue these research aims, qualitative data is essential to capture early adolescents' descriptions of autonomy and relatedness. Qualitative analyses of adolescents' essays allow for a detailed examination of the content of autonomy and relatedness that early adolescents deem important in their lives, and provide insights into how specific aspects of autonomy and relatedness co-occur (Syed, 2015). This qualitative investigation is

complemented by survey data on heritage cultural and national identity commitment from the same adolescents, employing a mixed methods approach to integrate rich qualitative insights with quantitative analyses.

### **3.2 Method**

#### **3.2.1 Participants**

In total,  $N = 614$  7<sup>th</sup> grade students in 58 classrooms (66% vocational track, 24% combined vocational/academic track, 10% academic track) at 17 secondary schools in Berlin, Germany, filled in the pre-test questionnaire. Of these  $n = 205$  were part of the control group, leaving  $N = 409$  adolescents who were supposed to write an essay about values important to them.  $N = 29$  adolescents were excluded due to missing essays (individuals did not write an essay, rather than being absent). Furthermore,  $n = 8$  were excluded based on non-sensical essays (e.g., “bla bla bla”), and further  $n = 8$  adolescents were excluded as they did not include any cultural self-identification.

Thus, the final sample included  $N = 364$  adolescents ( $M_{\text{age}} = 12.34$ ;  $SD_{\text{age}} = 0.72$ ; 50.55% identifying as female, 49.45% identifying as male, 47.53% culturally-sensitive condition, see 3.2.2 for details).  $N = 145$  adolescents were German-only self-identifiers (39.84%; e.g., “German”),  $n = 127$  adolescents were German-hyphenated self-identifiers (34.89%; e.g., “German-Turkish”, “German-Arabic”), and  $n = 92$  adolescents were non-German self-identifiers (25.27%; e.g., “Turkish”, “Turkish-Kurdish”). The largest groups within the German-hyphenated self-identifiers were German-Turkish ( $n = 31$ ), German-Arabic ( $n = 14$ ), and German-Russian ( $n = 10$ )/German-Polish ( $n = 10$ ). The largest groups within the non-German self-identifiers were Turkish ( $n = 41$ ), Polish ( $n = 12$ ), and Arabic ( $n = 9$ )/Serbian ( $n = 9$ ). Across self-identifications, most identities were national, however one adolescent mentioned subnational identities (“Ordu-German-Dari”), and 40 adolescents mentioned supranational identities (Arabic ( $n = 34$ ), African ( $n = 2$ ), Human ( $n = 1$ ), Latin-American ( $n = 1$ ), European ( $n = 1$ ), Persian-Afghani ( $n = 1$ )). Within the self-identification

groups, 13.10% of German-only self-identifiers, 66.14% of German-hyphenated self-identifiers, and 72.83% of non-German self-identifiers were of immigrant descent, i.e., they themselves or at least one of their parents was born outside of Germany.

### ***3.2.2 Materials and Procedure***

This study uses the first wave data (pre-test) of a larger self-affirmation intervention study to promote school adjustment of adolescents of immigrant descent (for more information on the original study, see Juang et al., 2023c), as well as essay data collected during the first intervention. Ethical approval was obtained from the ethics board of the University of Potsdam, as well as the Berlin Senate. Berlin schools with a high percentage of non-German first language students were targeted for the study; specifically, 7<sup>th</sup> grade classes were recruited in October 2017 for the self-affirmation study, which spanned until June 2019. In exchange for participation, classrooms received compensation (25€ for each class per questionnaire wave) as well as information about the study results of the self-affirmation study. Parental consent was obtained prior to data collection; parental consent letters were distributed in Albanian, Arabic, English, French, German, Polish, Russian, and Turkish.

In Fall 2017 the adolescents filled in a questionnaire including questions on their demographics, heritage cultural and national identity commitment, as well as academic and well-being outcomes. The questionnaire was distributed in German. A month after filling in the questionnaire, adolescents were asked to write a short essay as part of the first self-affirmation intervention, where they, among other topics, wrote about autonomy and relatedness. Details on all measures relevant for this study are reported below.

**Self-identification** of adolescents was based on the following question: “People can think of themselves in various ways, e.g., as German or Turkish or as German-Turkish. How do you think of yourself?” (Leszczensky & Gräbs Santiago, 2015). The response options were slightly adapted from the original measure to reflect the most frequent heritage groups represented in Berlin schools: (1) *German*, (2) *Turkish*, (3) *German-Turkish*, (4) *Russian*, (5)

*German-Russian*, (6) *Polish*, (7) *German-Polish*, (8) *Syrian*, (9) *German-Syrian*, and (10) *something else* (open response). Based on their reply, adolescents were placed in one of three self-identification groups, German-only self-identifiers (e.g., German), German-hyphenated self-identifiers (e.g., German-Turkish, Turkish-German), non-German self-identifiers (e.g., Turkish, Turkish-Lebanese).

**Heritage cultural and national identity commitment** were each measured using six mirrored items (Leszczensky & Gräbs Santiago, 2014). The items on heritage cultural identity commitment refer to the adolescents' familial cultural background (e.g., "I am satisfied to be a part of my family's heritage country",  $\omega = .87$ ), while the national identity commitment items refer to Germany (e.g., "I am satisfied to be a part of Germany",  $\omega = .86$ ). Adolescents responded on a 4-point Likert scale from (1) *totally disagree* to (4) *totally agree*. Adolescents who indicated their familial cultural background to be German, only filled in the national identity commitment scale ( $n = 46$ ).

**Essays.** The essays were part of a structured self-affirmation task based on Sherman and colleagues (2013). To enhance task engagement, the self-affirmation task was presented in the form of a comic (Müller & Lokande, 2017). The self-affirmation task was administered across three conditions: a traditional self-affirmation task ( $n = 212$ ), a culturally-sensitive self-affirmation task ( $n = 197$ ), and a no-affirmation control group ( $n = 205$ ). Aligning with the methodology of Cohen and colleagues (2006) and Müller and Lokhande (2017), all participants were presented with a list of twelve values (e.g., friends and family, having fun, being athletic). In the traditional self-affirmation task, adolescents were instructed to identify and mark the two values most important to them. Subsequently, they wrote an essay about these chosen values. This process was slightly altered in the culturally-sensitive self-affirmation task, where adolescents were given the option to write in either German or their heritage language. This adaptation aimed to convey the acknowledgment and appreciation of their heritage culture(s) and emphasize the value of one's heritage culture as a resource in

academic tasks. In the no-affirmation control group, adolescents were directed to select and write about two values that held *no* importance to them. Adolescents in the no-affirmation control group were excluded from the analysis.

**Covariates.** We controlled for age, gender (female vs. male), the interaction between self-identification and gender, as well as for the intervention condition (traditional vs. culturally-sensitive) in all quantitative analyses. Age is a crucial factor as adolescence marks a significant period of development for autonomy and relatedness, involving physical and cognitive changes, and the navigation of evolving social bonds and responsibilities (Steinberg, 2023). To account for the distinct socialization experiences of women, emphasizing relatedness, and men, emphasizing autonomy, as well as cultural variations therein (Dutra-Thomé et al., 2019), gender as well as the interaction between self-identification and gender were taken into account.

### ***3.2.3 Analytical procedure***

IBM SPSS Statistics for Windows (Version 27.0) was used for data cleaning. Qualitative analyses were conducted in MAXQDA 2020 (VERBI Software, 2019), all other analyses were conducted using R (R Core Team, 2022). The study was pre-registered on the Open Science Framework:

[https://osf.io/swc5p/?view\\_only=3b42a2860ff04b66bc5794ed0567d88a](https://osf.io/swc5p/?view_only=3b42a2860ff04b66bc5794ed0567d88a). Divergences from the pre-registration are found in Appendix B.

**Qualitative analyses.** Qualitative analyses, specifically thematic analysis (Braun & Clarke, 2006), were used to explore the content of autonomy and relatedness early adolescents' write about (RQ1) as well as the co-occurrence of autonomy and relatedness (RQ2). Semantic themes were used, as they help identify the explicit and surface meaning of the data, help get a sense of the important themes and offer a rich description of the entire data set. An initial coding scheme was developed deductively on the basis of a literature review before looking at the data (Table B1). Codes focused on the different definitions of autonomy



and relatedness found in prominent theoretical frameworks, such as SDT (Ryan & Deci, 2017) or cross-cultural theories (e.g., Hofstede, 2011; Markus & Kitayama, 1991).

Additionally, codes were added to capture whether adolescents construe autonomy and relatedness as positive or negative, and who or what they refer to with regards to autonomy and relatedness (e.g., family or school). The coding scheme was adapted during the coding process, based on theory and essay data triangulation. If adolescents' essays could not be adequately captured by the deductive coding scheme, codes were added. Moreover, if there were difficulties in applying codes to the essays, e.g., difficulties to differentiate between two codes, codes were adapted or merged.

The coding units were phrases, i.e., short sequences of words, and each essay was coded by two separate coders. First, coders independently read and coded ten essays. Units were coded under more than one subtheme if deemed appropriate. Discrepancies were discussed and the essays recoded, and the coding scheme adjusted and collapsed when necessary. This was repeated with another ten interviews until the coding scheme was deemed fit to capture the data. As it is seen as the most appropriate index for open-ended data such as essays (Syed & Nelson, 2015), interrater reliability was measured using percentage agreement *PA*. Percentage agreement was calculated for each code across all essays.

Data analysis consisted of cross-case analysis to shed light on the content of autonomy and relatedness for early adolescents who are German-only self-identifiers, German-hyphenated self-identifiers and non-German self-identifiers through identifying common themes. This method focuses on finding generalizable similarities and differences within and across groups, rather than focusing in-depth on the experience of single participants or cases. A descriptive-interpretative approach was used to analyze the data, where the experiences of the participants are first described, and then interpreted by analyzing underlying themes and trying to understand the implicit meaning of the experience (Braun & Clarke, 2006).

**Quantitative Analyses.** Quantitative analyses were used to supplement the qualitative analyses, investigating differences in the content of autonomy and relatedness (RQ1) and the co-occurrence of autonomy and relatedness (RQ2), as well as to study the relation between autonomy, relatedness and national and heritage cultural identity commitment (RQ3) across early adolescents identifying as German-only, German-hyphenated and non-German.

To investigate differences in the content of autonomy and relatedness across the three groups (RQ1), differences in code frequencies across the groups of German-only self-identifiers, German-hyphenated self-identifiers and non-German self-identifiers were investigated using Bayesian regressions (*brms* package; Bürkner, 2017). In order to select significant associations, the credible intervals of regression coefficients were assessed. The 95% credible interval is more intuitively interpretable than the frequentist confidence intervals, and shows that there is a 95% probability that these regression coefficients in the population lie within the corresponding intervals (Kruschke, 2014). If 0 is not contained in the credibility interval it is likely there is an effect.

Next, in order to examine whether German-only self-identifiers, German-hyphenated self-identifiers and non-German self-identifiers differ in the co-occurrence of autonomy and relatedness (RQ2), correlations between autonomy and relatedness codes were examined. Correlations are interpreted based on the Bayes Factor, with significant evidence of being correlated indicated by a Bayes Factor greater than 3.

Lastly, in order to explore whether heritage cultural and national identity commitment were related to the content of autonomy and relatedness (RQ3), we conducted separate cluster analyses for each of the three groups of students: German-only self-identifiers, German-hyphenated self-identifiers, and non-German self-identifiers. Utilizing the *mclust* package (Scrucca et al., 2016), we analyzed the frequencies of codes related to autonomy and relatedness, generated through qualitative research, to cluster participants with similar code profiles (Henry et al., 2015). This methodological approach allows for a mixed-methods

integration, combining qualitative code generation with quantitative clustering techniques. Cluster analyses were performed independently for the autonomy codes and the relatedness codes within each identity group. This separate analysis ensured a focused examination of how heritage cultural and national identity commitment relates to each autonomy and relatedness separately. The determination of the optimal model and number of clusters for each analysis was guided by the highest Bayes Information Criteria. Following the identification of clusters, regression analyses (*brms* package, Bürkner, 2017) were conducted to assess the relationship between heritage cultural and national identity commitment and the identified clusters of autonomy and relatedness, for each group of self-identifiers.

### **3.3 Results**

#### **3.3.1 Preliminary Analysis**

In order to examine possible differences between students included and excluded from analysis, Bayesian regressions were run (*brms* package; Bürkner, 2017). Results indicated that students identifying as non-German were slightly overrepresented in the excluded group (Table B2, B3).

The average length of adolescents' essays was  $M = 54.14$  words ( $SD = 31.28$ ). Which essay topics adolescents chose (e.g., "belonging to a group", "doing what I want") and the relation between chosen essay topic and writing about autonomy/relatedness can be found in Table B4 and B5.

#### **3.3.2 Content of Autonomy and Relatedness**

The final coding scheme for autonomy and relatedness can be found in Table 2. Percentage agreement across all codes was  $M = 89.35$  ( $SD = 9.29$ ), signifying high intercoder reliability. In regards to autonomy, the final coding scheme included eight codes describing the content of autonomy, positive and negative references to autonomy, as well as eight codes describing who adolescents refer to when speaking of autonomy. "Volition" and "personal choice" which were separate codes in the pre-registered coding scheme were combined into

**Table 2***Final coding scheme*

<b>Code</b>	<b>Definition</b>	<b>Example</b>
<b>Autonomy</b>	“The need to experience a sense of volition and psychological freedom in one’s action” (Soenens & Vansteenkiste, 2011, p. 383)	
Freedom	The need to experience a sense of psychological freedom in one’s action (Deci & Ryan, 1985, 2000)	When I run or jump, then I feel free and I feel as though I could never stop.
Independence/ independent self	The ability to live your life without being helped or influenced by other people (Cambridge Dictionary, n.d.-c); the formation of independent self-construals (Markus & Kitayama, 1991), differentiation from others (Vignoles et al., 2000)	Being free and independent is important to me, because I want to be the one to decide over my life, and I don’t want anyone else to decide over my life.
Individualism	Personal happiness highly valued (Hofstede, 2011); highlighting importance of fun, being happy, and self	It is important to me to have fun, because you should always be happy.
Intrinsic motivation	Doing something because it is inherently interesting or enjoyable (Deci & Ryan, 1985, 2000)	I like singing a lot and it is a lot of fun.
Parent-child conflict	Parent-child conflicts over everyday issues are viewed as normative, temporary, and functional. Facilitate the development of autonomy for adolescents of various cultural backgrounds (Fulgini, 1998; Juang et al., 2012; Smetana, 2002; Steinberg & Morris, 2001; Yau & Smetana, 1996)	Because sometimes I don’t want anything to do with my parents, because they always annoy me: „Do this. Do that!!!“
Purpose/Growth	“Purpose is a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self” (Damon et al., 2003, p. 121)	The more you experience something new, the more sense my life makes.
Separation parents	Distancing of children from parents (Kağıtçıbaşı, 2005)	It is important that you aren’t always lead, because when you grow up, you don’t live with your parents anymore.
Volition	The need to experience behavior as willingly enacted (Deci & Ryan, 1985, 2000). Emphasizing being able to choose / to decide what to do	Because when I can’t do what I want, I feel unhappy and caged in.
Positive reference	Positive feelings related to autonomy	It is nice if you experience something new and have fun in your

Negative reference	Negative feelings related to autonomy	life.
Referring to...	Who is being referred to in relation to autonomy	I love being alone and being free but I also hate it at the same time.
Family	Explicit references to family. as well as references to siblings. grandparents and extended family	I don't want to be dependent on my family, but rather want to do everything alone.
Parents	References to one or both parents	I love my parents but being independent does not mean I don't love them.
Friends	References to friends	Everything is more fun with friends and it never gets boring.
(Cultural) group	References to belonging to a specific group, e.g., national, religious, cultural; as well as references to groups such as sport teams etc.	I like doing things attached to my religion, and I do it voluntarily.
Self	References referring to oneself	Like I said, I want to decide for my own.
Place	References to a specific place	Because at home or at school a lot the times (sometimes) I can't do what I want.
Teacher	References to teacher(s)	I don't want some glavonja [means 'man with a big head' and stands for teachers or chefs in higher positions] decides what I am supposed to do.
Others	References explicitly referring to others. other people. etc.	Helping other people is fun.
<b>Relatedness</b>	"The need to feel connected with other people and to be genuinely accepted in interpersonal relations" (Soenens & Vansteenkiste, 2011, p. 383)	
Acceptance	The need to be genuinely accepted in interpersonal relations (Deci & Ryan, 1985, 2000)	My family is important to me, because they love me how I am.
Belonging	The need to feel connected to people close to them (Deci & Ryan, 1985, 2000). Feelings of closeness to other people (Vignoles et al., 2006)	Religion is important to me, because I belong to something.

Cohesiveness	Referring to “solidarity, cohesion, comradeship, team spirit, group atmosphere, unity, ‘oneness,’ ‘we-ness,’ ‘groupness,’ and belongingness” (Hogg, 1992, p. 1)	Cohesion and community belongs to friends and family, and you are never alone.
Collectivism/ Community	Tightly-knit social framework. ingroup plays central role in life. individuals show unquestioning loyalty towards their ingroup and are looked after by all members (Hofstede, 2011); “The sense that one was part of a readily available. mutually supportive network of relationships” (Sarason, 1974, p. 1); the feeling that group members are important to each other and the conviction that the needs of the group members will be addressed through their shared commitment to be together (McMillan & Chavis, 1986)	Family and friends are the most important thing in my life if they say die, I do anything for them. But family and friends are even more important than fun because you always stick together and help each other when you have problems.
Cooperation	Cultural construct that reflects the extent to which people in a society value working together to achieve collective goals (Hofstede, 2001; Markus & Kitayama, 1991)	Together we can do anything, as a team.
Dependence	Needing the support of something or someone in order to continue existing or operating (Cambridge Dictionary, n.d.-a)	Without [family and friends] I could not live.
Harmony	A situation in which people are peaceful and agree with each other (Cambridge Dictionary, n.d.-b; see Markus & Kitayama, 1991)	When I am with my family or friends, I feel warmth, but from the inside.
Interdependent self	Self is made meaningful within a larger social context (Markus & Kitayama, 1991); degree to which individuals merge their self and the group (Ashmore et al., 2004)	My family is very important to me, because they are a part of me.
Obligation. duty. extrinsic motivation	Actions that individuals feel they are required to take by their group (see Greenfield, 2013); doing something because it is expected from you	Helping is important because it is also an obligation.
Rituals	A series of actions or type of behavior regularly and invariably followed by someone	With family you can for example eat dinner together at a table together and tell each other something e.g., what the children experienced at school and the parents could say what they did at work.
Social Identification	Identifying self as member of a particular social group (Ashmore et al., 2004)	I am muslim.
Support	Feel supported by people close to them (Deci & Ryan, 1985, 2000)	They help me and support me and when I feel bad they are there

Positive reference	Positive feelings related to relatedness	for me. You spend time with your family and friends and you laugh and are HAPPY.
Negative reference Referring to..	Negative feelings related to relatedness Who is being referred to in relation to relatedness	I have had some bad experiences with family and friends.
Family	Explicit references to family. as well as references to siblings. grandparents and extended family	The family is always there for me no matter the situation.
Parents	References to one or both parents	I just could not imagine being without parents.
Siblings	References to siblings in general or sister(s) and brother(s) specifically	Most of all I love my sister she is always there when I need her we fight often but that is part of being sisters.
Friends	References to friends	Wenn man sich alleine fühlt sind Freunde für einen da.
(Cultural) group	References to belonging to a specific group. e.g., national. religious. cultural; as well as references to groups such as sport teams etc.	I like belonging to a group because I feel good there and you can have fun.
Self Place	References referring to oneself References to a specific place	I want to trust myself to live by myself without feeling lonely. At home I feel respected how I am and I definitely feel comfortable.
Teachers	References to teacher(s)	Sometimes teachers are strict but only to the bad students.
Humanity	References to the human race	Everyone needs love.
Others	References explicitly referring to "others", "other people", etc.	Helping other people makes me happy.

one code, as adolescents characterized behavior as willingly enacted (volition) when they could decide what to do themselves (personal choice). Furthermore, the code “purpose/growth” was added, as many adolescents emphasized the importance of doing something because it gives them a purpose or helps them grow as a person, and we did not have any pre-established codes which captured this adequately. Lastly, (cultural) group, self, place and others were added as autonomy reference codes, as they were frequently mentioned by adolescents. “Peers” was changed to “friends” in the final coding scheme for both autonomy and relatedness, as adolescents specifically talked about friends and not their peers in general.

In regards to relatedness, the final coding scheme included twelve codes describing the content of relatedness, positive and negative references to relatedness, as well as ten codes describing who adolescents refer to when mentioning relatedness. “Collectivism” and “community” were combined into one code called “Collectivism/community” as they were difficult to separate conceptually when coding the student essays. Both highlight the importance of the ingroup as a central aspect of one’s life, and that members of the ingroup can rely on one another. Additionally, “Obligation, duty” and “extrinsic motivation” were combined to one code, “Obligation, duty, extrinsic motivation”, as obligation and duty were mentioned as prominent examples of extrinsic motivation. Lastly, siblings, (cultural) group, self, place, humanity and others were added as relatedness reference codes, as they were frequently mentioned by adolescents.

The frequencies of the autonomy and relatedness codes by self-identification group can be found in Table B6. For all three groups of self-identifiers, the most frequent aspects of autonomy written about were individualism (e.g., “Having fun is important to me because you should always be happy”, German-hyphenated identifier), intrinsic motivation (e.g., “I like singing very much and it is very, very fun”, German-hyphenated identifier) and purpose/growth (e.g., “The more I experience something new, the more my life makes sense”,



non-German identifier). Adolescents mostly wrote about autonomy in a positive way (coded 78 times, e.g., “It is nice if you experience something new and have fun in your life.”, German-hyphenated identifier), and most often in relation to the individual themselves, i.e., actions and feelings the student experiences by themselves (e.g., “Like I said, I want to decide for my own.”, German-only identifier). Nonetheless, family and friends were also mentioned frequently in regards to autonomy, and adolescents referred to autonomy in a negative way 6 times (“I love being alone and being free but I also hate it at the same time.”, German-hyphenated identifier).

For all three groups of self-identifiers, the most frequent aspects of relatedness written about were collectivism/community (“But I think family and friends are even more important than fun because you always stick together and help each other when you have problems”, German identifier), belonging (“Religion is important to me because it is where I belong”, non-German identifier), and support (“They help me and support me even when I am feeling bad they are always there for me”, non-German identifier). Adolescents mostly wrote about relatedness positively, and in reference to family and friends (e.g., “You spend time with your family and friends and you laugh and are HAPPY.”, German-hyphenated identifier), not larger cultural or social groups. Nonetheless, adolescents referred to relatedness negatively 33 times (e.g., “I have had some bad experiences with family and friends.”, German-hyphenated identifier).

Bayesian regressions were run to investigate whether there were differences in autonomy and relatedness code frequency across self-identifications. The priors for MANOVAs can be found in Table B7. Results indicated only one difference in code frequency across self-identifications: adolescents identifying as non-German mentioned parents significantly more often in regards to relatedness, than German-only self-identifying adolescents (Table B8). However, there were multiple differences in regards to gender, with female adolescents mentioning the autonomy codes freedom, individualism and

purpose/growth, as well as the autonomy sources self and others, more often than male adolescents. In regards to relatedness, female adolescents mentioned the codes acceptance, belonging, collectivism/community, harmony and support, as well as the relatedness sources family, friends and others, more often than male adolescents. Self-identification and gender interacted with code frequency in regards to three codes: female adolescents with German-hyphenated identities talked more positively about autonomy and relatedness than male or German-only self-identifying adolescents, and female adolescents with non-German identities mentioned having certain rituals in their lives more often than male or German-only self-identifying adolescents. Lastly, older adolescents mentioned individualism less often and referred to themselves less often in regards to autonomy than younger adolescents. No effects of intervention condition were found.

### ***3.3.3 Co-occurrence of autonomy and relatedness***

82% of German-only self-identifying adolescents' essays were coded as writing about both autonomy and relatedness (Table B9). Correlations do not show a lot of evidence for relations between autonomy and relatedness codes (Table B10). Of 432 possible correlations, only 26 showed evidence for a positive relation and 1 showed evidence for a negative relation between an autonomy and relatedness code. For example, mentions of independence/independent self were related to more mentions of interdependent self, and more negative mentions of relatedness. This indicates that when adolescents write about being independent, they also tend to mention aspects of reliance on others, but may do so in a way that emphasizes a dissatisfaction with their relationships or connectedness to others. Moreover, mentions of individualism were related to more mentions of acceptance, suggesting that adolescents who express individualistic beliefs or behaviors perceive being more accepted by others.

In German-hyphenated self-identifying adolescents, 79% of essays were coded as writing about both autonomy and relatedness (Table B9). Of 432 possible correlations, only

25 showed evidence for a positive relation and 2 showed evidence for a negative relation between an autonomy and relatedness code (Table B11). For example, mentions of independence/independent self were related to more mentions of acceptance, indicating that when adolescents write about being independent, they also mention being acceptance more. One the other hand, mentions of purpose/growth are related negatively to belonging – suggesting a potential tension between individual self-discovery and social connectedness among adolescents.

In non-German self-identifying adolescents, 78% of essays were coded as writing about both autonomy and relatedness (Table B9). Of 432 possible correlations, only 25 showed evidence for a positive relation and 3 showed evidence for a negative relation between an autonomy and relatedness code (Table B12). For example, mentions of separation to parents were related to more mentions of harmony. This implies that a healthy level of separation from parents (not parent-child conflict), may contribute positively to the overall harmony and warmth experienced within social settings. In contrast, mentions of volition are related negatively to belonging – suggesting a potential conflict between individual agency and belonging among adolescents who self-identify as non-German.

These correlations suggest, that autonomy and relatedness are separate, independent constructs. Yet, specific aspects of autonomy and relatedness reinforce each other, while others create tension. This is also mirrored in the adolescents' essays. When writing about what is most important in their lives, most adolescence wrote about autonomy and relatedness. However, most mentions of autonomy and relatedness were unrelated (e.g., a student first writing about the importance of their family in their lives, followed by a description of their favorite hobby). In some instances though, autonomy and relatedness were explicitly mentioned together. Adolescents from all three self-identification groups described how spending time with people which fulfilled their need for relatedness, also helped them fulfill their need for autonomy, as illustrated by these examples: “When I am with my friends

I am free, I am supported” (German-only identifier), “I am happy and have fun in my life thanks to my family” (German-hyphenated identifier), and “I have fun playing with my friends, and I have more freedom” (non-German identifier).

### ***3.3.4 Autonomy, relatedness and identity commitment***

In a next step, we investigated how autonomy and relatedness content in adolescents’ essays were related to heritage cultural and national identity commitment in the three self-identification groups. Within the German-only self-identifiers, three autonomy clusters emerged (Table B13): (1) adolescents with high mentions of autonomy ( $n = 49$ ), (2) adolescents with low mentions of autonomy ( $n = 77$ ), and (3) adolescents with (almost) no mentions of autonomy ( $n = 19$ ). For relatedness, four clusters emerged (Table B14): (1) adolescents with high mentions of relatedness ( $n = 6$ ), (2) adolescents with low mentions of relatedness ( $n = 100$ ), (3) adolescents who mostly write about relatedness as collectivism/community ( $n = 9$ ), and (4) adolescents with moderate mentions of relatedness ( $n = 30$ ).

Within the German-hyphenated self-identifiers, only one autonomy cluster emerged (Table B15): (1) adolescents with moderate mentions of autonomy ( $n = 127$ ). For relatedness, five clusters emerged (Table B16): (1) adolescents with high mentions of relatedness ( $n = 24$ ), (2) adolescents with very high mentions of relatedness ( $n = 5$ ), (3) adolescents who write about relatedness as collectivism/community and obligation/duty/extrinsic motivation ( $n = 22$ ), (4) adolescents who write about relatedness as belonging to family and friends ( $n = 53$ ), and (5) adolescents with (almost) no mentions of relatedness ( $n = 23$ ).

Within the non-German self-identifiers, five autonomy clusters emerged (Table B17): (1) adolescents with high mentions of autonomy, where autonomy is characterized as happiness ( $n = 8$ ), (2) adolescents with high mentions of autonomy, where autonomy is characterized as deciding for yourself ( $n = 5$ ), (3) adolescents with moderate autonomy, where autonomy is characterized as individualism ( $n = 30$ ), (4) adolescents with moderate mentions

of autonomy, where autonomy is characterized as deciding for yourself ( $n = 5$ ), and (5) adolescents with low mentions of autonomy ( $n = 44$ ). For relatedness, four clusters emerged (Table B18): (1) adolescents with low mentions of relatedness ( $n = 51$ ), (2) adolescents with high mentions of relatedness ( $n = 7$ ), (3) adolescents with moderate mentions of relatedness, with a focus on belonging ( $n = 25$ ), and (4) adolescents with moderate mentions of relatedness, with a focus on self ( $n = 9$ ).

The descriptives of heritage cultural and national identity commitment can be found in Table B19. For all groups, heritage cultural identity commitment ( $M = 3.49$ ,  $SD = 0.61$ ) was higher than national identity commitment ( $M = 2.79$ ,  $SD = 0.69$ ). Priors for the regressions can be found in Table B20, and the regression results can be found in Table B21 and B22. There was only one significant association between an autonomy/relatedness cluster and adolescents' identity commitment. Within the German-only self-identifiers, adolescents in the low autonomy cluster indicated higher levels of heritage cultural identity commitment, than adolescents in the no autonomy cluster ( $\beta = .38$ , 95% CI [.08; .68]). Additionally, also within the German-only self-identifiers, female adolescents indicated lower levels of national identity commitment, than male adolescents ( $\beta = -.25$ , 95% CI [-.46; -.03]). No effects of intervention condition were found.

### 3.4 Discussion

Adopting a mixed-methods approach using both essay and survey data, the current study investigated autonomy and relatedness in early adolescents. Differences and similarities in the content and co-occurrence of autonomy and relatedness were investigated across German-only, German-hyphenated and non-German self-identifying early adolescents. Lastly, given the importance of autonomy and relatedness for identity development, the study further explored how heritage cultural and national identity commitment related to autonomy and relatedness content of adolescents. Our findings highlight that autonomy and relatedness are multifaceted and distinct psychological needs, which are both important to adolescents.

Depending on the specific aspects of autonomy and relatedness, these autonomy and relatedness may co-occur or not. Additionally, content and co-occurrence of autonomy and relatedness vary across both cultural self-identifications and gender. No substantial association between autonomy, relatedness, and identity commitment emerged.

### ***3.4.1 Content of Autonomy and Relatedness***

For all three groups of self-identifiers, the same autonomy and relatedness codes were most frequently mentioned, signifying limited cultural variations in autonomy and relatedness across adolescents. In regards to autonomy, adolescents most frequently wrote about individualism, intrinsic motivation and purpose/growth. Most mentions of individualism were related to being happy and having fun. In countries like Germany, which score higher on individualism, personal happiness, positive feelings, and avoiding negative feelings is highly valued (Bastian et al, 2012), which was reflected in many essays. Based on the essays, it seems as if early adolescents are not (yet) as concerned with independence-related aspects of autonomy, such as making their own decisions, but rather with being happy (individualism) and enjoying activities (intrinsic motivation).

The focus on hedonistic content of autonomy rather than independence-related content may be due to our sample consisting of early adolescents ( $M_{\text{age}} = 12.34$  years). Autonomy steadily increases during adolescence, and during middle adolescence there is an increase in the salience of self-determination rights, involving autonomous control and agency over one's own life. In line with this, *decision-making* autonomy increases gradually across middle childhood and adolescence before rising sharply in late adolescence (Steinberg, 2023). Therefore, the choice of autonomy aspects written about may be a reflection of our sample's age. This is further supported by our findings that older adolescents mentioned individualism less often in regards to autonomy than younger adolescents, suggesting that hedonistic content of autonomy may become less important across adolescence, in favor of decision-making autonomy.

Besides these more hedonistic aspects of autonomy, adolescents also highly value doing things in order to grow as a person or in order to give meaning to life. Identity theories describe adolescence as the developmental period when individuals begin to search and dedicate themselves to identities and beliefs that give them a sense of purpose (Erikson, 1968). While a lack of purpose has been associated with maladaptive behaviors and outcomes such as antisocial behaviors and depression, having a purpose during adolescence has been linked to prosocial behavior, moral commitment, achievement, and high self-esteem (Damon et al., 2019). Therefore, it is both not surprising that adolescents chose to write about purpose in their personal essays, and may reflect healthy development.

In regards to relatedness, all three groups of self-identifiers mentioned collectivism/community, belonging, and support most frequently. The aspects of relatedness reflect belonging as a fundamental, psychological need. People need to maintain feelings of closeness to other people, either through personal relationships or in-groups, in order to experience good psychological health and development (Ryan & Deci, 2017). Our adolescents most often referred to relatedness in relation to family and friends, not larger cultural or social groups, which may again be due to the age of our sample. Over the course of adolescence, youth extend their social networks, also outside of their family and friends, and continue developing various social identities. This includes the development of an ethnic-racial or heritage cultural identity (Umaña-Taylor et al., 2014). As the adolescents in our sample are still in early adolescence, they may only have begun developing cultural (or other social) identities, and experience relatedness primarily with close significant others.

Findings revealed that there was only one noticeable difference in how often certain relatedness content were mentioned across all three self-identifications: German-only self-identifying adolescents tended to mention their parents less frequently in relation to relatedness compared to non-German self-identifying adolescents. This could reflect that in German-only self-identifying adolescents there is a greater expectation to distance oneself

from parents during adolescence than in non-German adolescents (Kağıtçıbaşı, 2013). The lack of other differences supports the assumptions posited in SDT and contemporary (cross-)cultural psychological frameworks that both autonomy and relatedness are universal and compatible needs, across cultural affiliations. It is worth noting that these adolescents all reside in Germany, suggesting a partial shared cultural affiliation, which may contribute to the lack of observed differences. Nonetheless, results highlight the importance of looking beyond heritage culture to discern potential differences in autonomy and relatedness among adolescents.

Noticeably, there were differences in how often contents of autonomy and relatedness were mentioned in regards to age (see above), gender and the interaction between gender and self-identification. These gender differences may reflect differing socialization and expectations of men and women, particularly in regards to social pressure. Women experience more social pressure than men in a variety of situations, such as their appearance (Helfert & Warschburger, 2013), technology use (Venkatesh & Morris, 2000), to quit smoking (Royce et al., 1997), and use of their time (Mattingly & Sayer, 2006). First results suggest, women also experience more social pressure to adhere to individualistic norms, such as feeling positive emotions (Hölscher & Perez Pena, 2019). Therefore, the more frequent mentions of individualism and purpose/growth of female adolescents may reflect that they experience more pressure to live up to individualistic goals such as constant personal happiness or self-development, than male adolescents.

Moreover, female adolescents may be socialized in ways that emphasize dependence, compliance, interpersonal relationships and closeness (Dutra-Thomé et al., 2019), which could be reflected in more frequent mentions of acceptance, belonging, collectivism/community, harmony and support, family and friends in comparison to male adolescents. These restrictive expectations regarding relatedness may lead to resistance in form of a heightened strive for autonomy by female adolescents (Goodkind et al., 2020), mirrored in the



heightened emphasis on freedom in their essays. Lastly, non-German self-identifying female adolescents mentioned having rituals with loved ones more often than male or German-only self-identifying adolescents. Adolescents with non-German identities could be more inclined to value rituals as a way of maintaining a connection to their cultural heritage (Brosius & Polit, 2020), which could be stronger for female non-German self-identifiers, due to the above-mentioned expectations on girls to maintain connections to other people and groups (Dutra-Thomé et al., 2019).

In summary, our study provides a detailed and nuanced description of the different content of autonomy and relatedness, highlighting them as multifaceted constructs. Additionally, our findings suggest that these contents vary less between cultural self-identifications and more between genders. This highlights the significance of looking beyond heritage culture and also considering other sources of variation when examining autonomy and relatedness among adolescents.

### ***3.4.2 Co-occurrence of Autonomy and Relatedness***

Across all three groups of cultural self-identification, when asked to write about what was important to them, the majority of adolescents wrote about both autonomy and relatedness. Contrary to influential theories developed by researchers such as Hofstede (2011) and Markus & Kitayama (1991), a limited number of correlations suggest that autonomy and relatedness are not opposite ends of the same spectrum, but rather independent, separate constructs. However, our findings indicate that the specific aspects of autonomy and relatedness co-occur, or are indeed in opposition. Moreover, in line with research showing that autonomy and relatedness is also influenced by cultural norms and values (Kağıtçıbaşı, 2013), we observed distinct patterns of co-occurrence between autonomy and relatedness across groups of self-identifiers.

For instance, unique patterns emerged in the co-occurrence of autonomy and relatedness among adolescents of different cultural self-identification, when autonomy was

defined as independence or separation from parents. For German-only identifying adolescents, we found that mentions of independence or an independent self were associated with more negative references to relatedness. This finding is more in line with an understanding of autonomy as the opposite of relatedness, a common conceptualization in Global North. This conceptualization does not allow for the co-occurrence of autonomy and relatedness, as autonomy indicates separateness, i.e., not being related (Kağıtçıbaşı, 2013). Conversely, we observed that among German-hyphenated identifying adolescents, mentions of independence or an independent self were linked to more mentions of acceptance, and among non-German identifying adolescents, mentions of separation from parents were associated with more mentions of harmony. These findings suggest that autonomy, even independence and separation from others, is not necessarily the opposite of relatedness among adolescents not identifying as German-only. Rather, they speak for autonomy and relatedness being separate constructs, where autonomy may co-exist with both high and low levels of relatedness within adolescents. This conceptualization is in line with research indicating the distinctiveness of autonomy and relatedness that allows for co-occurrence of autonomy and relatedness (Kağıtçıbaşı, 2017; Ryan & Deci, 2017).

Our qualitative results further contextualize these findings. Most often autonomy and relatedness both mentioned as important, but unrelated to each other, again supporting the conceptualization of separate constructs. However, in some instances autonomy and relatedness were mentioned as reinforcing each other. A number of adolescents from all three self-identification groups described how spending time with people which fulfilled their need for relatedness, also helped them fulfill their need for autonomy. These findings are in line with SDT (Ryan & Deci, 2020) and contemporary (cross-)cultural research (Kağıtçıbaşı, 2017), which posit relatedness promotes the development of healthy autonomy, rather than inhibiting it.

Taken together, these findings reinforce the notion that autonomy and relatedness are multifaceted, separate constructs that may coexist and even reinforce one another depending on the specific aspect and socio-cultural context, rather than being opposite ends of the same spectrum. In line with previous studies (Coşkan, 2016), the findings also acknowledge the importance of appreciating cultural variations specifically in the co-occurrence of autonomy and relatedness.

### ***3.4.3 Autonomy, relatedness and identity commitment***

Based on previous theoretical and empirical research, we expected that adolescents' essays on autonomy and relatedness would be related to their heritage cultural and national identity commitment (Luyckx et al., 2017). Different clusters emerged for the three groups of self-identifiers that reflected differences in how often autonomy or relatedness was mentioned (i.e., low, moderate, high), as well as different emphases on autonomy or relatedness (e.g., autonomy means happiness vs. autonomy means deciding for yourself). Contrary to our expectations however, only one association between an autonomy or relatedness cluster, and heritage cultural or national identity commitment was found. Within the German-only self-identifiers, adolescents in the low autonomy cluster indicated higher levels of heritage cultural identity commitment than adolescents in the no autonomy cluster. While this would be in line with literature showing that more autonomy satisfaction would lead to higher identity commitment (Luyckx et al., 2017), adolescents in the high autonomy cluster did not indicate higher identity commitment than adolescents in the no autonomy cluster, suggesting that more frequent mentions of autonomy are not linearly related to more identity commitment.

Overall, the results suggest that autonomy and relatedness as measured in the current study are not related to heritage cultural or national identity commitment of early adolescents. One reason may be that the adolescents lacked incentives to engage with their heritage cultural and national identity in this study. First results suggest, that only with structured

opportunities to engage with heritage cultural identity, does autonomy and relatedness satisfaction promote identity commitment within early adolescents (Hölscher et al., 2024).

As commitment to both heritage cultural and national groups can serve as an important resource for adolescents, and has been found to foster positive academic and psychological outcomes in Germany (Juang et al., 2023a; Preusche & Göbel, 2022; Spiegler et al., 2018), it is important to find ways to support adolescents in both their heritage cultural and national identity development. While first studies indicate that autonomy and relatedness support can promote heritage cultural identity development (Hölscher et al., 2024), more research is needed to understand under which circumstances this support is effective. Moreover, it is important to investigate whether autonomy and relatedness support, possibly coupled with structured incentives, is also an effective pathway to supporting adolescents in their national identity commitment.

#### ***3.4.4 Strengths, limitations and implications***

Our study underscores the critical importance of both autonomy and relatedness for adolescents, making an important contribution to the existing literature. To the best of our knowledge, it is the first to offer such a detailed and nuanced examination of the diverse content of autonomy and relatedness within adolescents' narratives, revealing them to be multifaceted constructs. By considering various factors that influence autonomy and relatedness, our findings indicate that the content of these constructs shows more variability between genders, while patterns of co-occurrence vary across different groups of self-identifiers, particularly concerning independence.

These results highlight the necessity of supporting both needs within the school context, as they are closely linked to positive outcomes such as psychological growth and well-being (Ryan & Deci, 2020). However, they also underscore the importance of transcending narrow definitions and considering various sources of variation, beyond heritage culture, when studying and supporting autonomy and relatedness among adolescents.

Imposing rigid definitions of autonomy and relatedness may have adverse effects on adolescents' development (Kağıtçıbaşı, 2013), potentially hindering their identity development (Ryan & Deci, 2017). Therefore, it is imperative for educators, researchers, and psychologists to move beyond limited understandings of these constructs and adopt a more inclusive and culturally sensitive approach toward autonomy and relatedness. By doing so, environments can be created that foster healthy development and well-being for all adolescents, ultimately contributing to their overall growth and flourishing.

However, our study has some methodological limitations. Regarding the essays, adolescents were given a list of specific topics to choose from to write about. This limited the topics that adolescents could indicate as important in their lives. Moreover, the essays adolescents wrote were very short. Future studies should use longer, more open essays in order to get a deeper understanding of adolescents' autonomy and relatedness content. Furthermore, using specific prompts and asking about different instances in which autonomy and relatedness were experienced as (non-)compatible, or asking about whether they feel like their needs for autonomy or relatedness are satisfied, may advance our knowledge on how adolescents combine autonomy and relatedness in different contexts, and how satisfaction of autonomy and relatedness is associated with identity development.

Additionally, our study was cross-sectional and included early adolescents. As both the understanding of autonomy and relatedness, as well as identity development processes may change with age and throughout adolescence, future research should employ longitudinal research methods and also include older adolescents in the sample. This may expand our understanding of how (1) the meaning of autonomy and relatedness and (2) identity commitment change across the course of adolescence, and (3) help explain the directionality between autonomy, relatedness and identity development. Studying a broader age range and using longitudinal designs may help understand differences in our results compared to studies using older adolescents and emerging adults (e.g., Luyckx et al., 2017).

A lack of relation between autonomy, relatedness and identity commitment may be due to the presence of small clusters and large standard deviations associated with the regression coefficients, implying potential variability within the clusters. A larger sample size would enhance the statistical power and reliability of the findings. This could help discern more definitive patterns and associations, ensuring a more robust interpretation of the relationship between autonomy, relatedness, and identity commitment. Furthermore, it is possible that the relationship cannot be revealed due to the measurement of autonomy and relatedness used in this study. The analyses focused on the content and frequency of autonomy and relatedness, providing insights into what adolescents find important and how often they mention this aspect of autonomy or relatedness. However, it does not necessarily capture the satisfaction derived from these aspects. It is crucial to acknowledge the distinction between articulating values and experiencing satisfaction, emphasizing the need for more nuanced measures to assess the relationship between autonomy, relatedness, and identity commitment.

Lastly, our study was part of a larger self-affirmation intervention study. However, only the first wave of data was used to limit effects of the self-affirmation intervention on the findings and the intervention condition did not show any influence on our analyses.

### **3.5 Conclusion**

In conclusion, our findings help to gain a deeper understanding of different content of autonomy and relatedness, their co-occurrence, and their relation to cultural identity commitment in adolescents. Our findings highlight autonomy and relatedness are multifaceted and distinct basic psychological needs, which are both important to adolescents. Depending on the specific content of autonomy and relatedness however, autonomy and relatedness may co-occur, oppose or reinforce each other. The content of autonomy and relatedness varies more between genders than between cultural self-identifications, while differences based on cultural self-identifications emerged in their co-occurrence. This variation highlights the

importance of appreciating cultural variations while also recognizing other sources of variation, such as gender, when examining autonomy and relatedness among adolescents. Lastly, although the current study finds no direct relationship between autonomy, relatedness, and heritage cultural or national identity commitment among early adolescents, fostering structured opportunities for engagement with heritage culture and national identity could be vital. Such engagement, alongside nurturing autonomy and relatedness, may play a pivotal role in enhancing adolescent well-being by reinforcing a sense of belonging and identity.

**Appendix B: “When I am with my friends I am free, I am supported.”****Divergences from the pre-registration.**

1. In the initial research design, we planned to use cluster analysis (*mclust* package; Scrucca et al., 2016) to investigate the co-occurrence of autonomy and relatedness codes within the three groups of self-identifiers. However, upon further consideration and analysis, we determined that correlation analysis (*BayesFactor* package; Morey & Rouder, 2023) would be more suited to our research objectives. Correlation analysis allows us to directly observe which codes of autonomy and relatedness are positively or negatively related, providing a clearer picture of the underlying dynamics between these constructs. While cluster analysis is adept at identifying patterns among groups of participants based on their profiles of codes, it does not afford the same level of specificity in delineating the nature of relationships between individual codes. By employing correlation analysis, we are better positioned to answer our research question regarding the co-occurrence of autonomy and relatedness, as it enables a more granular investigation into the exact nature of these relationships. This methodological adjustment enhances the precision and relevance of our findings, contributing to a more nuanced understanding of the constructs under study.
2. The initial plan to use JAGS for regression analyses was revised in favor of the *brms* package (Bürkner, 2017). As *brms* is fully integrated with R, it simplifies data management, model fitting, and result interpretation, thus streamlining the research process.



**Table B1***Initial coding scheme based on a literature review*

Code	Definition
<b>Autonomy</b>	“the need to experience a sense of volition and psychological freedom in one’s action” (Soenens & Vansteenkiste, 2011, p. 383).
Volition	The need to experience behavior as willingly enacted (Deci & Ryan, 1985, 2000)
Freedom	The need to experience a sense of psychological freedom in one’s action (Deci & Ryan, 1985, 2000)
Separation parents	Distancing of children from parents (Kağıtçıbaşı, 2005)
Independence/independent self	The ability to live your life without being helped or influenced by other people (Cambridge Dictionary, n.d.-c); the formation of independent self-construals (Markus & Kitayama, 1991), differentiation from others (Vignoles et al., 2000)
Intrinsic motivation	Doing something because it is inherently interesting or enjoyable (Deci & Ryan, 1985, 2000)
Individualism	Personal happiness highly valued, only expected to take care of themselves and immediate families (Hofstede, 2011)
Personal choice	Emphasizing being able to choose / to decide what to do
Parent-child conflict	Parent-child conflicts over everyday issues are viewed as normative, temporary, and functional. Facilitate the development of autonomy for adolescents of various cultural backgrounds (Fuligni, 1998; Juang et al., 2012; Smetana, 2002; Steinberg & Morris, 2001; Yau & Smetana, 1996)
Positive affect	Positive feelings related to autonomy
Negative affect	Negative feelings related to autonomy
Source of autonomy	Differentiation between self and others - subcategories parents, peers, teachers
Non-corresponding value	Whether autonomy is mentioned in relation to a different value than chosen essay value
Relatedness	“the need to feel connected with other people and to be genuinely accepted in interpersonal relations” (Soenens & Vansteenkiste, 2011, p. 383)
Social Identification	Identifying self as member of a particular social group (Ashmore et al., 2004)
Belonging	The need to feel connected to people close to them (Deci & Ryan, 1985, 2000), feelings of closeness to other people (Vignoles et al., 2006)
Acceptance	The need to be genuinely accepted in interpersonal relations (Deci & Ryan, 1985, 2000)

Support	Feel supported by people close to them (Deci & Ryan, 1985, 2000)
Collectivism	Tightly-knit social framework, ingroup plays central role in life, individuals show unquestioning loyalty towards their ingroup and are looked after by all members (Hofstede, 2011)
Interdependent self	Self is made meaningful within a larger social context (Markus & Kitayama, 1991), degree to which individuals merge their self and the group (Ashmore et al., 2004)
Extrinsic motivation	Doing something because it is expected from you
Dependence	Needing the support of something or someone in order to continue existing or operating (Cambridge Dictionary, n.d.-a)
Cohesiveness	Referring to “solidarity, cohesion, comradeship, team spirit, group atmosphere, unity, ‘oneness,’ ‘we-ness,’ ‘groupness,’ and belongingness” (Hogg, 1992, p. 1).
Cooperation	Cultural construct that reflects the extent to which people in a society value working together to achieve collective goals (Hofstede, 2001; Markus & Kitayama, 1991)
Harmony	A situation in which people are peaceful and agree with each other (Cambridge Dictionary, n.d.-b; see Markus & Kitayama, 1991)
Obligation, duty	Actions that individuals feel they are required to take by their group (see Greenfield, 2013)
Community	“The sense that one was part of a readily available, mutually supportive network of relationships (Sarason, 1974, p. 1); the feeling that group members are important to each other and the conviction that the needs of the group members will be addressed through their shared commitment to be together (McMillan & Chavis, 1986)
Positive affect	Positive feelings related to relatedness
Negative affect	Negative feelings related to relatedness
Source of relatedness	Who is being referred to - subcategories parents, peers, teachers
Non-corresponding value	Whether relatedness is mentioned in relation to a different value than chosen essay value

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**Table B2***Prior for predicting differences between excluded and non-excluded students*

<b>Predictor</b>	<b>Prior</b>
Age	student_t(3, 0, .5)
Female	student_t(3, 0, .5)
German-hyphenated self-identification	student_t(3, 0, .5)
Non-German self-identification	student_t(3, 0, .5)
Culturally-sensitive intervention condition	student_t(3, 0, .5)

*Note.* Priors indicating no differences between groups were selected. For gender, male is the reference category. For self-identification, German-only self-identifiers are the reference category. For the intervention condition, the traditional self-affirmation intervention condition is the reference category.

**Table B3***Predicting differences between excluded (n = 45) and non-excluded students (n = 364)*

<b>Models</b>	<b>Posterior estimate</b>	<b>Posterior SE</b>	<b>Credible interval</b>
Excluded from analysis			
Age	.31	0.20	[-.09 ; .70]
Female	-.33	0.30	[-.94 ; .24]
German-hyphenated self-identification	-.15	0.35	[-.21 ; .99]
Non-German self-identification	.72	0.35	[-.84 ; .51]
Culturally-sensitive intervention condition	.14	0.29	[.07 ; 1.44]

*Note.* For gender, male is the reference category. For self-identification, German-only self-identifiers are the reference category. For the intervention condition, the traditional self-affirmation intervention condition is the reference category.

**Table B4***Overview of chosen essay values*

Chosen essay value	Frequency			
	German-only self-identifiers ( <i>N</i> = 145)	German- hyphenated self-identifiers ( <i>N</i> = 127)	Non-German self-identifiers ( <i>N</i> = 92)	Total ( <i>N</i> = 364)
Autonomy ( <i>N</i> = 233)				
Being free and independent	23 (.16)	14 (.11)	8 (.09)	45 (.12)
Having fun	57 (.39)	47 (.37)	27 (.29)	131 (.36)
Always experiencing something new	13 (.09)	13 (.10)	6 (.07)	32 (.09)
Doing what I want	7 (.05)	10 (.08)	8 (.09)	25 (.07)
Relatedness ( <i>N</i> = 384)				
Belonging to a group	10 (.07)	6 (.05)	3 (.03)	19 (.05)
Helping other people	26 (.18)	22 (.17)	21 (.23)	69 (.19)
Friends and family	110 (.76)	93 (.73)	72 (.78)	275 (.76)
Fostering cultural or religious traditions	2 (.01)	9 (.07)	10 (.11)	21 (.06)
Competence ( <i>N</i> = 108)				
Being athletic	32 (.22)	19 (.15)	20 (.22)	71 (0.20)
Being good at arts	1 (.01)	5 (.04)	3 (.03)	9 (.02)
Being good at technical things	6 (0.04)	7 (0.06)	1 (0.01)	14 (0.04)
Being good at music	2 (0.01)	9 (0.07)	3 (0.03)	14 (0.04)

**Table B5***Overview of topics chosen by topics coded as*

Topic chosen	Essays coded as	Frequency			
		German-only self- identifiers ( <i>N</i> = 145)	German-hyphenated self-identifiers ( <i>N</i> = 127)	Non-German self- identifiers ( <i>N</i> = 92)	Total ( <i>N</i> = 364)
<b>Only Autonomy</b> ( <i>N</i> = 21)	Only Autonomy	8 (.06)	6 (.05)	3 (.03)	17 (.05)
	Only Relatedness	0 (.00)	0 (.00)	0 (.00)	0 (.00)
	Both Autonomy and Relatedness	1 (.01)	2 (.02)	1 (.01)	4 (.01)
<b>Only Relatedness</b> ( <i>N</i> = 78)	Only Autonomy	0 (.00)	1 (.01)	0 (.00)	1 (.00)
	Only Relatedness	9 (.06)	7 (.06)	11 (.12)	27 (.07)
	Both Autonomy and Relatedness	17 (.12)	17 (.13)	16 (.17)	50 (.14)
<b>Only Competence</b> ( <i>N</i> = 4)	Only Autonomy	0 (.00)	1 (.01)	0 (.00)	1 (.00)
	Only Relatedness	0 (.00)	0 (.00)	0 (.00)	0 (.00)
	Both Autonomy and Relatedness	1 (.01)	1 (.01)	1 (.01)	3 (.01)
<b>Autonomy &amp; Relatedness</b> ( <i>N</i> = 161)	Only Autonomy	1 (.01)	2 (.02)	1 (.01)	4 (.01)
	Only Relatedness	0 (.00)	4 (.03)	1 (.01)	5 (.01)
	Both Autonomy and Relatedness	69 (.48)	50 (.39)	33 (.03)	152 (.42)
<b>Autonomy &amp; Competence</b> ( <i>N</i> = 29)	Only Autonomy	7 (.05)	6 (.04)	3 (.03)	16 (.04)
	Only Relatedness	0 (.00)	0 (.00)	0 (.00)	0 (.00)
	Both Autonomy and Relatedness	5 (.03)	5 (.04)	3 (.03)	13 (.04)
<b>Relatedness &amp; Competence</b> ( <i>N</i> = 71)	Only Autonomy	0 (.00)	0 (.00)	1 (.01)	1 (.00)
	Only Relatedness	1 (.01)	0 (.00)	1 (.01)	2 (.01)
	Both Autonomy and Relatedness	26 (.18)	25 (.20)	17 (.18)	68 (.19)

**Table B6**

*Absolute frequency of codes by self-identification of students, including frequency relative to group size in parentheses*

Code	Frequency			Total (N = 364)
	German-only self-identifiers (N = 145)	German-hyphenated self-identifiers (N = 127)	Non-German self-identifiers (N = 92)	
<b>Autonomy</b>				
Freedom	31 (0.21)	23 (0.18)	16 (0.17)	70 (0.19)
Independence/ independent self	28 (0.19)	12 (0.09)	15 (0.16)	55 (0.15)
Individualism	266 (1.83)	198 (1.56)	112 (1.22)	576 (1.58)
Intrinsic motivation	88 (0.61)	82 (0.65)	54 (0.59)	224 (0.62)
Parent-child conflict	0 (0.00)	4 (0.03)	0 (0.00)	4 (0.01)
Purpose/Growth	75 (0.52)	59 (0.46)	24 (0.26)	158 (0.43)
Separation parents	0 (0.00)	1 (0.01)	4 (0.04)	5 (0.01)
Volition	31 (0.21)	30 (0.24)	21 (0.23)	82 (0.23)
Positive affect	26 (0.18)	40 (0.31)	12 (0.13)	78 (0.21)
Negative affect	4 (0.03)	2 (0.02)	0 (0.00)	6 (0.02)
Autonomy reference				
Family	56 (0.39)	42 (0.33)	16 (0.17)	114 (0.31)
Parents	0 (0.00)	4 (0.03)	5 (0.05)	9 (0.02)
Friends	68 (0.47)	65 (0.51)	31 (0.34)	164 (0.45)
(Cultural) group	7 (0.05)	3 (0.02)	2 (0.02)	12 (0.03)
Self	265 (1.83)	219 (1.72)	127 (1.38)	611 (1.68)
Place	2 (0.01)	2 (0.02)	3 (0.03)	7 (0.02)
Teacher	0 (0.00)	1 (0.01)	0 (0.00)	1 (0.00)
Others	18 (0.12)	7 (0.06)	9 (0.10)	34 (0.09)
<b>Relatedness</b>				
Acceptance	5 (0.03)	3 (0.02)	1 (0.01)	9 (0.02)
Belonging	137 (0.94)	122 (0.96)	95 (1.03)	354 (0.97)
Cohesiveness	9 (0.06)	8 (0.06)	3 (0.03)	20 (0.05)
Collectivism/Community	149 (1.03)	113 (0.89)	77 (0.84)	339 (0.93)
Cooperation	1 (0.01)	3 (0.02)	2 (0.02)	6 (0.02)
Dependence	45 (0.31)	23 (0.18)	27 (0.29)	95 (0.26)
Harmony	9 (0.06)	4 (0.03)	3 (0.03)	16 (0.04)
Interdependent self	33 (0.23)	27 (0.21)	21 (0.23)	81 (0.22)

Obligation. duty. extrinsic motivation	47 (0.32)	30 (0.24)	33 (0.36)	110 (0.30)
Rituals	13 (0.09)	17 (0.13)	18 (0.20)	48 (0.13)
Social identification	4 (0.03)	6 (0.05)	4 (0.04)	14 (0.04)
Support	68 (0.47)	75 (0.59)	54 (0.59)	197 (0.54)
Positive affect	50 (0.34)	61 (0.48)	39 (0.42)	150 (0.41)
Negative affect	16 (0.11)	11 (0.09)	6 (0.07)	33 (0.09)
Relatedness reference				
Family	178 (1.23)	173 (1.36)	124 (1.35)	475 (1.30)
Parents	6 (0.04)	14 (0.11)	13 (0.14)	33 (0.09)
Siblings	2 (0.01)	4 (0.03)	2 (0.02)	8 (0.02)
Friends	184 (1.27)	156 (1.23)	88 (0.96)	428 (1.18)
(Cultural) group	22 (0.15)	14 (0.11)	16 (0.17)	52 (0.14)
Self	29 (0.20)	17 (0.13)	10 (0.11)	56 (0.15)
Place	3 (0.02)	4 (0.03)	2 (0.02)	9 (0.02)
Teachers	2 (0.01)	2 (0.02)	1 (0.01)	5 (0.01)
Humanity	6 (0.04)	14 (0.11)	13 (0.14)	33 (0.09)
Others	52 (0.36)	44 (0.35)	33 (0.36)	129 (0.35)

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**Table B7***Prior for predicting frequencies of codes by self-identification for Regressions*

<b>Predictor</b>	<b>Prior</b>
German-hyphenated self-identification	student_t(3, 0, .5)
Non-German self-identification	student_t(3, 0, .5)
Female	student_t(3, 0, .5)
Age	student_t(3, 0, .5)
Culturally-sensitive intervention condition	student_t(3, 0, .5)
German-hyphenated ID x female	student_t(3, 0, .5)
Non-German ID x female	student_t(3, 0, .5)

*Note.* The same predictors and priors are regressed on all autonomy and relatedness codes. Based on theory, priors indicating no differences between groups were selected. For self-identification, German-only self-identifiers are the reference category. For gender, male is the reference category. For the intervention condition, the traditional self-affirmation intervention condition is the reference category.

**Table B8***Predicting frequencies of codes by self-identification (n = 364)*

<b>Models</b>	<b>Posterior estimate</b>	<b>Posterior SE</b>	<b>Credible interval</b>
<b>Autonomy</b>			
Freedom			
German-hyphenated self-identification	.01	0.09	[-.17 ; .18]
Non-German self-identification	.05	0.09	[-.12 ; .23]
Female	<b>.20</b>	0.08	[.04 ; .36]
Age	-.04	0.04	[-.12 ; .03]
Culturally-sensitive intervention condition	-.10	0.06	[-.21 ; .00]
German-hyphenated ID x female	-.10	0.12	[-.34 ; .13]
Non-German ID x female	-.17	0.13	[-.43 ; .08]
Independence/ independent self			
German-hyphenated self-identification	-.07	0.08	[-.23 ; .10]
Non-German self-identification	.04	0.08	[-.12 ; .21]
Female	.13	0.08	[-.02 ; .29]
Age	.00	0.04	[-.07 ; .07]
Culturally-sensitive intervention condition	-.07	0.05	[-.17 ; .03]
German-hyphenated ID x female	-.09	0.11	[-.31 ; .13]
Non-German ID x female	-.13	0.12	[-.37 ; .11]
Individualism			
German-hyphenated self-identification	-.21	0.21	[-.63 ; .20]
Non-German self-identification	-.34	0.22	[-.79 ; .08]
Female	<b>.59</b>	0.20	[.22 ; .97]
Age	<b>-.23</b>	0.10	[-.43 ; -.04]
Culturally-sensitive intervention condition	.09	0.15	[-.20 ; .38]
German-hyphenated ID x female	-.02	0.26	[-.53 ; .51]
Non-German ID x female	-.36	0.31	[-.97 ; .23]
Intrinsic motivation			
German-hyphenated self-identification	-.12	0.14	[-.40 ; .15]
Non-German self-identification	-.05	0.14	[-.33 ; .23]
Female	.09	0.13	[-.16 ; .34]
Age	-.01	0.06	[-.13 ; .12]
Culturally-sensitive intervention condition	-.13	0.09	[-.31 ; .06]
German-hyphenated ID x female	.28	0.19	[-.08 ; .66]
Non-German ID x female	.14	0.20	[-.25 ; .52]
Parent-child conflict			
German-hyphenated self-identification	.00	0.04	[-.07 ; .08]
Non-German self-identification	.00	0.04	[-.08 ; .08]
Female	.00	0.03	[-.06 ; .07]
Age	.01	0.02	[-.02 ; .04]
Culturally-sensitive intervention condition	.02	0.02	[-.02 ; .07]
German-hyphenated ID x female	.05	0.05	[-.05 ; .15]
Non-German ID x female	-.00	0.06	[-.11 ; .10]
Purpose/Growth			
German-hyphenated self-identification	.04	0.14	[-.24 ; .31]
Non-German self-identification	-.11	0.14	[-.39 ; .17]
Female	<b>.31</b>	0.13	[.05 ; .56]
Age	-.12	0.06	[-.24 ; .00]

	Culturally-sensitive intervention condition	.08	0.09	[-.10 ; .26]
	German-hyphenated ID x female	-.14	0.18	[-.50 ; .22]
	Non-German ID x female	-.26	0.20	[-.65 ; .12]
Separation parents				
	German-hyphenated self-identification	.02	0.03	[-.03 ; .07]
	Non-German self-identification	.04	0.03	[-.01 ; .09]
	Female	.00	0.02	[-.05 ; .05]
	Age	.00	0.01	[-.02 ; .02]
	Culturally-sensitive intervention condition	.02	0.01	[-.01 ; .04]
	German-hyphenated ID x female	-.02	0.03	[-.09 ; .05]
	Non-German ID x female	.01	0.04	[-.07 ; .08]
Volition				
	German-hyphenated self-identification	.01	0.09	[-.17 ; .19]
	Non-German self-identification	.08	0.09	[-.10 ; .26]
	Female	.13	0.08	[-.04 ; .29]
	Age	-.03	0.04	[-.10 ; .05]
	Culturally-sensitive intervention condition	-.06	0.06	[-.17 ; .04]
	German-hyphenated ID x female	.00	0.12	[-.23 ; .24]
	Non-German ID x female	-.11	0.13	[-.37 ; .15]
Positive affect				
	German-hyphenated self-identification	-.07	0.10	[-.26 ; .13]
	Non-German self-identification	-.07	0.10	[-.26 ; .12]
	Female	.05	0.09	[-.12 ; .23]
	Age	-.06	0.04	[-.14 ; .02]
	Culturally-sensitive intervention condition	-.04	0.06	[-.16 ; .08]
	German-hyphenated ID x female	<b>.35</b>	0.13	[.08 ; .61]
	Non-German ID x female	.08	0.14	[-.20 ; .35]
Negative affect				
	German-hyphenated self-identification	-.01	0.02	[-.06 ; .03]
	Non-German self-identification	-.01	0.02	[-.06 ; .04]
	Female	.03	0.02	[-.01 ; .07]
	Age	-.01	0.01	[-.03 ; .01]
	Culturally-sensitive intervention condition	-.01	0.01	[-.03 ; .02]
	German-hyphenated ID x female	-.00	0.03	[-.07 ; .06]
	Non-German ID x female	-.03	0.04	[-.10 ; .04]
Source: Family				
	German-hyphenated self-identification	.01	0.11	[-.20 ; .22]
	Non-German self-identification	-.20	0.11	[-.41 ; .01]
	Female	.12	0.10	[-.07 ; .30]
	Age	-.01	0.05	[-.10 ; .08]
	Culturally-sensitive intervention condition	-.08	0.07	[-.21 ; .05]
	German-hyphenated ID x female	-.12	0.14	[-.40 ; .16]
	Non-German ID x female	.03	0.15	[-.27 ; .33]
Source: Parents				
	German-hyphenated self-identification	.01	0.05	[-.08 ; .10]
	Non-German self-identification	.06	0.04	[-.02 ; .15]
	Female	.01	0.04	[-.08 ; .09]
	Age	.00	0.02	[-.03 ; .04]
	Culturally-sensitive intervention condition	.04	0.03	[-.01 ; .09]
	German-hyphenated ID x female	.05	0.06	[-.08 ; .17]

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Non-German ID x female	-0.02	0.07	[-.15 ; .11]
Source: Friends			
German-hyphenated self-identification	.00	0.12	[-.24 ; .25]
Non-German self-identification	-.10	0.13	[-.35 ; .14]
Female	.11	0.11	[-.11 ; .33]
Age	-.03	0.05	[-.13 ; .07]
Culturally-sensitive intervention condition	-.07	0.08	[-.22 ; .07]
German-hyphenated ID x female	.08	0.16	[-.25 ; .40]
Non-German ID x female	-.01	0.18	[-.36 ; .34]
Source: (Cultural) Group			
German-hyphenated self-identification	-.01	0.04	[-.09 ; .07]
Non-German self-identification	-.03	0.04	[-.11 ; .05]
Female	-.00	0.04	[-.08 ; .07]
Age	.02	0.02	[-.01 ; .05]
Culturally-sensitive intervention condition	-.01	0.02	[-.05 ; .04]
German-hyphenated ID x female	-.02	0.05	[-.13 ; .08]
Non-German ID x female	.01	0.06	[-.10 ; .12]
Source: Self			
German-hyphenated self-identification	-.06	0.23	[-.54 ; .40]
Non-German self-identification	-.15	0.24	[-.61 ; .31]
Female	<b>.75</b>	0.22	[.33 ; 1.18]
Age	<b>-.26</b>	0.11	[-.48 ; -.04]
Culturally-sensitive intervention condition	.05	0.16	[-.26 ; .36]
German-hyphenated ID x female	-.05	0.29	[-.65 ; .53]
Non-German ID x female	-.41	0.33	[-1.07 ; .21]
Source: Place			
German-hyphenated self-identification	.02	0.02	[-.03 ; .07]
Non-German self-identification	.00	0.02	[-.05 ; .05]
Female	.03	0.02	[-.01 ; .07]
Age	-.01	0.01	[-.03 ; .01]
Culturally-sensitive intervention condition	-.01	0.01	[-.04 ; .01]
German-hyphenated ID x female	-.04	0.03	[-.10 ; .03]
Non-German ID x female	.04	0.04	[-.03 ; .11]
Source: Teacher			
German-hyphenated self-identification	.02	0.01	[.00 ; .04]
Non-German self-identification	-.00	0.01	[-.02 ; .02]
Female	.00	0.01	[-.02 ; .02]
Age	.00	0.00	[-.00 ; .01]
Culturally-sensitive intervention condition	.01	0.01	[-.00 ; .02]
German-hyphenated ID x female	-.02	0.01	[-.05 ; .00]
Non-German ID x female	-.00	0.01	[-.03 ; .03]
Source: Others			
German-hyphenated self-identification	-.05	0.06	[-.16 ; .06]
Non-German self-identification	.01	0.06	[-.10 ; .12]
Female	<b>.15</b>	0.05	[.05 ; .26]
Age	-.02	0.02	[-.07 ; .02]
Culturally-sensitive intervention condition	-.04	0.03	[-.10 ; .03]
German-hyphenated ID x female	-.08	0.08	[-.23 ; .08]
Non-German ID x female	-.08	0.08	[-.24 ; .09]

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<b>Relatedness</b>			
Acceptance			
German-hyphenated self-identification	-0.00	0.03	[-.06 ; .05]
Non-German self-identification	.00	0.03	[-.06 ; .06]
Female	<b>.07</b>	0.03	[.02 ; .13]
Age	-0.00	0.01	[-.03 ; .02]
Culturally-sensitive intervention condition	-0.01	0.02	[-.05 ; .02]
German-hyphenated ID x female	-0.03	0.04	[-.11 ; .04]
Non-German ID x female	-0.05	0.04	[-.13 ; .03]
Belonging			
German-hyphenated self-identification	.03	0.15	[-.28 ; .31]
Non-German self-identification	.20	0.15	[-.09 ; .50]
Female	<b>.33</b>	0.14	[.06 ; .61]
Age	-0.07	0.07	[-.20 ; .06]
Culturally-sensitive intervention condition	-0.06	0.10	[-.24 ; .13]
German-hyphenated ID x female	-0.04	0.20	[-.44 ; .34]
Non-German ID x female	-0.20	0.21	[-.62 ; .21]
Cohesiveness			
German-hyphenated self-identification	.04	0.04	[-.05 ; .13]
Non-German self-identification	-0.01	0.05	[-.10 ; .08]
Female	.05	0.04	[-.03 ; .13]
Age	-0.02	0.02	[-.06 ; .01]
Culturally-sensitive intervention condition	-0.02	0.03	[-.08 ; .03]
German-hyphenated ID x female	-0.07	0.06	[-.19 ; .05]
Non-German ID x female	-0.03	0.07	[-.15 ; .10]
Collectivism/Community			
German-hyphenated self-identification	-0.10	0.17	[-.46 ; .23]
Non-German self-identification	-0.10	0.18	[-.44 ; .26]
Female	<b>.51</b>	0.16	[.20 ; .83]
Age	-0.10	0.08	[-.25 ; .06]
Culturally-sensitive intervention condition	-0.05	0.11	[-.28 ; .18]
German-hyphenated ID x female	-0.10	0.23	[-.54 ; .35]
Non-German ID x female	-0.07	0.24	[-.56 ; .40]
Cooperation			
German-hyphenated self-identification	.03	0.02	[-.02 ; .07]
Non-German self-identification	.03	0.02	[-.02 ; .07]
Female	-0.01	0.02	[-.05 ; .03]
Age	.01	0.01	[-.01 ; .03]
Culturally-sensitive intervention condition	.00	0.01	[-.03 ; .03]
German-hyphenated ID x female	-0.02	0.03	[-.07 ; .04]
Non-German ID x female	-0.03	0.03	[-.09 ; .04]
Dependence			
German-hyphenated self-identification	-0.08	0.09	[-.26 ; .10]
Non-German self-identification	.00	0.09	[-.18 ; .19]
Female	.04	0.08	[-.12 ; .20]
Age	-0.02	0.04	[-.09 ; .06]
Culturally-sensitive intervention condition	.02	0.05	[-.09 ; .12]
German-hyphenated ID x female	-0.07	0.12	[-.30 ; .17]
Non-German ID x female	-0.02	0.14	[-.29 ; .24]

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Harmony			
German-hyphenated self-identification	.01	0.04	[-.07 ; .09]
Non-German self-identification	-.01	0.04	[-.09 ; .07]
Female	<b>.11</b>	0.04	[.03 ; .18]
Age	.03	0.02	[-.00 ; .06]
Culturally-sensitive intervention condition	-.00	0.02	[-.05 ; .04]
German-hyphenated ID x female	-.09	0.06	[-.20 ; .02]
Non-German ID x female	-.03	0.06	[-.15 ; .09]
Interdependent self			
German-hyphenated self-identification	-.02	0.08	[-.18 ; .14]
Non-German self-identification	.13	0.08	[-.03 ; .30]
Female	.15	0.08	[-.00 ; .30]
Age	-.02	0.03	[-.09 ; .05]
Culturally-sensitive intervention condition	-.13	0.05	[-.23 ; -.04]
German-hyphenated ID x female	-.02	0.11	[-.24 ; .20]
Non-German ID x female	-.26	0.12	[-.49 ; -.02]
Obligation, duty, extrinsic motivation			
German-hyphenated self-identification	.03	0.11	[-.19 ; .26]
Non-German self-identification	.00	0.11	[-.22 ; .23]
Female	.04	0.10	[-.16 ; .25]
Age	.01	0.05	[-.08 ; .10]
Culturally-sensitive intervention condition	-.05	0.07	[-.19 ; .08]
German-hyphenated ID x female	-.21	0.15	[-.52 ; .09]
Non-German ID x female	.11	0.16	[-.19 ; .42]
Rituals			
German-hyphenated self-identification	.01	0.07	[-.13 ; .16]
Non-German self-identification	.02	0.07	[-.13 ; .16]
Female	-.02	0.07	[-.15 ; .11]
Age	-.02	0.03	[-.08 ; .04]
Culturally-sensitive intervention condition	.01	0.04	[-.07 ; .10]
German-hyphenated ID x female	.07	0.10	[-.12 ; .26]
Non-German ID x female	<b>.21</b>	0.11	[.00 ; .41]
Social identification			
German-hyphenated self-identification	.04	0.03	[-.03 ; .11]
Non-German self-identification	.02	0.04	[-.05 ; .09]
Female	-.02	0.03	[-.09 ; .04]
Age	.01	0.01	[-.02 ; .03]
Culturally-sensitive intervention condition	-.01	0.02	[-.05 ; .03]
German-hyphenated ID x female	-.03	0.05	[-.12 ; .06]
Non-German ID x female	-.01	0.05	[-.12 ; .09]
Support			
German-hyphenated self-identification	.18	0.13	[-.07 ; .42]
Non-German self-identification	.22	0.13	[-.04 ; .48]
Female	<b>.33</b>	0.12	[.10 ; .57]
Age	-.02	0.06	[-.13 ; .09]
Culturally-sensitive intervention condition	-.02	0.08	[-.17 ; .14]
German-hyphenated ID x female	-.15	0.17	[-.48 ; .19]
Non-German ID x female	-.20	0.18	[-.56 ; .15]
Positive affect			
German-hyphenated self-identification	-.05	0.12	[-.29 ; .18]

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Non-German self-identification	.04	0.12	[-.20 ; .27]
Female	.06	0.11	[-.16 ; .27]
Age	-.03	0.05	[-.13 ; .07]
Culturally-sensitive intervention condition	-.08	0.08	[-.23 ; .037]
German-hyphenated ID x female	<b>.32</b>	0.16	[.01 ; .64]
Non-German ID x female	.13	0.17	[-.20 ; .48]
Negative affect			
German-hyphenated self-identification	.00	0.07	[-.13 ; .14]
Non-German self-identification	.01	0.07	[-.13 ; .14]
Female	.10	0.06	[-.03 ; .23]
Age	-.05	0.03	[-.10 ; .01]
Culturally-sensitive intervention condition	-.04	0.04	[-.12 ; .05]
German-hyphenated ID x female	-.05	0.10	[-.24 ; .13]
Non-German ID x female	-.09	0.10	[-.29 ; .11]
Source: Family			
German-hyphenated self-identification	.16	0.18	[-.18 ; .51]
Non-German self-identification	.19	0.18	[-.16 ; .53]
Female	<b>.49</b>	0.16	[.19 ; .81]
Age	-.11	0.08	[-.28 ; .05]
Culturally-sensitive intervention condition	-.13	0.12	[-.37 ; .10]
German-hyphenated ID x female	-.09	0.23	[-.54 ; .35]
Non-German ID x female	-.08	0.24	[-.55 ; .41]
Source: Parents			
German-hyphenated self-identification	.07	0.06	[-.05 ; .18]
Non-German self-identification	<b>.15</b>	0.06	[.03 ; .27]
Female	.06	0.06	[-.05 ; .17]
Age	-.02	0.03	[-.07 ; .03]
Culturally-sensitive intervention condition	-.03	0.04	[-.10 ; .04]
German-hyphenated ID x female	-.01	0.08	[-.17 ; .16]
Non-German ID x female	-.10	0.09	[-.28 ; .08]
Source: Siblings			
German-hyphenated self-identification	-.00	0.03	[-.06 ; .05]
Non-German self-identification	.02	0.03	[-.03 ; .08]
Female	.03	0.02	[-.02 ; .08]
Age	.01	0.01	[-.01 ; .03]
Culturally-sensitive intervention condition	-.03	0.02	[-.06 ; .00]
German-hyphenated ID x female	.02	0.04	[-.05 ; .10]
Non-German ID x female	-.03	0.04	[-.10 ; .05]
Source: Friends			
German-hyphenated self-identification	-.03	0.19	[-.39 ; .35]
Non-German self-identification	-.21	0.19	[-.59 ; .18]
Female	<b>.59</b>	0.17	[.25 ; .93]
Age	-.11	0.09	[-.27 ; .06]
Culturally-sensitive intervention condition	-.17	0.12	[-.40 ; .07]
German-hyphenated ID x female	-.05	0.24	[-.53 ; .43]
Non-German ID x female	-.07	0.26	[-.58 ; .46]
Source: (Cultural) group			
German-hyphenated self-identification	-.03	0.08	[-.20 ; .13]
Non-German self-identification	.05	0.08	[-.12 ; .22]
Female	-.10	0.08	[-.25 ; .05]

Age	.01	0.03	[-.05 ; .08]
Culturally-sensitive intervention condition	-.01	0.05	[-.11 ; .08]
German-hyphenated ID x female	.02	0.11	[-.20 ; .24]
Non-German ID x female	-.04	0.12	[-.28 ; .20]
Source: Self			
German-hyphenated self-identification	-.04	0.08	[-.20 ; .11]
Non-German self-identification	-.02	0.08	[-.18 ; .13]
Female	.10	0.07	[-.04 ; .24]
Age	-.04	0.03	[-.10 ; .02]
Culturally-sensitive intervention condition	-.04	0.04	[-.12 ; .05]
German-hyphenated ID x female	-.04	0.11	[-.25 ; .17]
Non-German ID x female	-.13	0.11	[-.35 ; .09]
Source: Place			
German-hyphenated self-identification	.02	0.03	[-.04 ; .08]
Non-German self-identification	.00	0.03	[-.06 ; .07]
Female	.05	0.03	[-.02 ; .11]
Age	.02	0.01	[-.01 ; .05]
Culturally-sensitive intervention condition	-.01	0.02	[-.05 ; .03]
German-hyphenated ID x female	-.03	0.04	[-.12 ; .06]
Non-German ID x female	.00	0.05	[-.09 ; .10]
Source: Teachers			
German-hyphenated self-identification	.01	0.02	[-.03 ; .06]
Non-German self-identification	-.02	0.03	[-.07 ; .03]
Female	-.03	0.02	[-.07 ; .02]
Age	-.01	0.01	[-.03 ; .01]
Culturally-sensitive intervention condition	-.00	0.01	[-.03 ; .02]
German-hyphenated ID x female	-.01	0.03	[-.08 ; .05]
Non-German ID x female	.05	0.04	[-.03 ; .12]
Source: Humanity			
German-hyphenated self-identification	.05	0.06	[-.06 ; .16]
Non-German self-identification	.01	0.06	[-.09 ; .12]
Female	.08	0.05	[-.02 ; .17]
Age	-.02	0.02	[-.06 ; .03]
Culturally-sensitive intervention condition	-.02	0.03	[-.08 ; .05]
German-hyphenated ID x female	-.06	0.08	[-.20 ; .09]
Non-German ID x female	-.10	0.08	[-.26 ; .07]
Source: Others			
German-hyphenated self-identification	.06	0.12	[-.18 ; .30]
Non-German self-identification	-.00	0.13	[-.25 ; .25]
Female	<b>.32</b>	0.11	[.10 ; .54]
Age	.00	0.05	[-.10 ; .10]
Culturally-sensitive intervention condition	-.02	0.08	[-.17 ; .13]
German-hyphenated ID x female	-.18	0.17	[-.49 ; .16]
Non-German ID x female	.05	0.18	[-.31 ; .40]

*Note.* For self-identification, German-only self-identifiers are the reference category. For gender, male is the reference category. For the intervention condition, the traditional self-affirmation intervention condition is the reference category.



**Table B9***Overview of topics written about by students: Autonomy or relatedness*

Essays coded as	Frequency			
	German-only self-identifiers ( <i>N</i> = 145)	German- hyphenated self- identifiers ( <i>N</i> = 127)	Non-German self- identifiers ( <i>N</i> = 92)	Total ( <i>N</i> = 364)
Only Autonomy	16 (.11)	16 (.13)	8 (.09)	40 (.11)
Only Relatedness	10 (.07)	11 (.09)	13 (.14)	34 (.09)
Both Autonomy and Relatedness	119 (.82)	100 (.79)	71 (.77)	290 (.78)

**Table B10**

*Bayesian correlations of autonomy and relatedness essay codes for German-only self-identifiers (n = 145)*

	<b>Autonomy</b>																	
											Source of autonomy							
	Freedom	Indepen- dence/ independent self	Individu- alism	Intrinsic motivation	Parent- child conflict	Purpose/ Growth	Separation parents	Volition	Positive affect	Negative affect	Family	Parents	Friends	(Cultural) group	Self	Place	Teacher	Others
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	
<b>Relatedness</b>																		
Acceptance	-.00	-.07	.22*	-.00	NA	.16	NA	.13	.08	.19*	.21*	NA	.21*	-.03	.08	.29***	NA	.04
Belonging	-.09	.04	-.00	-.16	NA	-.02	NA	-.09	-.08	-.13	.13	NA	.17	-.01	-.20*	.07	NA	.03
Cohesiveness	.00	.11	.14	-.04	NA	.01	NA	.00	.02	-.04	.23**	NA	.30***	-.04	.03	.40***	NA	-.01
Collectivism/ Community Cooperation	-.15	-.15	.04	.14	NA	.03	NA	-.04	.00	-.04	.13	NA	.13	.07	-.00	.04	NA	.13
Dependence	-.01	.08	.03	-.11	NA	.17	NA	.05	-.08	-.09	.03	NA	.06	-.05	-.04	-.06	NA	.04
Harmony	.00	-.04	.11	.05	NA	-.05	NA	-.10	.14	-.04	.25**	NA	.30***	-.04	.03	.21*	NA	-.08
Interdependent self	.10	.25**	-.11	.00	NA	-.03	NA	-.02	-.05	.00	.02	NA	.06	-.07	-.03	-.05	NA	-.00
Obligation. duty. extrinsic motivation	-.10	.11	-.17	-.06	NA	-.01	NA	.01	-.11	-.07	-.09	NA	-.02	-.01	-.11	.03	NA	.12
Rituals	-.11	-.11	.03	-.04	NA	-.04	NA	-.07	-.01	-.04	.18	NA	.22*	-.04	-.14	.15	NA	-.09
Social Identification Support	-.07	-.06	.07	.07	NA	-.08	NA	-.07	.02	-.03	.08	NA	.21*	-.02	-.10	-.02	NA	.15
Positive affect	-.03	-.11	.05	.10	NA	.00	NA	-.07	.14	-.02	.22*	NA	.28***	-.05	-.14	.11	NA	-.06
Negative affect	.12	.27***	-.07	-.06	NA	-.11	NA	.09	-.05	-.04	-.06	NA	.03	.01	-.03	.09	NA	.21*

Source of relatedness																			
Family	-.15	-.09	.08	.12	NA	.18	NA	-.09	.15	-.10	.37***	NA	.32***	-.14	-.04	.07	NA	-.08	
Parents	-.02	.12	-.16	.09	NA	-.04	NA	-.02	-.07	-.03	-.02	NA	-.08	-.03	.00	-.02	NA	-.06	
Siblings	.06	.30***	-.05	-.08	NA	-.06	NA	.06	-.04	-.02	.02	NA	-.01	-.02	.01	-.02	NA	-.04	
Friends	-.14	-.09	.12	.10	NA	.15	NA	-.11	.10	-.09	.32***	NA	.45***	.00	-.05	.15	NA	-.06	
(Cultural) group	-.10	-.09	.02	-.13	NA	.05	NA	-.10	-.11	-.05	-.05	NA	-.02	.65***	-.06	-.04	NA	.11	
Self	-.05	.16	.03	.11	NA	.10	NA	.04	-.06	-.06	-.02	NA	-.01	-.06	.17	.06	NA	.08	
Place	.03	.22*	.04	-.04	NA	-.07	NA	.11	.04	-.02	.18	NA	.27***	-.02	.02	.80***	NA	-.04	
Teachers	-.03	-.03	-.04	.12	NA	-.04	NA	-.04	-.03	-.02	-.05	NA	.15	-.01	-.08	-.01	NA	-.02	
Humanity	-.02	.02	-.04	-.06	NA	-.05	NA	-.05	-.05	-.02	-.07	NA	-.07	-.02	-.10	-.02	NA	.34***	
Others	-.02	-.02	-.03	.16	NA	-.11	NA	.01	-.01	.03	-.11	NA	-.12	-.07	.09	-.05	NA	.33***	

*Note.* A Bayes Factor (BF) greater than 1 indicates evidence for the H1 (there is a relationship between the two variables). \* Indicates a BF > 3 and is weak evidence for the H1, \*\* indicates a BF > 10 and is moderate evidence for the H1, and \*\*\* indicated a BF > 30 and is strong evidence for the H1.

**Table B11**

*Bayesian correlations of autonomy and relatedness essay codes for German-hyphenated self-identifiers (n = 127)*

	<b>Autonomy</b>																	
											Source of autonomy							
	Freedom	Indepen- dence/ independent self	Individu- alism	Intrinsic motivation	Parent- child conflict	Purpose/ Growth	Separation parents	Volition	Positive affect	Negative affect	Family	Parents	Friends	(Cultural group)	Self	Place	Teacher	Others
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r
<b>Relatedness</b>																		
Acceptance	.14	.25**	.05	-.05	-.01	-.02	-.01	.03	.07	-.02	-.00	-.01	.10	-.03	.03	-.02	-.01	.16
Belonging	-.03	.08	-.02	-.14	-.08	-.25**	.00	.07	-.11	-.01	.14	-.09	.31***	-.05	-.17	-.12	-.08	-.14
Cohesiveness	.19	.02	-.05	-.04	-.02	-.02	-.02	.07	-.09	-.03	-.03	-.02	.11	.33***	-.01	-.03	-.02	-.05
Collectivism/ Community Cooperation	-.11	-.02	.05	.05	-.07	-.02	-.01	.17	-.07	-.04	.04	-.07	.16	.02	.09	-.10	-.07	.13
Dependence	.09	.09	.29***	.04	-.04	-.01	-.04	-.12	.22*	.09	.28***	-.03	-.09	-.06	.16	.09	-.04	.17
Harmony	-.05	.17	-.08	.10	-.01	-.07	-.01	.08	-.01	-.02	-.02	-.01	-.05	.44***	-.02	-.02	-.01	-.03
Interdependent self	.04	.18	.10	-.01	-.04	-.13	-.04	-.05	.03	.08	.06	-.04	.10	.04	.00	-.06	-.04	-.03
Obligation. duty. extrinsic motivation	.02	-.03	-.14	.01	-.04	.00	-.04	.03	-.14	-.06	-.16	-.04	-.12	-.07	-.02	.17	-.04	-.03
Rituals	-.11	-.09	.02	.13	-.03	-.08	-.03	-.00	.02	-.04	.07	-.03	.06	-.05	-.04	-.04	-.03	-.07
Social Identification	-.08	.04	-.11	.05	-.02	.05	-.02	.19	-.04	-.03	-.06	-.02	-.05	.44***	-.03	-.03	-.02	-.04
Support	-.01	.05	.02	-.12	-.06	-.09	-.07	-.17	-.04	-.01	.09	-.06	.14	-.05	-.09	-.09	-.06	-.00
Positive affect	-.10	-.05	.13	.08	-.05	-.10	-.05	-.03	-.01	-.07	.20	-.05	.20	-.09	-.00	-.07	-.05	-.09
Negative affect	.00	-.07	-.05	-.08	-.02	-.03	-.02	-.03	-.01	-.03	-.13	-.02	-.10	-.04	-.02	.33***	-.02	.03

Source of relatedness																			
Family	-.06	.03	.12	-.14	-.10	-.31***	-.03	-.06	-.08	.01	.39***	-.10	.35***	-.12	-.15	-.14	-.09	-.06	
Parents	.05	.15	-.08	-.04	-.02	-.01	-.02	.14	.04	-.03	.04	-.02	.11	-.04	.01	-.03	-.03	-.05	
Siblings	.11	.20*	-.01	.07	-.01	-.04	-.02	.00	.16	-.02	-.02	-.01	-.00	-.03	.00	-.02	-.01	-.04	
Friends	-.06	-.03	.22*	-.11	-.09	-.18	-.02	-.08	-.03	.03	.36***	-.09	.40***	-.12	-.05	-.13	-.09	-.01	
(Cultural) group	-.09	.09	-.12	.06	-.02	-.05	-.02	.10	-.08	-.03	-.08	-.02	-.09	.56***	-.04	-.03	-.02	-.05	
Self	-.00	.02	.07	.02	-.03	.22*	-.03	.17	.04	.12	-.12	-.03	-.05	-.06	.22*	.12	-.03	-.07	
Place	.02	.17	-.11	.09	-.01	-.07	-.01	.08	-.06	-.01	-.08	-.01	-.09	.44***	.00	.27**	-.01	-.03	
Teachers	.07	-.03	-.05	.04	-.01	-.01	-.01	-.06	.03	-.02	-.06	-.01	-.08	-.01	-.02	.47***	-.01	-.03	
Humanity	-.07	-.01	.21*	.29***	-.02	.28***	-.02	.27**	.15	-.03	-.11	-.02	-.13	.12	.40***	-.02	-.02	.30***	
Others	-.02	-.04	-.07	.18	-.04	.06	-.04	.10	-.10	-.06	-.18	-.04	-.11	-.00	.13	-.06	-.04	.14	

*Note.* A Bayes Factor (BF) greater than 1 indicates evidence for the H1 (there is a relationship between the two variables). \* Indicates a BF > 3 and is weak evidence for the H1, \*\* indicates a BF > 10 and is moderate evidence for the H1, and \*\*\* indicated a BF > 30 and is strong evidence for the H1.

**Table B12**

*Bayesian correlations of autonomy and relatedness essay codes for non-German self-identifiers (n = 92)*

	<b>Autonomy</b>																	
											Source of autonomy							
	Freedom	Indepen- dence/ independent self	Individu- alism	Intrinsic motivation	Parent- child conflict	Purpose/ Growth	Separation parents	Volition	Positive affect	Negative affect	Family	Parents	Friends	(Cultural group)	Self	Place	Teacher	Others
r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	r	
<b>Relatedness</b>																		
Acceptance	-.03	-.03	-.02	.05	NA	-.05	-.02	-.04	-.03	NA	-.04	-.02	.12	-.01	-.09	-.02	NA	.30**
Belonging	-.20	-.10	-.02	-.09	NA	-.08	-.01	-.24*	-.06	NA	-.01	-.01	.05	.22	-.23*	-.07	NA	-.12
Cohesiveness	-.06	-.04	.02	.02	NA	.02	-.03	-.07	-.05	NA	.06	-.03	.10	-.03	-.08	-.03	NA	.14
Collectivism/ Community Cooperation	-.01	.09	-.16	.09	NA	-.10	.22	-.06	-.13	NA	.04	.21	.05	-.11	-.09	.24*	NA	.24*
Dependence	-.06	-.01	.03	-.08	NA	-.00	.12	-.06	.02	NA	-.06	.16	.03	-.07	-.04	.01	NA	-.10
Harmony	-.04	-.03	.09	.07	NA	-.07	.33***	-.05	-.04	NA	.44***	.30**	.31***	-.02	-.13	.48***	NA	-.04
Interdependent self	-.12	-.13	-.09	-.12	NA	-.07	-.08	-.19	-.04	NA	.02	-.10	-.04	-.07	-.19	-.09	NA	-.08
Obligation. duty. extrinsic motivation	.05	.06	-.12	.02	NA	-.10	.14	-.06	-.10	NA	-.11	.16	-.12	-.07	-.05	.22	NA	.22
Rituals	-.08	-.09	.10	.17	NA	-.10	.17	-.14	.03	NA	.16	.14	.27*	-.05	-.05	.26*	NA	-.11
Social Identification Support	-.07	-.06	.01	.04	NA	.10	-.04	.01	-.06	NA	-.07	-.04	-.12	-.03	.12	-.04	NA	-.07
Positive affect	-.08	-.03	-.03	.11	NA	-.10	.02	-.07	.16	NA	.13	-.00	.21	.12	-.15	.06	NA	-.09
Negative affect	-.07	-.06	-.13	.10	NA	.10	-.03	-.08	-.06	NA	-.08	-.04	-.12	-.03	-.01	-.04	NA	-.06

Source of relatedness																		
Family	-.23	-.15	.07	-.02	NA	-.05	-.02	-.32***	-.07	NA	.20	-.03	.29**	-.11	-.23	-.00	NA	-.00
Parents	-.01	.03	-.21	-.13	NA	-.07	.13	-.08	-.04	NA	-.11	.20	-.14	.12	-.14	-.06	NA	-.02
Siblings	-.04	-.04	.03	-.01	NA	-.08	-.02	-.05	-.04	NA	.10	-.03	.17	-.02	-.14	-.03	NA	-.05
Friends	-.10	.06	.10	.00	NA	.04	.09	-.17	.06	NA	.17	.05	.22	-.06	-.04	.01	NA	.05
(Cultural) group	-.07	.01	-.26*	-.20	NA	-.09	-.06	-.02	-.09	NA	-.12	-.07	-.20	.23*	-.19	-.06	NA	-.04
Self	-.10	-.08	.26*	.15	NA	.21	-.05	-.07	-.09	NA	-.11	-.06	-.18	-.04	.29**	-.05	NA	-.01
Place	-.03	-.03	-.02	.05	NA	-.05	.37***	-.04	-.03	NA	.17	.34***	.29**	-.01	-.09	.54***	NA	-.03
Teachers	-.03	-.02	-.02	.05	NA	-.06	-.01	-.04	-.03	NA	-.04	-.02	-.06	-.01	.04	-.02	NA	-.03
Humanity	-.03	-.03	-.02	-.07	NA	-.05	-.02	-.04	-.03	NA	-.04	-.02	-.06	-.02	-.03	-.02	NA	-.04
Others	-.06	.06	-.11	.21	NA	-.07	.14	.04	.02	NA	-.14	.16	-.13	-.06	.07	.23	NA	.31***

*Note.* A Bayes Factor (BF) greater than 1 indicates evidence for the H1 (there is a relationship between the two variables). \* Indicates a BF > 3 and is weak evidence for the H1, \*\* indicates a BF > 10 and is moderate evidence for the H1, and \*\*\* indicated a BF > 30 and is strong evidence for the H1.

**Table B13***Autonomy clusters: German-only self-identifiers*

Code	German-only self-identifiers (N = 145)		
	Cluster 1: high autonomy (n = 49)	Cluster 2: low autonomy (n = 77)	Cluster 3: no autonomy (n = 19)
<b>Autonomy</b>			
Freedom	0.37	0.17	0.00
Independence/ independent self	0.27	0.19	0.00
Individualism	3.27	1.26	0.47
Intrinsic motivation	1.00	0.51	0.00
Parent-child conflict	0.00	0.00	0.00
Purpose/Growth	10.6	0.30	0.00
Separation parents	0.00	0.00	0.00
Volition	0.45	0.12	0.00
Positive affect	0.37	0.10	0.00
Negative affect	0.06	0.01	0.00
<b>Source of autonomy</b>			
Family	0.55	0.38	0.00
Parents	0.00	0.00	0.00
Friends	0.65	0.47	0.00
(Heritage cultural) group	0.10	0.03	0.00
Self	3.55	1.06	0.47
Place	0.02	0.01	0.00
Teacher	0.00	0.00	0.00
Others	0.20	0.10	0.00



**Table B14***Relatedness clusters: German-only self-identifiers*

Code	German-only self-identifiers (N = 145)			
	Cluster 1: high relatedness (n = 6)	Cluster 2: low relatedness (n = 100)	Cluster 3: collectivist relatedness (n = 9)	Cluster 4: moderate relatedness (n = 30)
<b>Relatedness</b>				
Acceptance	0.00	0.01	0.00	0.13
Belonging	2.00	0.75	0.11	1.63
Cohesiveness	0.33	0.01	0.11	0.17
Collectivism/Community	3.83	0.63	1.89	1.53
Cooperation	0.00	0.01	0.00	0.00
Dependence	0.83	0.25	0.11	0.47
Harmony	0.33	0.01	0.11	0.17
Interdependent self	0.83	0.17	0.00	0.37
Obligation. duty. extrinsic motivation	1.67	0.23	0.44	0.33
Rituals	0.00	0.03	0.00	0.33
Social identification	0.17	0.01	0.00	0.07
Support	1.00	0.18	0.11	1.43
Positive affect	0.67	0.17	0.11	0.93
Negative affect	1.50	0.02	0.22	0.10
<b>Source of relatedness</b>				
Family	2.00	0.84	0.22	2.67
Parents	0.67	0.01	0.11	0.00
Siblings	0.33	0.00	0.00	0.00
Friends	2.67	0.79	0.33	2.87
(Heritage cultural) group	0.17	0.19	0.00	0.07
Self	1.17	0.19	0.11	0.07
Place	0.17	0.00	0.00	0.07
Teachers	0.33	0.00	0.00	0.00
Humanity	0.67	0.02	0.00	0.03
Others	2.50	0.11	2.11	0.23

**Table B15***Autonomy clusters: German-hyphenated self-identifiers*

Code	German-hyphenated self-identifiers (N = 127)
	Cluster 1: moderate autonomy (N = 127)
<b>Autonomy</b>	
Freedom	0.18
Independence/ independent self	0.09
Individualism	1.56
Intrinsic motivation	0.65
Parent-child conflict	0.03
Purpose/Growth	0.46
Separation parents	0.01
Volition	0.24
Positive affect	0.31
Negative affect	0.02
Source of autonomy	
Family	0.33
Parents	0.03
Friends	0.51
(Heritage cultural) group	0.02
Self	1.72
Place	0.02
Teacher	0.01
Others	0.06

**Table B16***Relatedness clusters: German-hyphenated self-identifiers*

Code	German-hyphenated self-identifiers (N = 127)				
	Cluster 1: high relatedness (N = 24)	Cluster 2: very high relatedness (N = 5)	Cluster 3: extrinsic collectivism (N = 22)	Cluster 4: belonging to family & friends (N = 53)	Cluster 5: no relatedness (N = 23)
<b>Relatedness</b>					
Acceptance	0.00	0.60	0.00	0.00	0.00
Belonging	1.79	2.60	0.64	0.92	0.13
Cohesiveness	0.00	0.40	0.00	0.11	0.00
Collectivism/Community	1.75	1.80	1.05	0.70	0.09
Cooperation	0.00	0.20	0.05	0.02	0.00
Dependence	0.21	0.20	0.09	0.26	0.04
Harmony	0.04	0.40	0.00	0.02	0.00
Interdependent self	0.38	0.40	0.14	0.23	0.04
Obligation. duty. extrinsic motivation	0.08	0.20	1.23	0.00	0.00
Rituals	0.25	0.20	0.09	0.15	0.00
Social identification	0.00	0.40	0.05	0.04	0.04
Support	0.88	1.80	0.45	0.66	0.00
Positive affect	1.42	0.20	0.27	0.38	0.00
Negative affect	0.04	0.60	0.18	0.06	0.00
<b>Source of relatedness</b>					
Family	3.00	3.00	0.91	1.21	0.09
Parents	0.08	1.20	0.05	0.09	0.00
Siblings	0.04	0.40	0.00	0.02	0.00
Friends	2.79	2.00	0.73	1.17	0.04
(Heritage cultural) group	0.08	0.80	0.14	0.06	0.09
Self	0.00	0.40	0.41	0.08	0.09
Place	0.00	0.40	0.05	0.02	0.00
Teachers	0.00	0.00	0.05	0.02	0.00
Humanity	0.04	0.20	0.23	0.04	0.00
Others	0.42	0.20	0.95	0.21	0.04

**Table B17***Autonomy clusters: Non-German self-identifiers*

Code	Non-German self-identifiers ( <i>N</i> = 92)				
	Cluster 1: high autonomy means happiness ( <i>n</i> = 8)	Cluster 2: high autonomy means deciding for yourself ( <i>n</i> = 5)	Cluster 3: moderate individualism ( <i>n</i> = 30)	Cluster 4: moderate autonomy means deciding for yourself ( <i>n</i> = 5)	Cluster 5: low autonomy ( <i>n</i> = 44)
<b>Autonomy</b>					
Freedom	0.00	1.40	0.07	1.00	0.05
Independence/ independent self	0.00	2.40	0.07	1.00	0.05
Individualism	3.63	0.60	1.87	0.00	0.55
Intrinsic motivation	2.00	0.40	0.53	1.60	0.27
Parent-child conflict	0.00	0.00	0.00	0.00	0.00
Purpose/Growth	0.50	0.40	0.27	0.60	0.16
Separation parents	0.00	0.60	0.00	0.00	0.02
Volition	0.25	1.20	0.17	1.00	0.07
Positive affect	0.38	0.60	0.03	0.40	0.07
Negative affect	0.00	0.00	0.00	0.00	0.00
<b>Source of autonomy</b>					
group					
Family	0.13	0.00	0.40	0.00	0.07
Parents	0.00	0.60	0.00	0.00	0.05
Friends	0.38	0.00	0.60	0.20	0.20
(Heritage cultural)	0.00	0.00	0.00	0.00	0.05
Self	4.00	3.80	1.57	1.60	0.48
Place	0.00	0.20	0.03	0.00	0.02
Teacher	0.00	0.00	0.00	0.00	0.00
Others	0.00	0.80	0.00	0.00	0.11

**Table B18***Relatedness clusters: Non-German self-identifiers*

Code	Non-German self-identifiers ( <i>N</i> = 92)			
	Cluster 1: low relatedness ( <i>n</i> = 51)	Cluster 2: high relatedness ( <i>n</i> = 7)	Cluster 3: moderate relatedness with a focus on belonging ( <i>n</i> = 25)	Cluster 4: moderate relatedness with a focus on self ( <i>n</i> = 9)
<b>Relatedness</b>				
Acceptance	0.00	0.14	0.00	0.00
Belonging	0.90	0.86	1.48	0.67
Cohesiveness	0.00	0.14	0.08	0.00
Collectivism/Community	0.69	3.29	0.48	0.78
Cooperation	0.00	0.00	0.04	0.11
Dependence	0.29	0.29	0.36	0.11
Harmony	0.02	0.29	0.00	0.00
Interdependent self	0.22	0.14	0.24	0.33
Obligation. duty. extrinsic motivation	0.22	1.86	0.08	0.78
Rituals	0.14	0.57	0.16	0.33
Social identification	0.00	0.14	0.00	0.33
Support	0.61	0.57	0.60	0.44
Positive affect	0.00	0.43	1.44	0.00
Negative affect	0.06	0.29	0.04	0.00
<b>Source of relatedness</b>				
Family	1.16	2.43	1.60	0.89
Parents	0.12	0.14	0.20	0.11
Siblings	0.04	0.00	0.00	0.00
Friends	0.84	1.43	1.24	0.44
(Heritage cultural) group	0.12	0.00	0.16	0.67
Self	0.00	0.00	0.00	1.11
Place	0.00	0.29	0.00	0.00
Teachers	0.00	0.14	0.00	0.00
Humanity	0.02	0.00	0.00	0.00
Others	0.29	2.14	0.08	0.11

**Table B19***Descriptives national and cultural identification by self-id and gender*

	National identification			Heritage cultural identification		
	N	Range	Mean (SD)	N	Range	Mean (SD)
Across all groups	358	1-4	2.79(0.69)	318	1-4	3.49(0.61)
German ID	143	1-4	3.04(0.60)	110	1.17-4	3.32(0.62)
Female	66	1-4	2.93(0.63)	51	1.17-4	3.24(0.64)
Male	77	1.75-4	3.13(0.55)	59	1.67-4	3.39(0.59)
German-hyphenated	125	1-4	2.71(0.69)	119	1-4	3.47(0.65)
ID						
Female	74	1-3.83	2.72(0.69)	70	1-4	3.47(0.63)
Male	51	1-4	2.71(0.69)	49	1-4	3.47(0.68)
Non-German ID	90	1-4	2.49(0.68)	89	1-4	3.74(0.46)
Female	42	1-4	2.57(0.73)	42	2.25-4	3.74(0.40)
Male	48	1.17-4	2.43(0.63)	47	1-4	3.74(0.51)

**Table B20**  
*Prior for Regressions*

Self-identification	Clusters	Predictor	Prior
German-only self-identifiers	Autonomy clusters	Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
		Cluster 1: high autonomy <sup>1</sup>	student_t(3, .3, .5)
		Cluster 2: low autonomy <sup>1</sup>	student_t(3, .3, .5)
	Relatedness clusters	Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
		Cluster 1: high relatedness <sup>2</sup>	student_t(3, .3, .5)
		Cluster 3: collectivistic relatedness <sup>2</sup>	student_t(3, .3, .5)
		Cluster 4: moderate relatedness <sup>2</sup>	student_t(3, .3, .5)
German-hyphenated self-identifiers	Autonomy clusters <sup>3</sup>	Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
	Relatedness clusters	Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
		Cluster 1: high relatedness <sup>4</sup>	student_t(3, .3, .5)
		Cluster 2: very high relatedness <sup>4</sup>	student_t(3, .3, .5)
		Cluster 3: extrinsic collectivism <sup>4</sup>	student_t(3, .3, .5)
		Cluster 4: belonging to family & friends <sup>4</sup>	student_t(3, .3, .5)
Non-German self-identifiers	Autonomy clusters	Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
		Cluster 1: high autonomy means happiness <sup>5</sup>	student_t(3, .3, .5)
		Cluster 2: high autonomy means deciding for yourself <sup>5</sup>	student_t(3, .3, .5)
	Relatedness clusters	Cluster 3: moderate individualism <sup>5</sup>	student_t(3, .3, .5)
		Cluster 4: moderate autonomy means deciding for yourself <sup>5</sup>	student_t(3, .3, .5)
		Age	student_t(3, 0, .5)
		Gender	student_t(3, 0, .5)
		Cluster 2: high relatedness <sup>6</sup>	student_t(3, .3, .5)
		Cluster 3: moderate relatedness with a focus on belonging <sup>6</sup>	student_t(3, .3, .5)
Cluster 4: moderate relatedness with a focus on self <sup>6</sup>	student_t(3, .3, .5)		

*Note.* The same predictors and priors are regressed on both national and heritage cultural identity commitment separately. Priors were selected based on theory, assuming that there would be differences in identity commitment based on autonomy and relatedness cluster. <sup>1</sup>Cluster 3: no autonomy is the reference category. <sup>2</sup>Cluster 2: low relatedness is the reference category. <sup>3</sup>Only one autonomy cluster emerged for German-hyphenated self-identifiers. Therefore no autonomy clusters were regressed on national or Heritage Cultural identity commitment. <sup>4</sup>Cluster 5: no relatedness is the reference category. <sup>5</sup>Cluster 5: low autonomy is the reference category. <sup>6</sup>Cluster 1: low relatedness is the reference category.

**Table B21***Regressions: Autonomy clusters and identity commitment*

<b>Regressions: Autonomy Clusters</b>	<b>Posterior estimate</b>	<b>Posterior SE</b>	<b>Credible interval</b>
<b>German-only self-identifiers (n = 145)</b>			
Heritage Cultural Identity Commitment			
Age	.06	0.10	[-.13 ; .25]
Sex	-.06	0.11	[-.28 ; .15]
Cluster 1: high autonomy <sup>1</sup> (n = 49)	.03	0.17	[-.30 ; .36]
Cluster 2: low autonomy <sup>1</sup> (n = 77)	<b>.38</b>	0.15	[.08 ; .68]
National Identity Commitment			
Age	.00	0.09	[-.17 ; .17]
Sex	-.14	0.10	[-.33 ; .05]
Cluster 1: high autonomy <sup>1</sup> (n = 49)	-.12	0.15	[-.42 ; .18]
Cluster 2: low autonomy <sup>1</sup> (n = 77)	.09	0.14	[-.20 ; .36]
<b>German-hyphenated self-identifiers<sup>2</sup> (n = 127)</b>			
Heritage Cultural Identity Commitment			
Age	-.06	0.06	[-.19 ; .07]
Sex	.01	0.12	[-.22 ; .24]
National Identity Commitment			
Age	-.01	0.07	[-.14 ; .13]
Sex	.02	0.12	[-.23 ; .26]
<b>Non-German self-identifiers (n = 92)</b>			
Heritage Cultural Identity Commitment			
Age	-.08	0.08	[-.24 ; .09]
Sex	-.03	0.10	[-.22 ; .16]
Cluster 1: high autonomy means happiness <sup>3</sup> (n = 8)	.18	0.17	[-.17 ; .51]
Cluster 2: high autonomy means deciding for yourself <sup>3</sup> (n = 5)	-.04	0.21	[-.46 ; .38]
Cluster 3: moderate individualism <sup>3</sup> (n = 30)	-.17	0.11	[-.39 ; .04]



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Cluster 4: moderate autonomy means deciding for yourself <sup>3</sup> ( <i>n</i> = 5)	.03	0.20	[-.37 ; .42]
National Identity Commitment			
Age	.03	0.12	[-.21 ; .27]
Sex	.12	0.14	[-.14 ; .39]
Cluster 1: high autonomy means happiness <sup>3</sup> ( <i>n</i> = 8)	.17	0.23	[-.29 ; .62]
Cluster 2: high autonomy means deciding for yourself <sup>3</sup> ( <i>n</i> = 5)	.32	0.28	[-.23 ; .86]
Cluster 3: moderate individualism <sup>3</sup> ( <i>n</i> = 30)	.04	0.15	[-.26 ; .34]
Cluster 4: moderate autonomy means deciding for yourself <sup>3</sup> ( <i>n</i> = 5)	<b>-.57</b>	0.32	[-1.20 ; .03]

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*Note.* Bolded numbers indicate that 0 is not contained in the credibility interval, meaning it is likely there is an effect. <sup>1</sup>Cluster 3: no autonomy is the reference category (*n* = 19). <sup>2</sup>Only one autonomy cluster emerged for German-hyphenated self-identifiers. therefore no autonomy clusters were regressed on national or Heritage Cultural identity commitment. <sup>3</sup>Cluster 5: low autonomy is the reference category (*n* = 44).

**Table B22***Regressions: Relatedness clusters and identity commitment*

<b>Regressions: Relatedness Clusters</b>	<b>Posterior estimate</b>	<b>Posterior SE</b>	<b>Credible interval</b>
<b>German-only self-identifiers</b>			
Heritage Cultural Identity Commitment			
Age	.10	0.10	[-.11 ; .30]
Sex	-.22	0.13	[-.47 ; .04]
Cluster 1: high relatedness <sup>1</sup> ( <i>n</i> = 6)	.08	0.26	[-.45 ; .58]
Cluster 3: collectivistic relatedness <sup>1</sup> ( <i>n</i> = 9)	-.08	0.21	[-.49 ; .32]
Cluster 4: moderate relatedness <sup>1</sup> ( <i>n</i> = 30)	.28	0.16	[-.03 ; .60]
National Identity Commitment			
Age	.04	0.08	[-.12 ; .21]
Sex	<b>-.25</b>	0.11	[-.46 ; -.03]
Cluster 1: high relatedness <sup>1</sup> ( <i>n</i> = 6)	.18	0.22	[-.26 ; .60]
Cluster 3: collectivistic relatedness <sup>1</sup> ( <i>n</i> = 9)	.05	0.20	[-.34 ; .44]
Cluster 4: moderate relatedness <sup>1</sup> ( <i>n</i> = 30)	.18	0.13	[-.08 ; .43]
<b>German-hyphenated self-identifiers</b>			
Heritage Cultural Identity Commitment			
Age	-.06	0.07	[-.19 ; .06]
Sex	.00	0.12	[-.24 ; .25]
Cluster 1: high relatedness <sup>2</sup> ( <i>n</i> = 24)	.21	0.17	[-.12 ; .55]
Cluster 2: very high relatedness <sup>2</sup> ( <i>n</i> = 5)	.48	0.27	[-.03 ; 1.04]
Cluster 3: extrinsic collectivism <sup>2</sup> ( <i>n</i> = 22)	.32	0.18	[-.04 ; .68]
Cluster 4: belonging to family & friends <sup>2</sup> ( <i>n</i> = 53)	.28	0.15	[-.01 ; .57]
National Identity Commitment			
Age	-.02	0.07	[-.16 ; .12]
Sex	.03	0.13	[-.23 ; .28]
Cluster 1: high relatedness <sup>2</sup> ( <i>n</i> = 24)	-.21	0.19	[-.60 ; .17]
Cluster 2: very high relatedness <sup>2</sup> ( <i>n</i> = 5)	.40	0.28	[-.14 ; .96]
Cluster 3: extrinsic collectivism <sup>2</sup> ( <i>n</i> = 22)	.10	0.20	[-.29 ; .48]

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Cluster 4: belonging to family & friends <sup>2</sup> ( <i>n</i> = 53)	-0.09	0.16	[-.41 ; .23]
<b>Non-German self-identifiers</b>			
Heritage Cultural Identity Commitment			
Age	-.11	0.08	[-.28 ; .05]
Sex	.05	0.10	[-.15 ; .24]
Cluster 2: high relatedness <sup>3</sup> ( <i>n</i> = 7)	-.30	0.19	[-.67 ; .08]
Cluster 3: moderate relatedness with a focus on belonging <sup>3</sup> ( <i>n</i> = 25)	-.19	0.11	[-.40 ; .03]
Cluster 4: moderate relatedness with a focus on self <sup>3</sup> ( <i>n</i> = 9)	-.01	0.17	[-.34 ; .31]
National Identity Commitment			
Age	.03	.12	[-.21 ; .26]
Sex	.11	.15	[-.17 ; .42]
Cluster 2: high relatedness <sup>3</sup> ( <i>n</i> = 7)	.05	.27	[-.50 ; .57]
Cluster 3: moderate relatedness with a focus on belonging <sup>3</sup> ( <i>n</i> = 25)	.01	.17	[-.32 ; .33]
Cluster 4: moderate relatedness with a focus on self <sup>3</sup> ( <i>n</i> = 9)	-.07	.24	[-.55 ; .40]

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*Note.* Bolded numbers indicate that 0 is not contained in the credibility interval, meaning it is likely there is an effect. <sup>1</sup>Cluster 2: low relatedness is the reference category. <sup>2</sup>Cluster 5: no relatedness is the reference category. <sup>3</sup>Cluster 1: low relatedness is the reference category.

**4. Study 3: Promoting Adolescents' Heritage Cultural Identity Development in the Context of the Identity Project in Germany: The Role of Autonomy and Relatedness Basic Needs Satisfaction**

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### **Abstract**

Varying effects of the Identity Project, an 8-week school intervention, on heritage cultural identity development necessitate a closer look at factors influencing the intervention's efficacy. Using latent profile cluster analysis and multinomial logistic regressions, this longitudinal study examined how need satisfaction (autonomy and relatedness) at school (1) related to heritage cultural identity development trajectories in  $N = 198$  adolescents ( $M_{\text{age}} = 12.86$  years,  $SD_{\text{age}} = .75$ , 52% female) in Germany, and (2) moderated effects of the Identity Project. The intervention showed no main effect, and need satisfaction showed mixed effects on identity development trajectories. Yet, teacher-student relationships facilitated intervention effects on identity development trajectories, emphasizing the importance of the relational context when designing interventions to promote heritage cultural identity development.

## 4.1 Introduction

Ethnic-racial or heritage cultural identity<sup>16</sup> reflects the attitudes and beliefs individuals have about their ethnic, racial and heritage cultural group memberships, as well as the processes by which individuals explore, develop, and maintain this facet of their identity over time (Umaña-Taylor et al., 2014). The search for ethnic-racial identity is a critical developmental task in adolescence (Erikson, 1968). Therefore, the *Identity Project* (Umaña-Taylor & Douglass, 2017), an 8-week school intervention, was designed to support adolescents in their heritage cultural identity development. As the effects of the Identity Project on ethnic-racial identity development have shown promising but varying results, further investigation into factors influencing the efficacy of the intervention, specifically the context in which it is implemented (Walton & Yeager, 2020), is essential. The current study focuses on the pivotal role autonomy and relatedness play in the process of identity development, as individuals' social environment can either foster or hinder the development of specific identity facets (Erikson, 1968; Eccles & Roeser, 2011; Ryan & Deci, 2017). Therefore, the aim of this study is to investigate how adolescents' experiences of autonomy and relatedness within the school context facilitate the development of heritage cultural identity in adolescents, and how it may enhance the efficacy of the Identity Project intervention.

This study focuses on three key aspects of ethnic-racial identity development: *exploration* (i.e., actively questioning potential identity alternatives), *resolution* (i.e., a sense of clarity regarding the personal meaning of their identity), and *affirmation* (i.e., the extent to

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<sup>16</sup> Taking into account socio-cultural variations in the understanding of ethnicity, race, and culture, "heritage cultural identity" was used when discussing studies in Europe and "ethnic-racial identity" when referring to studies in the United States. Heritage cultural identity as measured in most studies refers to the familial background of a person, and can be based on national (e.g., German), regional (e.g., Bavarian), ethnic (e.g., Sorbian), and/or religious (e.g., Muslim) affiliation(s) most relevant to the self-concept of individuals. In the same line, "immigrant descent" was used when describing minoritized students in Europe, and "ethnic-racial minoritized" when describing minoritized students in the United States, to reflect that in Europe, individuals who are viewed as immigrants (based on phenotype, culture or religion) are structurally disadvantaged, while in the United States ethnicity and race contribute to the marginalization of certain groups.

which individuals feel positively about their identity) (Umaña-Taylor et al., 2004), as they have all persistently demonstrated positive associations with socioemotional adjustment in adolescents (Rivas-Drake et al., 2014a). Going beyond research on ethnic-racial and heritage cultural identity that often focuses on average levels of identity scores, the current study seeks to identify trajectories of ethnic-racial identity development in adolescents. It specifically examines how the satisfaction of the basic needs for autonomy and relatedness<sup>17</sup> (Self-Determination Theory; Ryan & Deci, 2017) within the school context may influence the developmental paths of exploration, resolution, and affirmation in heritage cultural identity. Previous research has shown that autonomy and relatedness satisfaction facilitate the development of an (vocational) identity that better represents adolescents' inner values and wishes (Soenens & Vansteenkiste, 2023), as basic need satisfaction provides them with the energy necessary to engage in identity development related efforts (Luyckx et al., 2009).

Therefore, this study posits that satisfaction of the basic needs for autonomy, as measured by perceived autonomy support of teachers and intrinsic motivation, and relatedness, as measured by perceived relatedness support of teachers and peer belonging, also promotes heritage cultural identity development processes, and may play an important role in promoting the efficacy of the Identity Project intervention. By capturing trajectories of heritage cultural identity development, testing for effects on affirmation as an additional facet of heritage cultural identity development not investigated in most studies on the Identity Project (for an exception see Abdullahi et al., 2024), and exploring the potential interaction between need satisfaction in the school context and the Identity Project intervention, the current study can offer a deeper understanding of the dynamics involved in heritage cultural

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<sup>17</sup> Self-Determination Theory posits that next to autonomy and relatedness, competence is a basic need, referring to feeling capable and effective in various endeavors. While competence is undoubtedly an important aspect of individuals' development, and all three needs have to be satisfied in order to have good psychological health and personal well-being (Ryan & Deci, 2017), due to extensive research emphasizing the unique and critical roles autonomy and relatedness play in adolescents' identity development (Soenens & Vansteenkiste, 2023), the current study prioritizes these needs over competence.

identity development and provide valuable insights into effective strategies for supporting adolescents on their journey of heritage cultural identity development.

#### ***4.1.1 Ethnic-racial identity development in adolescence***

Exploration, resolution and affirmation are important facets of ethnic-racial identity development, as they have been consistently found to be related to better well-being in adolescents. Ethnic-racial identity exploration has been associated with higher self-esteem and less depressive symptoms (Rivas-Drake et al., 2014a), and research further shows that adolescents engage in the most favorable form of ethnic-racial identity development when choosing an identity via meaningful exploration, as that may lead to ethnic-racial identity resolution (Umaña-Taylor et al., 2018). Identity resolution allows individuals to achieve a secure identity in which they experience wholeness and a sense of continuity between their past, current and future self, and has many psychological benefits, such as better well-being and functioning, and less psychological distress (Umaña-Taylor & Douglass, 2017). Ethnic-racial identity affirmation, too, has been consistently related to positive psychological functioning and mental health among adolescents (Rivas-Drake et al., 2014a).

Research has shown that changes in ethnic-racial or heritage cultural identity over time, specifically distinct trajectory patterns, offer a more comprehensive understanding of identity processes than solely focusing on average levels of identity scores. This research often identifies between two and four ethnic-racial or heritage cultural identity trajectories, with some common patterns including low, medium, and high trajectories (e.g., Chavous et al., 2018; Juang et al., 2023a; Spiegler et al., 2018; 2019). However, these trajectories can differ in terms of direction (e.g., stable, increasing or decreasing), and these differences are influenced by several factors such as the age group being studied, the time intervals between assessments, and external factors such as experiences of discrimination, friendships, and the school climate. As the school environment is a significant context for the development of identities (Schachner et al., 2016), it is crucial to pinpoint the factors contributing to ethnic-



racial identity development within the school environment. This study focuses on one such condition: the satisfaction of basic psychological needs, which may also serve as a moderating factor in interventions aimed at enhancing ethnic-racial identity development.

#### ***4.1.2 Basic need satisfaction and identity development***

Self-Determination Theory (Ryan & Deci, 2017) and Erikson's identity framework (1968) emphasize the significance of the basic psychological needs for autonomy and relatedness as a key concept for identity development across various cultures (Vansteenkiste et al., 2020). Autonomy refers to the need to engage in behavior willingly, while relatedness (i.e., belonging) pertains to feeling connected to others. When the need for autonomy is satisfied, individuals feel a sense of psychological freedom, while the satisfaction of relatedness results in individuals feeling supported by a social network (Vansteenkiste et al., 2020). According to Self-Determination Theory (Ryan & Deci, 2017) the basic psychological needs for autonomy and relatedness are important for identity development because exploring, gathering and comparing multiple potential identity options requires a lot of effort, as does the internalization and acceptance of a chosen identity aspect. The energy for these processes may be provided by the satisfaction of the basic needs for autonomy and relatedness.

Eccles and Roeser (2011) specifically emphasize the role of schools in meeting the needs for autonomy and relatedness in adolescence (stage-environment fit). When schools support students' needs, e.g., prioritize adolescents' autonomy and choice in their learning and encourage their social connections with peers and teachers, this is more likely to foster positive developmental outcomes in adolescents, such as identity development. The satisfaction of adolescents' basic psychological needs by their environment is of particular importance, due to the many important transitions and changes that occur during this stage of development (Laporte et al., 2021).

Empirical research underlines the importance of autonomy and relatedness satisfaction as energizing processes within vocational identity development, which drive individuals to proactively explore different identity options followed by choosing certain identities (Luyckx et al., 2009). When individuals can act autonomously, i.e., have the freedom to align their actions with their own interests and values, they are more inclined to explore identity options and evaluate identity-relevant information. When the need for relatedness is satisfied and individuals feel they are being supported by a social network, this likely provides individuals with the necessary feelings of psychological security needed for them to explore their environment (i.e., exploration, Soenens & Vansteenkiste, 2023). Moreover, the satisfaction of relatedness is believed to be crucial for individuals to understand what their chosen identities mean to them (i.e., resolution), and when important others support individuals' chosen identities, it allows them to become more strongly convinced of their chosen identity (i.e., affirmation, Soenens & Vansteenkiste, 2023). So, feeling autonomous and being connected to and supported by a social network helps individuals in exploring, resolving and affirming their identity.

The present study posits that the relationship between autonomy and relatedness satisfaction and vocational identity development will transfer to heritage cultural identity development processes for adolescents. Autonomy may be satisfied within the school context both by perceived autonomy support of teachers and intrinsic academic motivation. Relatedness within the school context may be satisfied by relationships with teachers (perceived teacher support of relatedness) and peers (peer belonging). If adolescents' basic psychological needs are satisfied in the school context, this may provide them with the necessary energy and safety needed to invest in identity-related efforts and make them more likely to explore the different heritage cultural identity options at hand (exploration), to have a clearer sense of the personal meaning of their heritage cultural identity (resolution), and feel more positively about their heritage cultural identity (affirmation) over time, resulting in

higher or more increasing heritage cultural identity trajectories. As such, the study expects that this need satisfaction will moderate the effect of the Identity Project intervention on these trajectories, influencing the way in which the intervention contributes to the development of heritage cultural identity in adolescents.

**4.1.2.1 Autonomy satisfaction and identity development.** Various theoretical and conceptual works underline the importance of autonomous teaching practices and teacher support of autonomy for identity development processes (Erikson, 1968; Eccles & Roeser, 2011; Flum & Kaplan, 2012). Namely, children and adolescents encounter a variety of school experiences in which they build their identity by learning about themselves and their interests (La Guardia, 2009). Two separate intervention studies by Sinai et al. (2012) and Faircloth (2012), both designed to trigger global identity exploration (i.e., who one is as a person, across life domains) through educational activities, show that when teachers include content that matters to adolescents and relate it to adolescents' personal experiences (i.e., autonomous teaching practices), rather than teaching in an over-structured manner focusing only on academic studies (i.e., controlling teaching practices), adolescents engage in more global identity exploration.

Additionally, much research with older adolescents and young adults has investigated how academic intrinsic motivation, a crucial facet of autonomy involving pursuing activities aligned with individuals' interests, values, and goals, relates to global and vocational identity development. Adolescents with a high level of intrinsic academic motivation are more agentic, and may use positive exploration to verify the fit of different options with their inner identity (La Guardia, 2009). Cross-sectional and longitudinal empirical studies investigating the relationship between adolescents (academic) intrinsic motivation and vocational identity also show that intrinsic motivation encourages adolescents to commit to particular identity options (i.e., resolution), and to identify more strongly with these chosen identities (i.e., affirmation, Cannard et al., 2016; Luyckx et al., 2017). Therefore, it is expected that higher

autonomy satisfaction in the school context, as conceptualized by perceived teacher support of autonomy and intrinsic motivation, will be associated with higher or more increasing heritage cultural identity trajectories, and enhance the effect of the Identity Project intervention on these trajectories.

**4.1.2.2 Relatedness satisfaction and identity development.** As part of their school experiences, adolescents develop aspects of their identity while encountering how they themselves and different aspects of their identity are valued by important others such as parents, teachers or peers (La Guardia, 2009). Teachers' relationships with adolescents, and their responses to the (ethnic-racial/cultural) groups adolescents belong to or the various roles adolescents experiment with can thus promote or impede basic need satisfaction and, hence, the process of identity development (Soenens & Vansteenkiste, 2023). Support from teachers may fulfill adolescents' need for relatedness and provide the energy necessary to drive an individual's identity development. The importance of teacher relatedness is also highlighted in the two intervention studies by Sinai et al. (2012) and Faircloth (2012), in which a safe environment was found to be a requirement to motivate adolescents to engage constructively in both academic learning and global identity exploration. Thus, the current study assumes that adolescents who feel supported by their teachers, fulfilling their need for relatedness, feel safe and have the energy to engage in the heritage cultural identity development process.

Other studies focus on the growing importance of peers on identity development during adolescence, showing that feelings of belonging to peers are related to positive identity development, such as better ability to imagine themselves in the future or a more cohesive self-concept. Only few studies have focused on the link between adolescents' relationships with their peers and the identity development processes (Rageliené, 2016). The limited research available has found that good peer relationships were related to more exploration, resolution and affirmation (see review by Rageliené, 2016). The current study argues that higher relatedness satisfaction of adolescents in the school context, as conceptualized by

perceived teacher support of relatedness and peer belonging, will therefore be associated with higher or more increasing heritage cultural identity exploration, resolution and affirmation trajectories, and promote the effect of the Identity Project intervention on these trajectories.

#### ***4.1.3 Basic need satisfaction and the Identity Project***

The Identity Project is a school-based intervention comprised of eight lesson plans (for details see Umaña-Taylor & Douglass, 2017), that focuses on ethnic-racial or heritage cultural identity exploration in adolescents. U.S. longitudinal studies in mid-adolescence demonstrated that the intervention started a cascading process wherein adolescents explored their ethnic-racial identity, gained a better understanding of their ethnic-racial and global identity (resolution), which in turn was linked to positive well-being outcomes (socio-emotional and academic adjustment, outgroup attitudes) one year later (Umaña-Taylor et al., 2018). As the Identity Project allows adolescents to engage in meaningful exploration of their ethnic-racial identity, it may not only foster a clearer understanding of their identity, but could also contribute to a more positive perception of their ethnic-racial identity (affirmation, see Abdullahi et al., 2024). The results of the Identity Project support findings of previous cross-sectional research that ethnic-racial identity exploration is a key mechanism in promoting positive identity-related and well-being outcomes in adolescents (Umaña-Taylor & Rivas-Drake, 2021).

Since then, the Identity Project has been adapted to contexts outside of the U.S. (for a detailed review, see Juang et al., 2022) and has been implemented in schools across North America and Europe with encouraging but differing effects. Results show varying effects on ethnic-racial or heritage cultural identity exploration (Abdullahi et al., 2024; Juang et al., 2020), and not all studies observe cascading effects of exploration on identity resolution (Ceccon et al., 2023; Schachner et al., 2024a). While most studies investigating the effects of the Identity Project have focused on changes in average levels of identity scores, recent studies (Ceccon et al., 2024) have started to examine the effects of the Identity Project on

identity trajectories, shedding light on the intervention's relation to different patterns in heritage cultural identity development.

As the specific conditions in which interventions are carried out play a crucial role (Walton & Yeager, 2020), efficacy of the Identity Project may vary by both contextual and individual factors. The classroom cultural diversity climate (Schachner et al., 2024a), family ethnic socialization (Ceccon et al., 2024; Sladek et al., 2021), and the ability to register, process and respond to stimuli (environmental sensitivity; Ceccon et al., 2023) play a significant role in shaping adolescents' experiences in the Identity Project. Building on the theoretical frameworks highlighting the importance of basic need satisfaction in the school context (Eccles & Roeser, 2011; Erikson, 1968; Ryan & Deci, 2017) and empirical support demonstrating the moderating role of autonomy and relatedness in interventions on identity development processes (Faircloth, 2012; Sinai et al., 2012), the current study explores how adolescents' experiences of autonomy (i.e., perceived teacher support of autonomy, intrinsic motivation) and relatedness (i.e., perceived teacher support of relatedness, peer belonging) interacts with the effect of the Identity Project on heritage cultural identity trajectories of adolescents.

As immigrant descent has been highlighted as an important variable that may shape adolescents' experiences in the Identity Project (Ceccon et al., 2023; 2024; Sladek et al., 2021), the study will take into account direct and moderating effects of immigrant descent when exploring how adolescents' experiences of autonomy and relatedness are associated to and interact with the intervention's effect on heritage cultural identity trajectories. This is particularly pertinent as ethnic-racial or heritage cultural identity plays a more pivotal role for ethnic-racial minoritized adolescents, as they navigate acculturation processes and develop their identity while being confronted with negative stereotypes about their group as well as discrimination (Schachner et al., 2018; Umaña-Taylor & Rivas-Drake, 2021).

#### ***4.1.4 Current Study***

Considering the success of interventions like the Identity Project relies not only on the quality of the intervention itself but also on the context in which it is implemented, it is crucial to understand the conditions that optimize the Identity Project's efficacy. If adolescents' basic psychological needs for autonomy and relatedness are satisfied in the school context, this may provide them with the necessary energy and safety needed to invest in identity-related efforts and make them more likely to explore, resolve, and affirm their heritage cultural identity. This sets up the potential for differential trajectories of heritage cultural identity development for adolescents participating in the Identity Project, dependent on their basic need satisfaction over the course of the project.

We expect to find between two and four distinct heritage cultural identity exploration, resolution and affirmation trajectories for adolescents across the three time points (research question 1). Next, increased autonomy satisfaction across the three time points, as measured by perceived teacher support of autonomy and intrinsic motivation, and increased relatedness satisfaction across the three time points, as measured by perceived teacher support of relatedness and belongingness to peers, will predict higher or more increasing heritage cultural identity exploration, resolution and affirmation trajectories (research question 2). The intervention condition of the Identity Project, as well as gender, age and socioeconomic status (SES) of adolescents will be controlled for (as is common practice in ethnic-racial identity development studies, e.g., Umaña-Taylor et al., 2018). Further, it is expected that basic need satisfaction will moderate the effect of the Identity Project intervention, resulting in higher or more increasing heritage cultural identity trajectories when the Identity Project is combined with basic need satisfaction (research question 3). Recognizing the increased salience of heritage cultural identity for adolescents of immigrant descent and given evidence that immigrant descent may have direct implications for identity development as well as moderate

effects of the Identity Project on identity development, immigrant descent will be considered as a covariate when investigating research questions 2 and 3.

## **4.2 Method**

### ***4.2.1 Participants and Procedure***

Participants were 386 7<sup>th</sup> graders ( $M_{\text{age}} = 13.04$  years,  $SD_{\text{age}} = .85$ , 46% female, 48% of immigrant descent) from five high schools in Halle (Saale) ( $n = 360$ ) and one high school in Berlin ( $n = 26$ ) in the school year 2021/22. 7<sup>th</sup> graders were approached as this school year marks the onset of an important transitional period for students in the federal state of Berlin (see Juang et al., 2020 for more detail). Employing a randomized controlled trial design at the classroom level, the study allocated nine classrooms to the intervention group, where they received the 8-week Identity Project intervention. A questionnaire was distributed in German to both groups one week before the Identity Project was implemented in the intervention group (pretest – T1), one week after the end of the intervention (post-test – T2), and seven weeks after the end of the intervention (follow-up – T3). The ten classrooms in the control group were offered to receive the intervention after the follow-up (T3); however, due to scheduling constraints on the schools' side, only four control classes opted to partake in the intervention.

Ethical approval was granted by the Berlin Education Senate and the State Board of Education (Landesschulamt) of Saxony-Anhalt. The study targeted schools with a notable percentage of non-German first language adolescents for potential participation. If schools agreed to participate, the Identity Project was presented to 7<sup>th</sup> grade parents at parent evenings, the informed consent form was shared, and any questions answered. As the Identity Project was taught as part of the regular curriculum, all adolescents in participating classes took part in the project; however, adolescents whose parents did not consent for the accompanying research study did not participate in the survey. Surveys were filled in during



90 min slots within regular class time. Adolescents were given small gifts (e.g., erasers or chocolate) for compensation.

#### **4.2.2 Measures**

Adolescents were asked about basic demographics including their gender, age, cultural self-identification, birthplace, and parents' birthplace. In line with previous studies (e.g., Schachner et al., 2016), adolescents who were born in Germany from German-born parents were coded as adolescents of non-immigrant descent, and adolescents who were born abroad or in Germany with at least one parent born abroad, were coded as adolescents of immigrant descent. SES was assessed using the family affluence scale (FAS II, see Currie et al., 2008; four items, e.g., "Does your family have a car?"). The scores of individual items were summed to generate a total score, ranging from 0 (indicating the lowest affluence) to 9 (indicating the highest affluence). The main variables are described below, with response scales ranging from 1 = *No, that is not true* to 4 = *Yes, that is true*.

**4.2.2.1 Satisfaction of the need for autonomy and relatedness.** Autonomy and relatedness satisfaction were measured with two scales each. For perceived autonomy and relatedness support by teachers the six items with the highest factor loadings in the validation study were selected for each of the respective subscales from the Teacher as Social Context Questionnaire (Belmont et al., 1992). Additionally, autonomy was measured by intrinsic learning motivation (five items, Müller et al., 2007), and relatedness was measured by peer belonging (three items, Skinner et al., 2009). Example items are "In my class my teacher listens to my ideas" (perceived autonomy support by teachers,  $\omega_{T1} = .52$ ,  $\omega_{T2} = .63$ ,  $\omega_{T3} = .68$ ), "I can count on my teacher when I need him or her" (perceived relatedness support by teachers,  $\omega_{T1} = .77$ ,  $\omega_{T2} = .78$ ,  $\omega_{T3} = .78$ ), "I work and study in the classroom, because I enjoy it" (intrinsic motivation,  $\omega_{T1} = .90$ ,  $\omega_{T2} = .89$ ,  $\omega_{T3} = .89$ ), and "When I am with my classmates, I feel accepted" (peer belonging,  $\omega_{T1} = .76$ ,  $\omega_{T2} = .83$ ,  $\omega_{T3} = .82$ ).

**4.2.2.2 Heritage cultural identity.** The measurement of heritage cultural identity, defined for participants as the cultural background of an individual's family, included three items each for exploration and resolution (Ethnic Identity Scale - Brief, Douglass & Umaña Taylor, 2015), and five items for heritage cultural identity affirmation (Leszczensky & Gräbs Santiago, 2015). To fit the scales of exploration and resolution to the German context, mentions of ethnicity were changed to mentions of heritage culture. Example items are "I have attended events that have helped me learn more about my heritage cultural group" (exploration,  $\omega_{T1} = .82$ ,  $\omega_{T2} = .89$ ,  $\omega_{T3} = .89$ ), "I know what my heritage culture means to me" (resolution,  $\omega_{T1} = .87$ ,  $\omega_{T2} = .87$ ,  $\omega_{T3} = .91$ ), and "I am happy about being part of my heritage cultural group" (affirmation,  $\omega_{T1} = .89$ ,  $\omega_{T2} = .92$ ,  $\omega_{T3} = .93$ ).

#### **4.2.3 Analytic procedure**

As reliable a priori estimates for all effect sizes associated with the research questions were not available, an exploratory, rather than a confirmatory, approach was used. All statistical analyses were conducted using the *R* statistical software (*R* Core Team, 2022). Pre-registered analyses, data, code of main analyses and supplemental materials are available at the Open Science Framework ([https://osf.io/jhcv7/?view\\_only=eeab43a3f692444996b170d579e68f6a](https://osf.io/jhcv7/?view_only=eeab43a3f692444996b170d579e68f6a)).

As data was collected during the COVID-19 pandemic, there are missing waves of data both on classroom and on individual level. Given the analysis employed to determine longitudinal latent clusters, as described in Fraley et al. (2012) and detailed below, traditional Full Information Maximum Likelihood (FIML) techniques for handling missing data were not applicable. Subsequently, utilizing list-wise deletion, participants who did not complete the control variables (age, gender, immigrant descent, SES), or who did not have data on at least one item value for every main study variable at all three time points were excluded from analyses. In a preliminary analysis, a logistic regression with the presence of missing data as the dependent variable (0 = adolescents who did not have data on at least one item value for

every main study variable at one or more time points, 1 = adolescents who completed all main study variables), and gender, age, SES, immigrant descent and the intervention group as independent variables was conducted.

In the main analyses, study variables were considered at all three time points to explore the dynamic interaction of basic need satisfaction and heritage cultural identity throughout the Identity Project. However, to avoid multicollinearity issues, in a first step factor analyses were performed for each of the following variables measured at the three time points: perceived autonomy support by teachers, intrinsic motivation, perceived relatedness support by teachers, and peer belonging. As one clear factor emerged for all variables in question, factor scores were extracted and included in the following analyses as independent variables instead of all three time points per autonomy/relatedness variable. This approach reduced the complexity of the model while still allowing us to account for basic need satisfaction at all three time points. This decision was rooted in the rationale that basic need satisfaction, both before and during the Identity Project, would be associated with heritage cultural identity trajectories. As the intervention was controlled for in the model, this helps ensure that potential confounding effects between basic need satisfaction and the intervention were considered.

In a next step, latent profile cluster analyses (*R mclust* package) were conducted to identify longitudinal trajectories of subjects on the dependent variables (i.e., heritage cultural identity exploration, resolution, and affirmation) across T1, T2 and T3. Latent profile cluster analysis was used to identify possibly meaningful sub-grouping of subjects to help better understand sample heterogeneity (Sterba, 2013). For each identity variable, the presence of one to five trajectories for each identity variable were tested. The inclusion of one cluster in the analysis acted as a baseline model assuming no distinct clusters in the data, and served as a reference point for assessing whether additional clusters significantly enhanced the model fit. On the other end of the spectrum, testing for five clusters ensured that the incorporation of

more clusters did not lead to a superior model fit than the commonly found two to four clusters, while at the same time preventing potential data overfitting by testing for more than five clusters. The most plausible number of trajectories was selected based on the Bayesian Information Criteria (BIC; Raftery, 1995).

To investigate whether satisfaction of autonomy and relatedness predicts trajectory membership on each of the three dependent variables, multinomial logistic regressions were run (*R nnet* package). Specifically, for each dependent variable a baseline multinomial logistic regression with the intervention condition, immigrant descent, and the factor scores measuring autonomy (perceived autonomy support by teachers & intrinsic motivation) and relatedness satisfaction (perceived relatedness support by teachers & peer belonging) as independent variables were run. All two-way interactions of autonomy and relatedness satisfaction with the main effect of intervention condition were considered, as well as three-way interactions of autonomy and relatedness satisfaction with intervention condition and immigrant descent. Furthermore, the model included the main effects of gender, age and SES as covariates.

Starting from each baseline model (i.e., one for each dependent variable), the best model was selected from observed data using a model selection approach via the *R* function *step* (*R stats* package) based on the AIC index (Sakamoto et al., 1986). Each best fitting model was evaluated using analysis of deviance (*R car* package) and Odds ratio (Cohen, 1988). Finally, significant interaction effects were interpreted through graphical representations of the trajectory membership probabilities estimated by the model. Detailed information regarding the selected trajectories and multinomial logistic regression models (i.e., descriptives, model parameters, Odds ratio, graphical representations) are available in the Appendix C.

**4.2.3.1 Sensitivity analyses.** At the multivariate level, to evaluate the presence of influential cases (i.e., cases that have a substantial impact on the estimated model parameters

and, consequently, on the interpretation of results), a sensitivity analysis was carried out for each best-fitting multinomial regression model (Hashimoto et al., 2020). For each multinomial regression model and for each case (i.e., observation) included in the model, the difference in log-likelihood between the full model and the model without the case was computed. Cases with a large absolute difference were identified as potential influential cases, and their impact on the model was assessed. If influential cases were found to have a large impact on the model, they were removed, and the differences reported.

### **4.3 Results**

#### ***4.3.1 Preliminary analyses***

A total of  $n = 188$  participants had to be excluded due to missing data. The final sample included  $N = 198$  adolescents (52% female, 41% of immigrant descent, 49% intervention group, 93% from Halle). A significant difference between the adolescents with and without missing data emerged only in terms of age ( $X^2(1, N = 343) = 11.64, p < 0.001$ ). Yet, this difference was relatively small in terms of magnitude, with adolescents in the missing data group having a mean age of 13.25 ( $SD = 0.93$ ), while the final sample without missing data had a mean age of 12.85 ( $SD = 0.75$ ). Nonetheless, this selection bias should be taken into account when interpreting results.

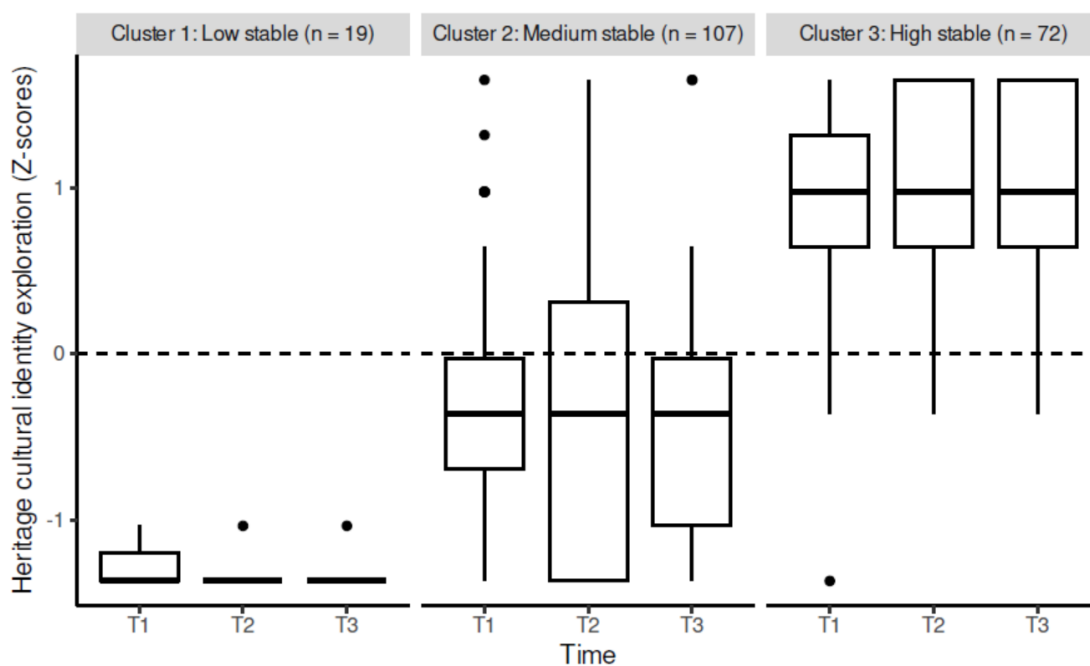
#### ***4.3.2 Heritage cultural identity trajectories***

In line with our expectations, between two and four differing heritage cultural identity exploration, resolution and affirmation trajectories for adolescents emerged across the three time points (research question 1). The best solution for heritage cultural identity exploration showed three trajectories (Figure 2): a low, stable heritage cultural identity exploration trajectory ( $n = 19$  adolescents), a medium, stable heritage cultural identity exploration trajectory ( $n = 107$  adolescents), and a high, stable heritage cultural identity exploration trajectory ( $n = 72$  adolescents). The best solution for heritage cultural identity resolution showed four trajectories (Figure 3): a trajectory of decrease of heritage cultural identity

resolution from T1 to T2, followed by a high increase in heritage cultural identity resolution at T3 ( $n = 12$  adolescents), a medium, stable heritage cultural identity resolution trajectory ( $n = 77$  adolescents), a low heritage cultural identity resolution trajectory, which decreases further at T3 ( $n = 35$  adolescents), and a high heritage cultural identity resolution trajectory, which increases further at T3 ( $n = 74$  adolescents). The best solution for heritage cultural identity affirmation showed two trajectories (Figure 4): a medium, stable heritage cultural identity affirmation trajectory ( $n = 159$  adolescents) and a high heritage cultural identity affirmation trajectory, with a slight increase from T1 to T2 ( $n = 39$  adolescents).

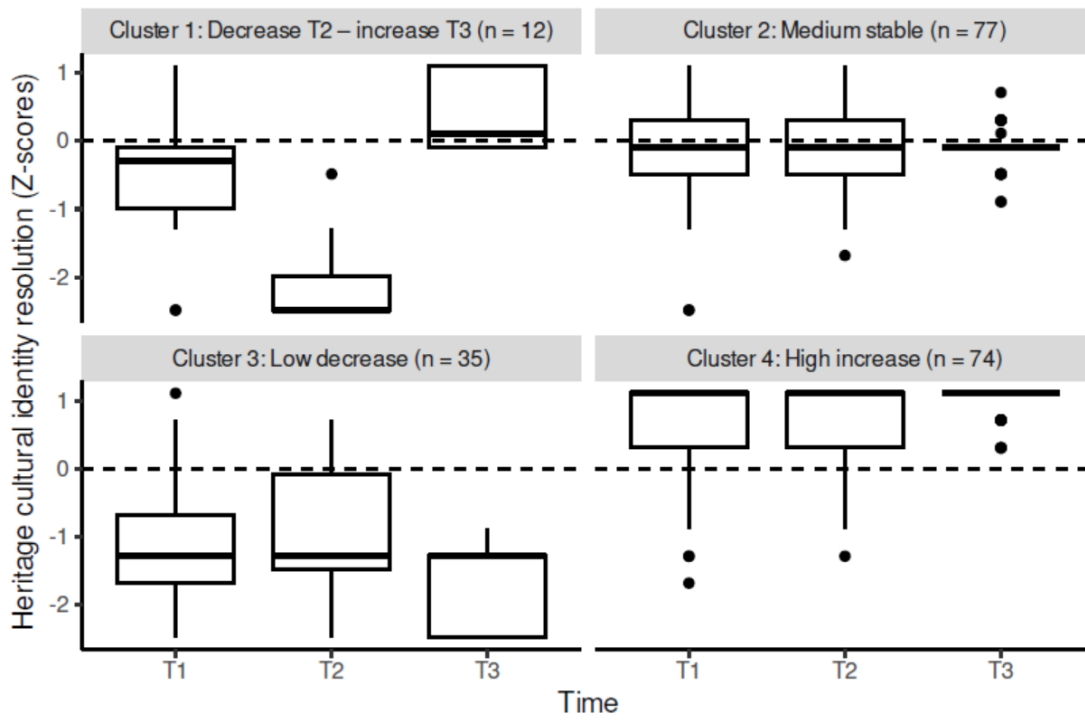
**Figure 2**

*Heritage cultural identity exploration trajectories*



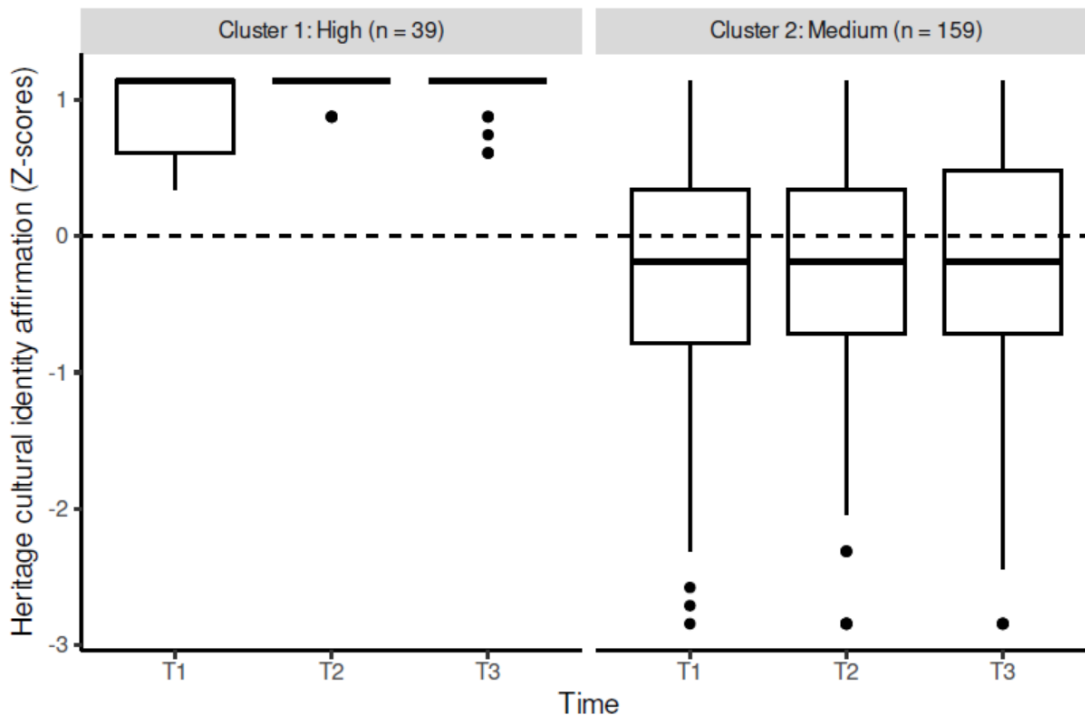
**Figure 3**

*Heritage cultural identity resolution trajectories*



**Figure 4**

*Heritage cultural identity affirmation trajectories*



**4.3.2.1 Predicting heritage cultural identity exploration trajectories.** The best-fitting multinomial logistic regression model to describe heritage cultural identity exploration trajectories included gender, immigrant descent, intervention, perceived autonomy support by teachers, intrinsic motivation, perceived relatedness support by teachers, peer belonging, and the interactions between intervention and perceived autonomy support by teachers, intervention and perceived relatedness support by teachers, and intervention and peer belonging ( $R^2_{Nagelkerke} = .57$ ). Of these, immigrant descent ( $X^2(2, N = 198) = 30.10, p < 0.001$ ), intrinsic motivation ( $X^2(2, N = 198) = 12.04, p = 0.002$ ), and the interaction between intervention condition and perceived autonomy support by teachers ( $X^2(2, N = 198) = 8.94, p = 0.011$ ), perceived relatedness support by teachers ( $X^2(2, N = 198) = 11.51, p = 0.003$ ) and peer belonging ( $X^2(2, N = 198) = 9.11, p = 0.011$ ), significantly predicted the heritage cultural identity exploration trajectories. The medium stable heritage culture exploration trajectory was used as a reference category.

There was a main effect of immigrant descent, with adolescents of immigrant descent more likely to be in the high stable and low stable exploration trajectory than adolescents of non-immigrant descent. Also, as expected, when adolescents experience autonomy in the school context, this was associated with higher heritage cultural identity exploration trajectories (research question 2). The higher adolescents' intrinsic motivation, the less likely they are to be in the low-stable exploration trajectory.

Adolescents' experiences of autonomy and relatedness across the three time points also moderated the effect of the intervention condition of the Identity Project on heritage cultural exploration trajectories (research question 3). Under conditions of high perceived autonomy support from teachers, control and intervention condition showed opposite effects. In the control condition, the more adolescents perceived teachers to support their autonomy, the less likely adolescents were to be in the low-stable exploration trajectory; but surprisingly, in the intervention condition, the more adolescents perceived teachers to support their



autonomy, the *more* likely they were to be in the low-stable exploration trajectory. Under conditions of high perceived relatedness support from teachers, control and intervention condition also showed opposite effects, however, contrary to the interaction results in regard to autonomy support, for the intervention condition the results were in line with expectations. In the intervention condition, the more relatedness support by teachers adolescents reported, the more likely they were to be in the high-stable exploration trajectory, and the higher their feelings of belonging to their peers, the less likely adolescents were to be in the low-stable exploration trajectory. However, in the control condition, the more relatedness support by teachers adolescents' reported, the less likely adolescents were to be in the high-stable exploration trajectory, and the higher their feelings of belonging to their peers, the more likely adolescents were to be in the low-stable exploration trajectory. The interaction between basic need satisfaction and intervention condition did not differ by immigrant descent of adolescents in regard to the exploration trajectories.

**4.3.2.2 Predicting heritage cultural identity resolution trajectories.** The best-fitting multinomial logistic regression model identified to describe heritage cultural identity resolution trajectories and test research questions 2 and 3, included immigrant descent, intervention, perceived relatedness support by teachers, peer belonging, and the interactions between intervention and immigrant descent, and intervention and perceived relatedness support by teachers ( $R^2_{Nagelkerke} = .38$ ). Of these, the interaction between the intervention group and immigrant descent ( $X^2(3, N = 198) = 9.50, p = 0.023$ ), and the interaction between the intervention group and perceived relatedness support by teachers ( $X^2(3, N = 198) = 7.98, p = 0.046$ ) significantly predicted heritage cultural identity resolution trajectories. The medium stable heritage culture resolution trajectory was used as a reference category.

There was no main effect of immigrant descent, nor of autonomy or relatedness satisfaction in the school context on heritage cultural resolution trajectories (research question 2). However, adolescents' immigrant descent and experiences of relatedness across the three

time points moderated the effect of the intervention condition of the Identity Project on heritage cultural resolution trajectories (research question 3). Across conditions, adolescents of immigrant descent were less likely to be in the low-decrease resolution trajectory and more likely to be in the high-increase resolution trajectory than adolescents of non-immigrant descent. This was more pronounced in the control condition, where there are no adolescents of immigrant descent in the low-decrease resolution trajectory, and the highest probability of adolescents of immigrant descent being in the high-increase resolution trajectory. In contrast, adolescents of non-immigrant descent were more likely to be in the high-increase resolution trajectory and less likely to be in the low-decrease resolution trajectory when in the intervention group compared to the control group. Moreover, only under conditions of high perceived relatedness support of teachers, were adolescents in the intervention condition more likely to be in the high increase resolution trajectory. The interaction between basic need satisfaction and intervention condition did not differ by immigrant descent of adolescents in regard to the resolution trajectories.

#### **4.3.2.3 Predicting heritage cultural identity affirmation trajectories. A**

multinomial logistic regression including all three-way interaction terms (immigrant descent x intervention x relatedness/autonomy satisfaction) did not converge, likely due to the excessive number of parameters to be estimated compared to the structure of the observed data. Further analyses were run comparing logistic regressions including one three-way-interaction each. However, a model without any three-way-interaction was determined to fit the data best ( $R^2_{Nagelkerke} = .57$ ). The best-fitting model to describe heritage cultural identity affirmation trajectories and explore research questions 2 and 3, included age, immigrant descent, intervention, perceived relatedness support by teachers, peer belonging, and an interaction between intervention and perceived relatedness support by teachers. Of these, immigrant descent ( $X^2(1, N = 198) = 50.83, p < 0.001$ ), peer belonging ( $X^2(1, N = 198) = 4.26, p = 0.039$ ), and the interaction between the intervention group and perceived relatedness support

by teachers ( $X^2(1, N = 198) = 6.14, p = 0.013$ ) significantly predicted heritage cultural identity affirmation trajectories. The medium heritage culture affirmation trajectory was used as a reference category.

There was a main effect of immigrant descent, with adolescents of immigrant descent more likely to be in the high affirmation trajectory than adolescents of non-immigrant descent. Also, as expected, when adolescents experience relatedness in the school context, this was associated with higher heritage culture affirmation trajectories (research question 2). The higher adolescents' feelings of belongingness to peers, the more likely they were to be in the high affirmation trajectory.

Adolescents' experiences of relatedness across the three time points also moderated the effect of the intervention condition of the Identity Project on heritage cultural identity affirmation trajectories (research question 3). Only under conditions of high perceived relatedness support of teachers, were adolescents in the intervention condition more likely to be in the high affirmation trajectory. The interaction between basic need satisfaction and intervention condition did not differ by immigrant descent of adolescents in regard to the affirmation trajectories.

**4.3.2.4 Sensitivity analyses.** Considering the overall minimal differences between the findings of the best fitting models and the associated models without influential cases, and following a conservative approach, no cases were excluded (for detailed results see Appendix C).

#### **4.4 Discussion**

The Identity Project (Umaña-Taylor & Douglass, 2017) has shown promise in enhancing ethnic-racial identity development in adolescents across North America and Europe, yet outcomes vary. This highlights the necessity of investigating factors and conditions that influence the efficacy of the intervention (Walton & Yeager, 2020). Therefore, the current study investigated the importance of basic need satisfaction of autonomy and

relatedness in the school context, as highlighted by Self-Determination Theory (Ryan & Deci, 2017), Erikson's identity framework (1968) and stage-environment fit theory (Eccles & Roeser, 2011), for (1) promoting adolescents' heritage cultural identity development, and (2) enhancing the effects of the Identity Project on heritage cultural identity. The findings support the assumption of differential (between two and four) pathways of heritage cultural identity exploration, resolution and affirmation trajectories emerging for 7<sup>th</sup> grade adolescents in Germany (research question 1). A substantial number of adolescents exhibited moderate or high stable exploration trajectories, while a smaller group maintained consistently low exploration levels over time. In line with other studies investigating adolescents' identity trajectories in the Identity Project (Ceccon et al., 2024), resolution of heritage cultural identity displayed a more dynamic developmental pattern. Though a majority of adolescents followed trajectories characterized by stability or increase, a noteworthy subgroup experienced a temporary dip in resolution post-test, succeeded by a substantial rebound at follow-up. In terms of heritage cultural identity affirmation, findings pointed to two trajectories—a larger group demonstrating a medium and stable affirmation pattern and a smaller group exhibiting high affirmation with a slight increase from the initial to the second assessment point.

These findings shed light on the dynamic and differing development of heritage cultural identity processes in adolescents. They further underline the importance of complementing analyses using average levels of identity scores with analyses investigating identity trajectories. Trajectories go beyond observing how heritage cultural identity changes on average for all adolescents over separate time points, instead revealing how identity develops across these three time points, and how this may differ for various subgroups of adolescents. The stable trajectories of exploration and affirmation suggest that how much adolescents actively engage in activities to explore their heritage cultural identity (exploration), and how individuals feel about their heritage cultural identity (affirmation) may need more time to change than the 16 weeks followed by the current study. As our sample

includes younger adolescents, it may also take a longer period of time before there are greater changes in their heritage cultural identity compared to older adolescents (Schachner et al., 2024a); the intervention may have initiated exploration and affirmation processes that continue to evolve beyond the 16-week timeframe examined here (Sladek et al., 2021). A lack of change in exploration may also be due to data collection taking place during the COVID-19 pandemic; exploration was measured by activities such as taking part in events to explore your heritage cultural identity, which may have simply not been possible at the time (see also Ceccon et al., 2023, 2024). However, the findings show important changes in clarity regarding the personal meaning of heritage cultural identity to adolescents (resolution) over the 16 weeks, supporting research suggesting that exploration may not necessarily precede resolution, but resolution may also precede or develop alongside exploration (Crocetti, 2017).

Moreover, the findings indicate that these differential pathways emerging for adolescents may vary based on adolescents' experiences of autonomy and relatedness, as well as their immigrant descent. As expected, the intervention alone does not predict adolescents' heritage cultural identity trajectories<sup>18</sup>, but adolescents' heritage cultural identity exploration, resolution and affirmation may vary depending on their immigrant descent and whether they experience autonomy and relatedness in the school context (research question 2).

Additionally, participants' immigrant descent and whether they experience autonomy and relatedness in the school context may shape how the Identity Project relates to exploration, resolution, and affirmation (research question 3). Overall, while the direct effects of autonomy and relatedness on heritage cultural identity development vary in the absence of structured incentives to engage with heritage culture, such as those provided by the Identity Project, the study sheds light on the critical role of teacher-student relationships. These relationships are a

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<sup>18</sup> These findings should be interpreted in the context of latent profile cluster analyses, i.e. analyses looking at the trajectories of sub-groups of the sample. The findings do not preclude the possibility that overall, the intervention increases average-level heritage cultural identity scores of students. The findings only indicate, that what identity trajectory adolescents belong to, is not solely predicted by whether they are in the intervention or control condition.

fundamental requirement for interventions to effectively foster heritage cultural identity development.

#### ***4.4.1 Basic need satisfaction and heritage cultural identity trajectories***

Experiences of autonomy and relatedness across the three time points play an important, but limited role in shaping adolescents' heritage cultural identity trajectories (research question 2). Contrary to theory (Erikson, 1968; Ryan & Deci, 2017) and previous studies (Cannard, 2016; Luyckx et al., 2017) that suggested autonomy's and relatedness' role in all three aspects of heritage cultural identity development (exploration, resolution and affirmation), autonomy was only associated with exploration trajectories, and relatedness was only associated with affirmation trajectories. Specifically, in line with expectations, adolescents who experienced more intrinsic motivation were more likely to be in the high heritage cultural identity exploration trajectory. Similarly, the more peer belonging adolescents reported across the three measured time points, the more likely they were to be in the high affirmation trajectory.

These findings underscore the importance of distinguishing between different identity development processes. They suggest that autonomy may play a more significant role in exploration rather than resolution and affirmation, corroborating the assertions of Self-Determination Theory (Ryan & Deci, 2017) that autonomy is crucial for initiating and propelling adolescents' exploration of their identity. Adolescents whose need for autonomy is fulfilled by intrinsic academic motivation may experience a sense of agency and freedom that could provide them with the necessary energy to invest in identity-related efforts and explore their heritage cultural identity (Luyckx et al., 2009). Forming meaningful connections with peers on the other hand may be more important for affirming adolescents' heritage cultural identity. Adolescents' sense of belonging and acceptance within their peer group may foster a sense of belonging (Vansteenkiste & Soenens, 2023) and contribute to a more positive self-perception of their heritage cultural identity (Rageliené, 2016), rather than contributing

towards actively exploring or understanding the meaning of their heritage cultural identity.

This suggests that experiences of autonomy or relatedness alone may be insufficient for young adolescents to resolve their heritage cultural identity.

Furthermore, the findings emphasize the importance of differentiating between specific types of autonomy and relatedness satisfaction – while intrinsic motivation played a significant role in increasing heritage cultural identity exploration among adolescents, perceived teacher support of autonomy did not. In the same line, while good relationships with peers lead adolescents to feel more positively about their identity, good relationships with their teachers did not. It is possible that in other contexts teacher support of autonomy and relatedness may help adolescents engage in global identity exploration (Faircloth, 2012; Sinai et al., 2012); however, in German school contexts that are characterized by an assimilationist climate and lack explicit emphases on heritage cultural identity (Gries et al., 2021), this support may not be sufficient for adolescents to actively explore their heritage cultural identity or develop positive attitudes towards their heritage cultural identity. However, school interventions such as the Identity Project offer a promising solution to this limitation by providing the necessary incentives and support for adolescents to actively engage with their heritage cultural identity within the school environment.

Additionally, adolescents of immigrant descent exhibited unique trajectories, indicating the influence of acculturation processes, negative stereotypes, and discrimination on their heritage cultural identity development. Adolescents of immigrant descent were more likely to be in the high exploration and affirmation trajectories than adolescents of non-immigrant descent. Yet, they were also more at risk of being in the low exploration trajectory, although this was the least common of the exploration trajectories. This follows the pattern of previous research showing that ethnic-racial identity is more salient for minoritized adolescents, as they develop their heritage cultural identity while navigating additional challenges such as discrimination (Schachner et al., 2018; Umaña-Taylor & Rivas-Drake,

2021). Adolescents response to these experiences of discrimination and social rejection may vary based on the strategies available to them. Encountering discrimination can signal to adolescents' that they do not belong to and are not welcome in the national identity. To protect their well-being and self-esteem, adolescents may therefore dis-identify with the national identity and identify more strongly with their heritage cultural group, leading to higher heritage cultural identity exploration and affirmation (Tajfel & Turner, 1986).

On the other hand, in response to social rejection adolescents may identify strongly with the larger national identity while distancing themselves from their heritage cultural identity (Tajfel & Turner, 1986), possibly leading to less heritage cultural identity exploration. The effectiveness of these strategies depends on the inclusivity of the national identity, as well as characteristics of adolescents, such as phenotype and religious affiliation (Jugert et al., 2020b). Therefore, it would be important for future research to look into subgroups of adolescents of immigrant descent and consider experiences such as foreigner objectification in order to understand the varying effects. Adolescents could also lack opportunities to explore their heritage cultural identity in the German assimilationist context, which is an important pre-requisite for being able to engage in exploration (Verhoeven et al., 2019) and may also lead to lower heritage cultural identity exploration. This may be especially pronounced in smaller cities like Halle (Saale) compared to larger and more culturally diverse cities like Berlin.

#### ***4.4.2 Basic need satisfaction and the Identity Project***

Adolescents' experiences of autonomy and relatedness across the three time points altered the effects of the Identity Project on heritage cultural identity trajectories (research question 3). Yet, for autonomy support by teachers the pattern of findings was opposite than expected, with adolescents going through the Identity Project being more likely (and those not going through the Identity Project being less likely) to be in the low exploration trajectory when experiencing autonomy support by their teachers. One possible interpretation of this



unexpected finding is that autonomy support by teachers, when combined with the incentives provided by the intervention to explore one's heritage culture, may inadvertently create cognitive dissonance in adolescents. This cognitive dissonance could stem from the perception that autonomy support, intended to empower adolescents, may be associated with national culture values and thereby inadvertently convey assimilative messages, encouraging adolescents to align with the broader cultural norms within the German school environment (Coşkan et al., 2016). The simultaneous existence of both autonomy support and the incentive to explore their heritage culture could result in conflicting messages (Fuligni & Tsai, 2015), potentially leading to reduced exploration. Additional studies and in-depth qualitative research are needed to help shed more light on the underlying mechanisms involved in this phenomenon.

In regard to adolescents' experiences of relatedness in the school context, peer belonging moderated the effect of the Identity Project on heritage cultural identity exploration, while relatedness support by teachers played a role in moderating the effect of the intervention on heritage cultural identity exploration, resolution and affirmation. Adolescents with stronger feelings of belonging to their peers, and who report better relationships with their teachers (perceived autonomy support) were more likely to be in higher exploration trajectories when participating in the Identity Project. Moreover, only when coupled with perceived relatedness support by teachers, were adolescents participating in the Identity Project intervention more likely to be in high resolution and affirmation trajectories. This further emphasizes the importance of differentiating different facets of relatedness that adolescents experience within the school environment when examining how need satisfaction plays a role in the relationship between interventions such as the Identity Project and heritage cultural identity development. In addition, the findings underscore that, despite the limited attention paid to affirmation in studies on the Identity Project, the intervention in conjunction with increased teacher support has the potential to contribute to adolescents having a more

positive view of their heritage cultural identity.

These findings are in accordance with expectations that support of relatedness in the school context is an important condition for heritage cultural identity development processes promoted by the Identity Project. Forming meaningful connections with peers and teachers and fostering a sense of belonging and psychological safety (Vansteenkiste & Soenens, 2023), is essential for the intervention to unfold as intended. Moreover, it is intriguing that contrary to the study's initial assumptions based on theory (Erikson, 1968; Ryan & Deci, 2017) and previous studies (Cannard, 2016; Luyckx et al., 2017), it appears that autonomy does not shape the effect of the Identity Project on heritage cultural identity development. Especially positive teacher-student relationships emerge as an important condition for intervention effects, indicating that a positive teacher-student relationship serves as fertile ground for the Identity Project and for achieving the desired intervention effects on heritage cultural identity development (Walton & Yeager, 2020). When going through the Identity Project, adolescents delve into personal narratives, engage with sensitive content, and may revisit past experiences of discrimination or feelings of alienation. In this context, teacher-student relationships emerge to be a crucial condition for adolescents to feel secure, encouraged, and empowered while navigating the intervention materials and activities, facilitating the desired positive outcomes of the Identity Project. The findings further suggest, that having teachers implement the Identity Project may enhance optimal conditions for the intervention. Studies have found that when teachers implement the Identity Project curriculum, this strengthens their relationships with their students (Umaña-Taylor et al., 2024), which may ultimately enhance the efficacy of the intervention.

Opposing patterns emerge for adolescents in the control condition, who did not go through the Identity Project. For those adolescents, the more relatedness support by teachers and the more peer belonging they reported, the more likely they were to be in lower exploration trajectories. These findings suggest that the intervention plays a pivotal role in

redefining the dynamics between relatedness satisfaction and heritage cultural identity exploration among adolescents. The absence of the intervention's structured support and encouragement for heritage cultural identity exploration may lead adolescents to interpret increased relatedness support of teachers as a signal to conform or adhere to established norms, again inadvertently communicating messages of assimilationism. Adolescents may further prioritize peer affiliations over independent exploratory behavior, particularly if those affiliations are perceived as socially normative or rewarding in the absence of clear exploration incentives. Research has shown that to avoid cognitive conflict, adolescents may choose certain identities prematurely if they align with the values and expectations of their close relationships (Côté & Levine, 2014). Therefore, satisfaction of the need for relatedness in the school context should be accompanied by opportunities to engage with heritage cultural identity, as to prevent meaningful relationships leading to adolescents feeling pressured to conform to certain norms in the school context and to encourage heritage cultural identity exploration.

While intervention effects on heritage cultural identity exploration and affirmation did not differ by immigrant descent, the intervention had a stronger positive effect on heritage cultural identity resolution for adolescents of non-immigrant descent, than for adolescents of immigrant descent. These findings reflect that adolescents of immigrant descent explore their heritage culture more, have a clearer sense of what their heritage culture means to them, and more positive feelings towards their heritage culture than adolescents of non-immigrant descent without the intervention, potentially leaving less room for further development facilitated by the Identity Project. The intervention is designed to increase exploration and resolution of heritage cultural identity for all adolescents by having them engage with their heritage cultural identity. By showing adolescents that culture is not something that is relevant only for adolescents of immigrant descent it may especially increase heritage culture identity resolution for adolescents of non-immigrant descent, helping to close the salience gap in

heritage cultural identity resolution for adolescents of immigrant descent and non-immigrant descent. This nuanced finding underscores the importance of recognizing different entry points and strategies for various groups of adolescents within an intervention context (Ceccon et al., 2024). This is in line with other studies noting that some adolescents, particularly adolescents from majoritized groups, may require additional time to process and apply lessons learned from interventions like the Identity Project (Sladek et al., 2021), and may benefit from extended follow-up and support. By acknowledging the unique pathways of heritage cultural identity resolution for both adolescents of immigrant and non-immigrant descent, educators can implement tailored strategies that address their specific needs and challenges, ultimately fostering a more comprehensive approach in interventions to promote heritage cultural identity development.

#### ***4.4.3 Limitations and future research***

While the current study provides valuable insights into the interplay between autonomy and relatedness satisfaction in the school context and heritage cultural identity development, several limitations should be considered. The relatively small sample size and the emergence of small clusters can be challenging to interpret and may limit the generalizability of findings to broader populations. However, the small sample and cluster size of the current study (1) is consistent with other studies using similar methods (e.g., Chavous et al., 2018; Juang et al., 2023a), (2) acknowledges the challenges of conducting intervention studies in schools (Masia Warner & Fox, 2014), and (3) withstands sensitivity analyses, suggesting the findings are robust in regard to multivariate outliers. Nevertheless, future research with larger samples could provide a more comprehensive understanding of the relationships between autonomy and relatedness satisfaction and heritage cultural identity development and increase the validity of our findings. Moreover, the analyses were of exploratory nature and are a good starting point for further confirmatory research aiming to

confirm the stability of these trajectories over time with larger samples, and their relationship with basic need satisfaction.

One reason for the relatively small sample size was the high amount of missing data, caused in large parts by disruptions due to the COVID-19 pandemic. Additionally, the measures utilized in this study were part of a lengthy questionnaire, contributing to the data collection challenges. The necessity of remote learning and the limitations it imposed on student engagement and data collection likely contributed to these drop-out rates. Participants without missing data were selected for the analyses, and these participants happened to be slightly younger than those with missing data. This could possibly be explained as adolescents who are older than the class average, for example due to having repeated a school year, are more likely to be absent at school (Gubbels et al., 2019). While this age difference was relatively small, it should be taken into account when considering the study's findings. Future research could consider adapting data collection methods to better accommodate such disruptions and prevent the necessity of removing participants from analysis, such as more flexible data collection strategies that align with changing circumstances or shorter questionnaires. Additionally, establishing stronger collaborations with schools and educators could help ensure more consistent participation and completion of questionnaires (Horsfall et al., 2021), providing a more comprehensive and accurate representation of the target population.

The COVID-19 pandemic influenced the study beyond data collection issues. As the study took place in the school year 2021/22, adolescents' everyday life was being impacted by the pandemic. Adolescents experienced a myriad of stressors, ranging from disruptions in daily routines and isolation from peers to heightened anxiety about the health and safety of their families, influencing their overall well-being (Ravens-Sieberer et al., 2022). This may have impacted their engagement with identity development processes in general (Fioretti et al., 2020), and the Identity Project specifically. This broader socio-emotional context within

which the study took place should be taken into account when interpreting the study's findings.

Another limitation of this study is that the measure of perceived teacher support of adolescents' relatedness showed only limited (rather than good) reliability. Future research should thus use the long version of the Teacher as Social Context Questionnaire (Belmont et al., 1992) to test which items work best in the German context or use an alternative measure with better reliability in this context.

Lastly, the specific cultural and educational context – German schools with a substantial proportion of adolescents from immigrant backgrounds – has to be considered when interpreting the findings. It is important to note that while there are known cultural variations in the concept of autonomy, particularly concerning separation from parents (Kağıtçıbaşı, 2013), the study focused on autonomy as it relates to intrinsic motivation and autonomy-supportive teaching practices. The theoretical foundations of the study, including Self-Determination Theory (Ryan & Deci, 2017), Erikson's psychosocial theory (1968), and stage-environment fit theory (Eccles & Roeser, 2011), suggest that while the findings were derived from a specific context, the principles of identity development, and autonomy and relatedness satisfaction likely hold universal relevance for adolescents across diverse societies. These theoretical and empirical frameworks emphasize the universal quest for identity, the importance of basic psychological needs, and the influence of supportive environments, implying that the findings have broader implications beyond the immediate context of the current study (Vansteenkiste et al., 2020). Nonetheless, replicating this study in different cultural and educational contexts could help further clarify how variations in autonomy and relatedness, as well as the balance between autonomy and relatedness (see Coşkan et al., 2016), contribute to adolescent development across cultures.

#### **4.5 Conclusion**

The study provides valuable insights into improving the efficacy of school-based interventions for adolescents, by investigating how basic need satisfaction of autonomy and relatedness in the school context is related to adolescents' heritage cultural identity trajectories, particularly in the context of the Identity Project. Heritage cultural identity resolution trajectories show the most substantial variations, followed by exploration and affirmation trajectories. Autonomy and relatedness, without incentives to engage in heritage cultural identity development such as offered by the Identity Project, produce varying effects on heritage cultural identity development. However, teacher-student relationships emerge as an important and necessary condition for the Identity Project to promote positive heritage cultural identity development in adolescents. Furthermore, the study reveals differing paths for adolescents of immigrant and non-immigrant descent; adolescents of immigrant descent often start at higher trajectories, while adolescents of non-immigrant descent may benefit more from interventions such as the Identity Project. These findings hold promise for refining the design and implementation of interventions aimed at promoting adolescents' heritage cultural identity. They emphasize the need for interventions to build on relatedness in the school context, specifically strong teacher-student relationships, which is crucial for interventions to achieve their desired effects. Additionally, the findings underline the importance of tailored interventions that acknowledge the unique needs of diverse adolescents, highlighting the relevance of heritage cultural identity for adolescents of non-immigrant descent, and mitigating the impact of discrimination and social rejection for adolescents of immigrant descent.

**Appendix C: The Identity Project: Autonomy & Relatedness Satisfaction****Table C1***Descriptives exploration clusters*

	<b>Cluster 1: low stable exploration (<i>n</i> = 19)</b>	<b>Cluster 2: medium stable exploration (<i>n</i> = 107)</b>	<b>Cluster 3: high stable exploration (<i>n</i> = 72)</b>
<b>Immigrant descent</b>			
Adolescents of Immigrant descent <i>n</i> = 81 (40.91%)	<i>n</i> = 8 (42.11%)	<i>n</i> = 26 (24.30%)	<i>n</i> = 47 (65.28%)
Adolescents of Non-immigrant descent <i>n</i> = 117 (59.09%)	<i>n</i> = 11 (57.89%)	<i>n</i> = 81 (75.70%)	<i>n</i> = 25 (34.72%)
<b>Intervention group</b>			
Intervention <i>n</i> = 97 (48.99%)	<i>n</i> = 10 (52.63%)	<i>n</i> = 51 (47.66%)	<i>n</i> = 36 (50.00%)
Control <i>n</i> = 101 (51.01%)	<i>n</i> = 9 (47.37%)	<i>n</i> = 56 (52.34%)	<i>n</i> = 36 (50.00%)

*Note.* There is a difference of immigrant descent in the three clusters ( $X^2(2, N = 198) = 29.91, p < .001, V = .39$ ). There is no evidence of difference of intervention in the three clusters ( $X^2(2, N = 198) = 0.21, p = 0.902, V = .03$ ).



**Table C2***Descriptives resolution clusters*

	<b>Cluster 1: decrease T2- increase T3 resolution n = 12</b>	<b>Cluster 2: medium stable resolution n = 77</b>	<b>Cluster 3: low decrease resolution n = 35</b>	<b>Cluster 4: high increase resolution n = 74</b>
<b>Immigrant descent</b>				
Adolescents of Immigrant descent n = 81 (40.91%)	n = 3 (25.00%)	n = 25 (32.47%)	n = 3 (8.57%)	n = 50 (67.57%)
Adolescents of Non-immigrant descent n = 117 (59.09%)	n = 9 (75.00%)	n = 52 (67.53%)	n = 32 (91.43%)	n = 24 (32.43%)
<b>Intervention group</b>				
Intervention n = 97 (48.99%)	n = 5 (41.67%)	n = 38 (49.35%)	n = 17 (48.57%)	n = 37 (50.00%)
Control n = 101 (51.01%)	n = 7 (58.33%)	n = 39 (50.65%)	n = 18 (51.43%)	n = 37 (50.00%)

*Note.* There is a difference of immigrant descent in the four clusters ( $X^2(3, N = 198) = 40.42, p < .001, V = .45$ ). There is no evidence of difference of intervention in the four clusters ( $X^2(3, N = 198) = 0.29, p = 0.961, V = .04$ ).

**Table C3***Descriptives affirmation clusters*

	<b>Cluster 1: medium affirmation (<i>n</i> = 159)</b>	<b>Cluster 2: high affirmation (<i>n</i> = 39)</b>
<b>Immigrant descent</b>		
Adolescents of Immigrant descent <i>n</i> = 81 (40.91%)	<i>n</i> = 47 (29.56%)	<i>n</i> = 34 (87.18%)
Adolescents of Non-immigrant descent <i>n</i> = 117 (59.09%)	<i>n</i> = 112 (70.44%)	<i>n</i> = 5 (12.82%)
<b>Intervention group</b>		
Intervention <i>n</i> = 97 (48.99%)	<i>n</i> = 81 (50.94%)	<i>n</i> = 16 (41.03%)
Control <i>n</i> = 101 (51.01%)	<i>n</i> = 78 (49.06%)	<i>n</i> = 23 (58.97%)

*Note.* There is a difference of immigrant descent in the two clusters ( $X^2(1, N = 198) = 43.01, p < .001, V = .47$ ). There is no difference of intervention group in the two clusters ( $X^2(1, N = 198) = 1.23, p = 0.267, V = .08$ ).

**Table C4***Results of the best-fitting multinomial model for heritage cultural identity exploration*

	Omnibus $X^2(df)$	Cluster 1: low stable ( $n = 19$ )		Cluster 3: high stable ( $n = 72$ )	
		$\beta(SE)$	Odds Ratio	$\beta(SE)$	Odds Ratio
<i>Independent variable</i>					
Gender	5.54(2)	-1.13(.62)	0.32	0.30(.35)	1.35
Intervention	0.09(2)	0.10(.64)	1.10	-0.07(.35)	0.93
Immigrant descent	30.10(2)***	1.48(.61)*	4.41	1.82(.36)***	6.17
Perceived autonomy support by teachers	0.80(2)	-0.71(.52)	0.49	0.05(.32)	1.05
Perceived relatedness support by teachers	1.09(2)	0.43(.47)	1.53	-0.26(.29)	0.77
Peer belonging	0.17(2)	0.81(.48)	2.24	0.36(.25)	1.43
Intrinsic motivation	12.04(2)**	-1.10(.35)**	0.33	0.01(.20)	1.01
Intervention X Perceived autonomy support by teachers	8.94(2)*	1.97(.72)**	7.15	-0.07(.46)	0.93
Intervention X Perceived relatedness support by teachers	11.51(2)**	-0.97(.68)	0.38	1.22(.49)*	3.39
Intervention X Peer belonging	9.11(2)*	-1.64(.65)*	0.19	-.073(.40)	0.48

*Note.* Nagelkerke's  $R^2 = .36$ . For the dependent variable, the reference category is cluster 2: medium stable cluster ( $n = 107$ ). As for the independent variables, the baseline category for gender was male, for intervention was the control group, and for immigrant descent was non-immigrant descent. \* $p < .05$ , \*\* $p < 0.01$ , \*\*\* $p < .001$ .

**Table C5***Result of the best-fitting multinomial model for heritage cultural identity resolution*

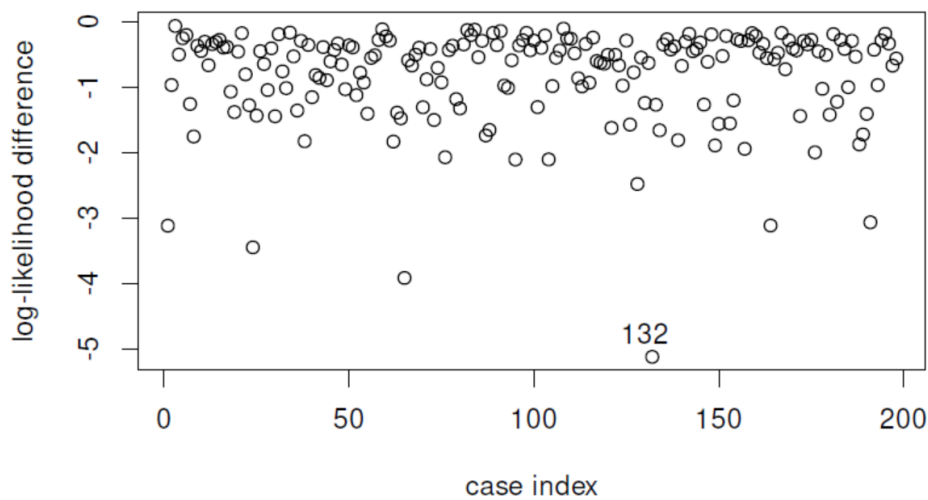
	<i>Omnibus</i> $X^2(df)$	Cluster 1: decrease T2 – increase T3 ( <i>n</i> = 12)		Cluster 3: low decrease ( <i>n</i> = 35)		Cluster 4: high increase ( <i>n</i> = 74)	
		$\beta(SE)$	<i>Odds Ratio</i>	$\beta(SE)$	<i>Odds Ratio</i>	$\beta(SE)$	<i>Odds Ratio</i>
<i>Independent variable</i>							
Intervention	0.17(3)	-0.85(0.86)	0.43	-0.21(0.48)	0.81	0.67(0.54)	1.96
Immigrant descent	45.18(3)***	-0.81(1.17)	0.44	-15.72(0.38)***	0.00	2.33(0.56)***	10.31
Perceived relatedness support by teachers	13.18(3)**	-0.49(0.39)	0.61	-0.42(0.28)	0.66	-0.24(0.27)	0.78
Peer belonging	7.57(3)	0.67(0.39)	1.96	-0.05(0.22)	0.95	0.39(0.19)*	1.48
Intervention X Immigrant descent	9.50(3)*	0.85(1.54)	2.35	14.47(0.38)***	1930864	-1.56(0.74)*	0.21
Intervention X Perceived relatedness support by teachers	7.98(3)*	-0.70(0.64)	0.50	-0.30(0.44)	0.74	0.96(0.45)*	2.62

*Note.* Nagelkerke's  $R^2 = .38$ . For the dependent variable, the reference category is cluster 2: medium stable cluster (*n* = 77). As for the independent variables, the baseline category for intervention was the control group and for immigrant descent was non-immigrant descent. \* $p < .05$ , \*\* $p < 0.01$ , \*\*\* $p < .001$ .

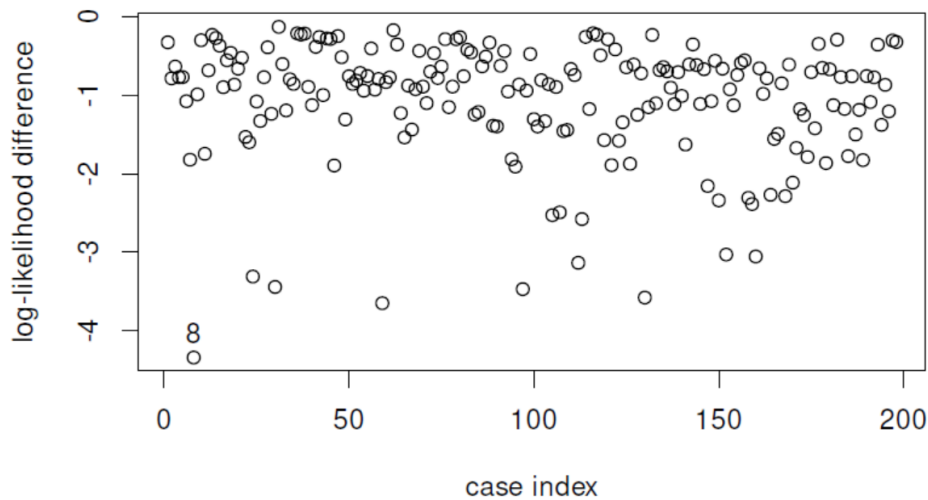
**Table C6***Result of the best-fitting linear model for heritage cultural identity affirmation*

<i>Independent variable</i>	<i>Omnibus X<sup>2</sup>(df)</i>	Cluster 2: high affirmation	
		<i>β(SE)</i>	<i>Odds Ratio</i>
		( <i>n</i> = 39)	
Age	2.97(1)	-0.50(0.30)	0.61
Intervention	2.27(1)	-1.05(0.53)*	0.35
Immigrant descent	50.83(1)***	3.29(0.57)***	26.94
Perceived relatedness support by teachers	5.18(1)*	0.17(0.29)	1.19
Peer belonging	4.23(1)*	0.49(0.24)*	1.63
Intervention X Perceived relatedness support by teachers	6.14(1)*	1.48(0.64)*	4.37

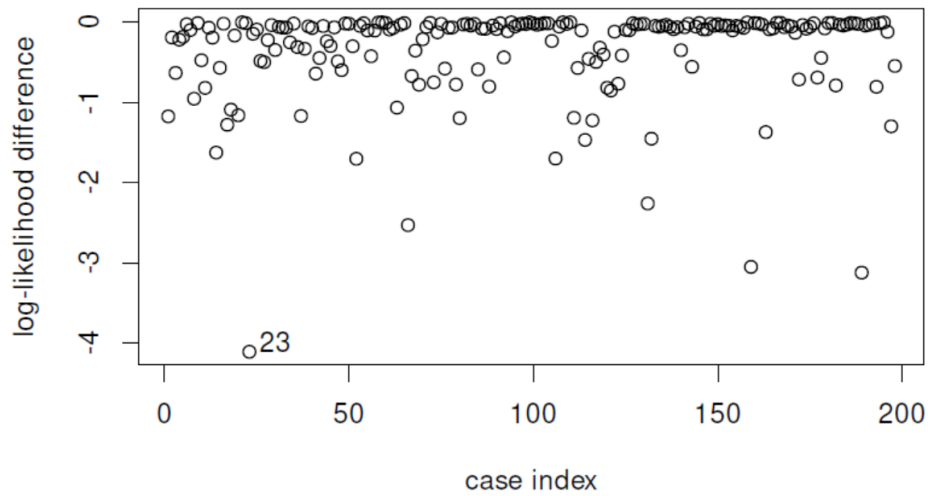
*Note.* Nagelkerke's  $R^2 = .57$ . A multinomial model did not converge. For the dependent variable, the reference category is cluster 1: medium affirmation cluster ( $n = 159$ ). As for the independent variables, the baseline category for intervention was the control group and for immigrant descent was non-immigrant descent. \* $p < .05$ , \*\* $p < 0.01$ , \*\*\* $p < .001$ .

**Figure C1***Sensitivity analysis heritage cultural identity exploration*

*Note.* Sensitivity analyses for the best multinomial model predicting heritage cultural identity exploration ( $n = 198$ ). Log-likelihood difference is the difference between the log-likelihood of model fitted on the whole sample and the log-likelihood of the model fitted to the sample without a considered case. The index of the most influential case, number 132, is presented. However: 1) the signs of the parameters in the full model coincide with those in the model without case 132; 2) only one estimated effect, namely gender, differs in terms of statistical significance (at the 0.05 level). Specifically, while in the full model, gender is not statistically significant ( $X^2(2, N = 198) = 5.54, p = 0.063$ ), in the model without case 132, gender is statistically significant ( $X^2(2, N = 198) = 12.25, p = 0.002$ ). Considering the overall minimal differences between the findings of the full model and the model without case 132 and following a conservative perspective we have decided not to exclude this case.

**Figure C2***Sensitivity analysis heritage cultural identity resolution*

*Note.* Sensitivity analyses for the best multinomial model predicting heritage cultural identity resolution ( $n = 198$ ). Log-likelihood difference is the difference between the log-likelihood of model fitted on the whole sample and the log-likelihood of the model fitted to the sample without a considered case. The index of the most influential case, number 8, is presented. However: 1) the signs of the parameters in the full model coincide with those in the model without case 8; 2) only one estimated effect, namely peer belonging, differs in terms of statistical significance (at the 0.05 level). Specifically, while in the full model, peer belonging is not statistically significant ( $X^2(3, N = 198) = 7.57, p = 0.056$ ), in the model without case 8, peer belonging is statistically significant ( $X^2(3, N = 198) = 14.25, p = 0.003$ ). Considering the overall minimal differences between the findings of the full model and the model without case 8 and following a conservative perspective we have decided not to exclude this case.

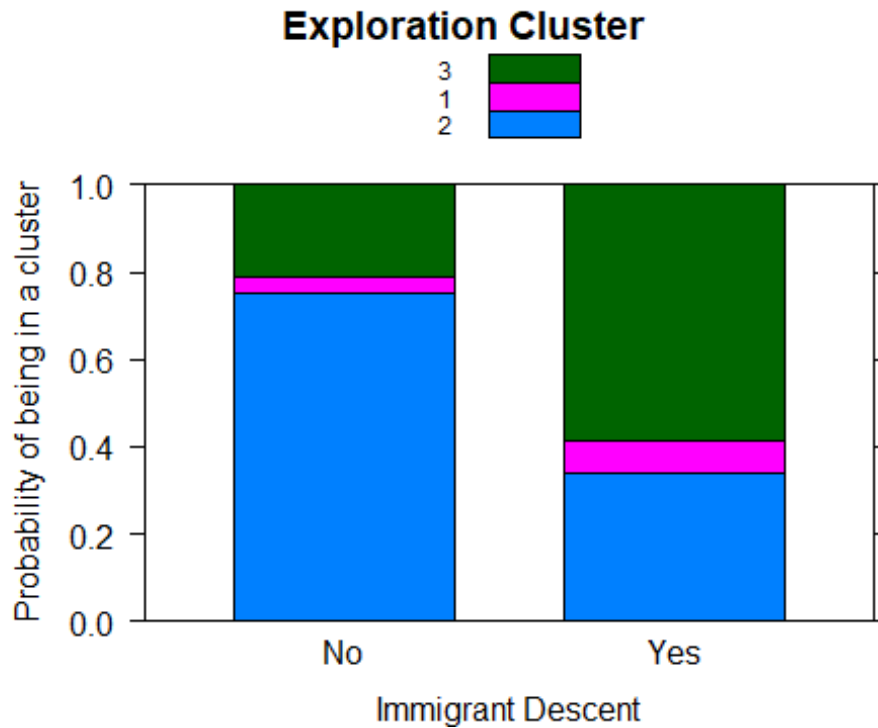
**Figure C3***Sensitivity analysis heritage cultural identity affirmation*

*Note.* Sensitivity analyses for the best multinomial model predicting heritage cultural identity affirmation ( $n = 198$ ). Log-likelihood difference is the difference between the log-likelihood of model fitted on the whole sample and the log-likelihood of the model fitted to the sample without a considered case. The index of the most influential case, number 23, is presented. However: 1) the signs of the parameters in the full model coincide with those in the model without case 23; 2) all estimated effects did not differ in terms of statistical significance (at the .05 level) between the full model and the model without case 23. Based on this results, we have decided not to exclude the case 23.



**Figure C4**

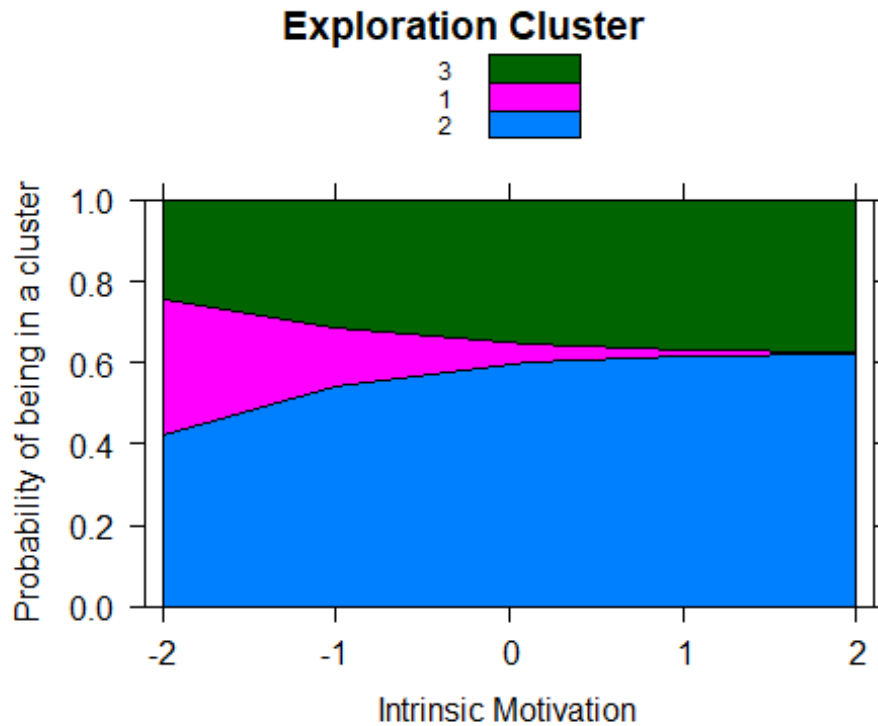
*Heritage cultural identity exploration – main effect of immigrant descent*



*Note.* Cluster 1 represents the low stable ( $n = 19$ ), cluster 2 the medium stable ( $n = 107$ ), and cluster 3 the high stable exploration cluster ( $n = 72$ ). There is a main effect of immigrant descent. Students of immigrant descent have an increased probability of being in the low stable exploration cluster [1] and in the high stable exploration cluster [3].

**Figure C5**

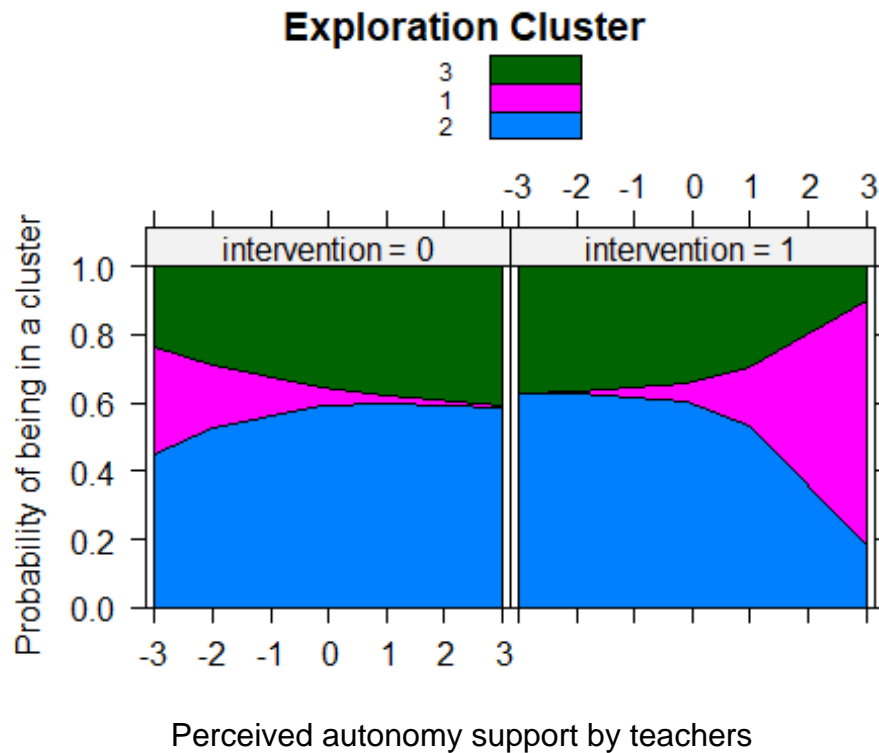
*Heritage cultural identity exploration – main effect of intrinsic motivation*



*Note.* Cluster 1 represents the low stable ( $n = 19$ ), cluster 2 the medium stable ( $n = 107$ ), and cluster 3 the high stable exploration cluster ( $n = 72$ ). There is a main effect of intrinsic motivation when comparing the low-stable and medium-stable exploration clusters. As the students' intrinsic motivation increases, the probability for being in the low-stable exploration cluster [1] decreases.

**Figure C6**

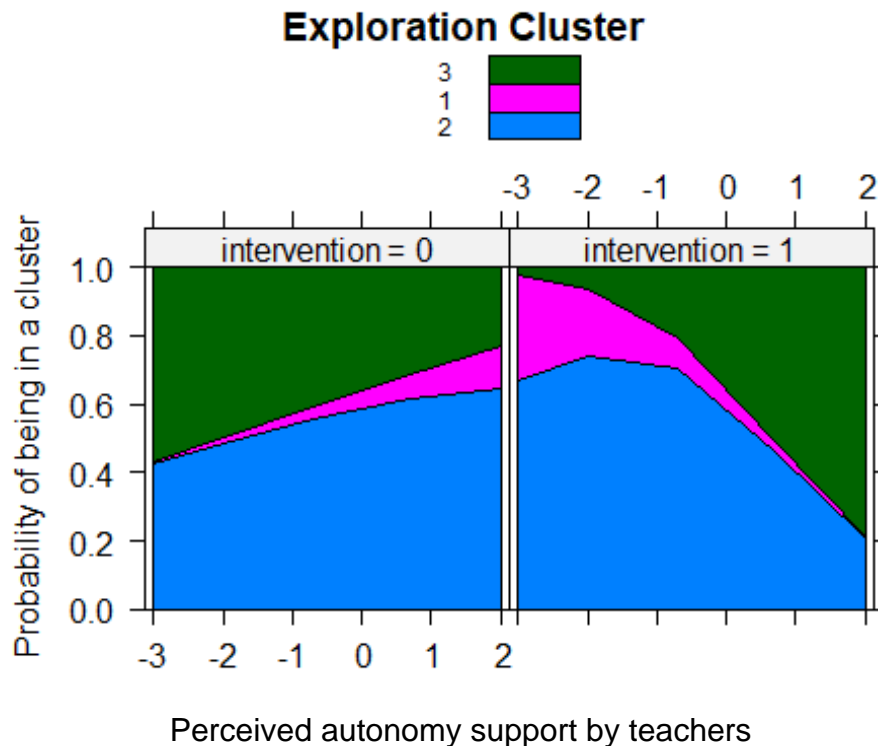
*Heritage cultural identity exploration – interaction intervention X perceived autonomy support by teachers*



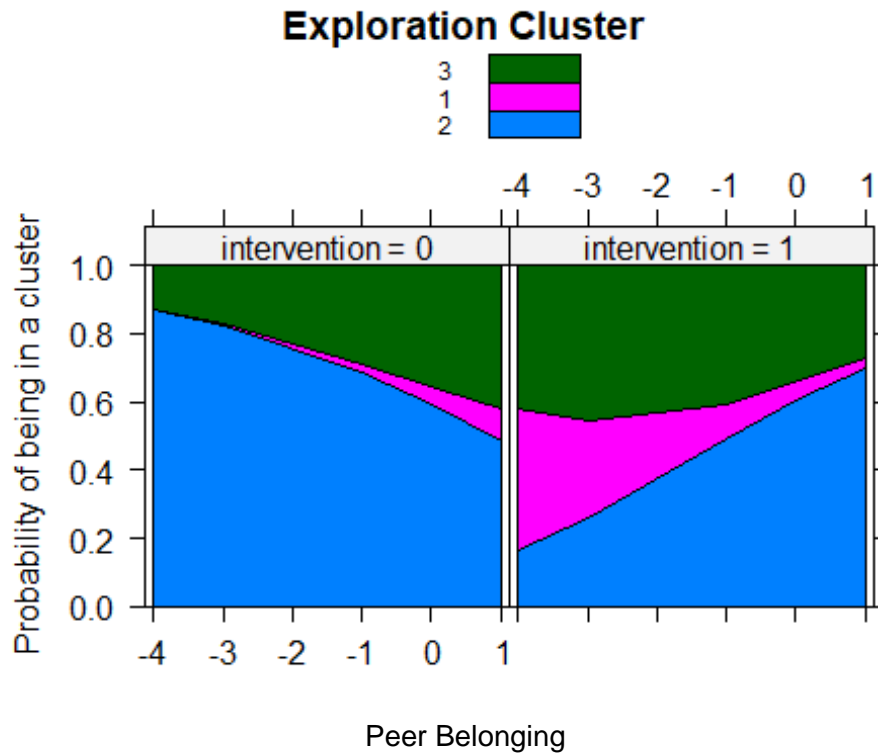
*Note.* Cluster 1 represents the low stable ( $n = 19$ ), cluster 2 the medium stable ( $n = 107$ ), and cluster 3 the high stable exploration cluster ( $n = 72$ ). There is an interaction between intervention condition and perceived autonomy support by teachers when comparing the low-stable and medium-stable exploration clusters. In the control condition, as the students' perceived autonomy support by teachers increases, the probability for being in the low-stable exploration cluster [1] decreases. However, in the intervention condition, as the students' perceived autonomy support by teachers increases, the probability for being in the low-stable exploration cluster [1] increases.

**Figure C7**

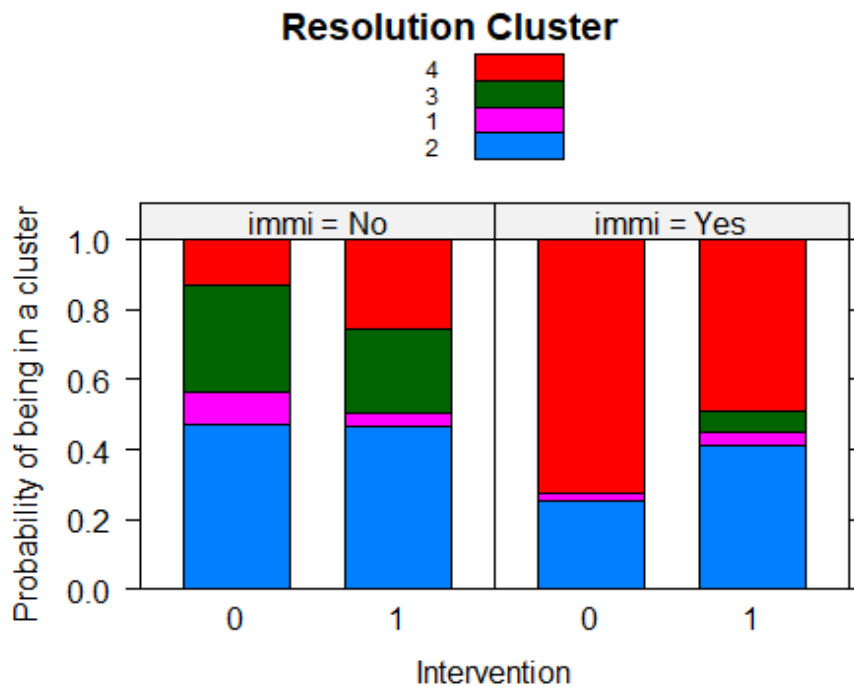
*Heritage cultural identity exploration – interaction intervention X perceived relatedness support by teachers*



*Note.* Cluster 1 represents the low stable ( $n = 19$ ), cluster 2 the medium stable ( $n = 107$ ), and cluster 3 the high stable exploration cluster ( $n = 72$ ). There is an interaction between intervention condition and perceived relatedness support by teachers when comparing the high-stable and medium-stable exploration clusters. In the intervention condition, as the students' perceived relatedness support by teachers increases, the probability for being in the high-stable exploration cluster [3] increases. However, in the control condition, as the students' perceived relatedness support by teachers increases, the probability for being in the high-stable exploration cluster [3] decreases.

**Figure C8***Heritage cultural identity exploration – interaction intervention X peer belonging*

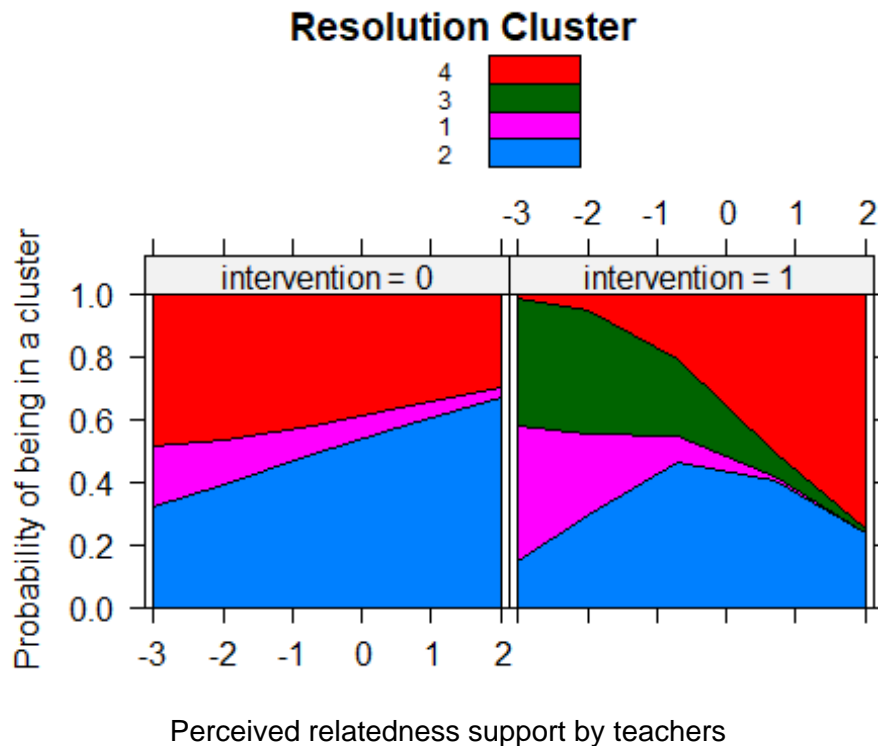
*Note.* Cluster 1 represents the low stable ( $n = 19$ ), cluster 2 the medium stable ( $n = 107$ ), and cluster 3 the high stable exploration cluster ( $n = 72$ ). There is an interaction between intervention condition and peer belonging when comparing the low-stable and medium-stable exploration clusters. In the intervention condition, as the students' feeling of peer belonging increase, the probability for being in the low-stable exploration cluster [1] decreases. However, in the control condition, as the students' peer belonging increases, the probability for being in the low-stable exploration cluster [1] also increases.

**Figure C9***Heritage cultural identity resolution – interaction intervention X immigrant descent*

*Note.* Cluster 1 represents the decrease T2 – increase T3 ( $n = 12$ ), cluster 2 the medium stable ( $n = 77$ ), cluster 3 the low decrease ( $n = 35$ ), and cluster 4 the high increase resolution cluster ( $n = 74$ ). There is an interaction between the intervention group and students' status of immigrant descent, when comparing the medium-stable and the low-decrease resolution cluster, and the medium-stable and the high-increase resolution cluster. Students of immigrant descent, are less likely to be in low-decrease resolution cluster [3] and more likely to be in the high-increase resolution cluster [4] than students of non-immigrant descent. This is more pronounced in the control condition, where there are no students of immigrant descent in the low-decrease resolution cluster [3], and the highest probability of students being in the high-increase resolution cluster [4]. Furthermore, for students of non-immigrant descent, the probability of being in the high-increase resolution cluster [4] increases when in the intervention group, and being in the low-decrease resolution cluster [3] decreases when in the intervention group.

**Figure C10**

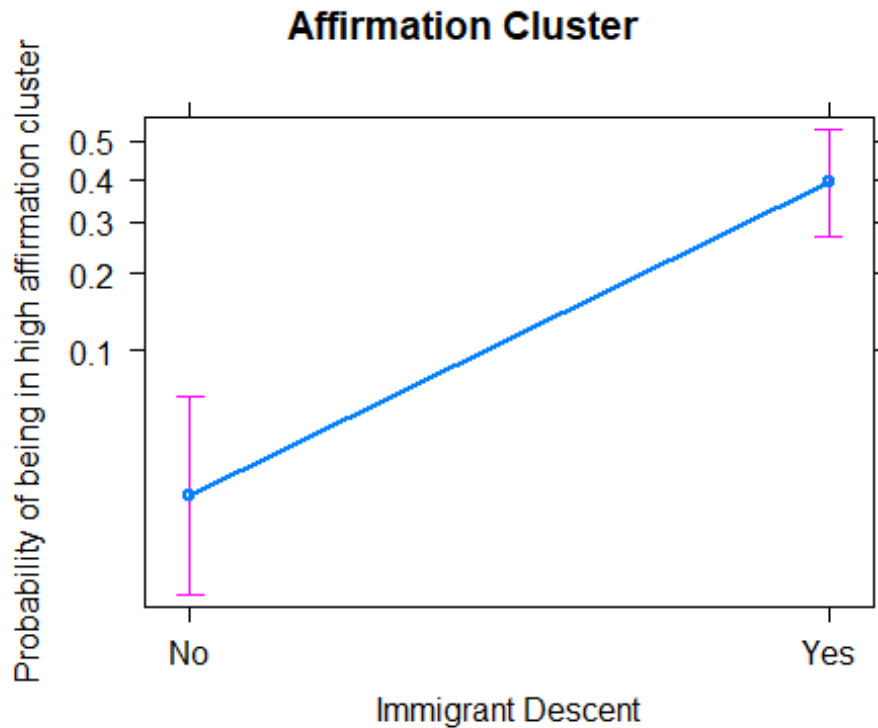
*Heritage cultural identity resolution – interaction intervention X perceived relatedness support by teachers*



*Note.* Cluster 1 represents the decrease T2 – increase T3 ( $n = 12$ ), cluster 2 the medium stable ( $n = 77$ ), cluster 3 the low decrease ( $n = 35$ ), and cluster 4 the high increase resolution cluster ( $n = 74$ ). There is an interaction between the intervention group and perceived relatedness support by teachers when comparing the medium-stable and high increase resolution cluster. In the intervention condition, an increase in perceived relatedness support by teachers increases the probability of being in the high increase resolution cluster [4]. This is not the case in the control condition.

**Figure C11**

*Heritage cultural identity affirmation – main effect of immigrant descent*

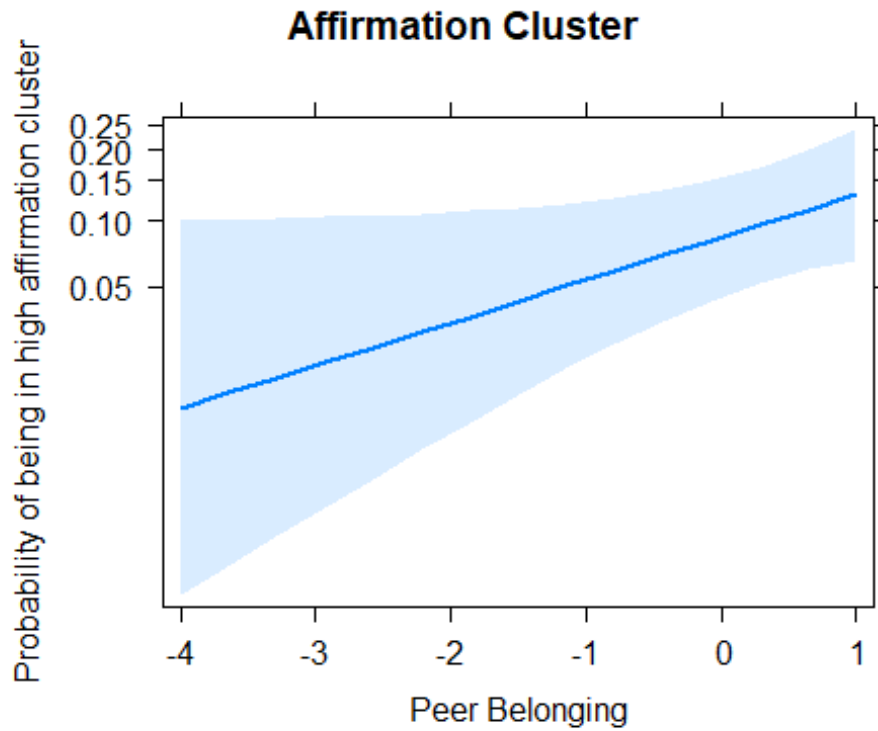


*Note.* The Y-axis depicts the probability of being in the high affirmation cluster ( $n = 39$ ), compared to the medium affirmation cluster ( $n = 159$ ). There is a main effect of immigrant descent. There is a higher probability of being in the high affirmation cluster for students of immigrant descent, compared to students of non-immigrant descent.



**Figure C12**

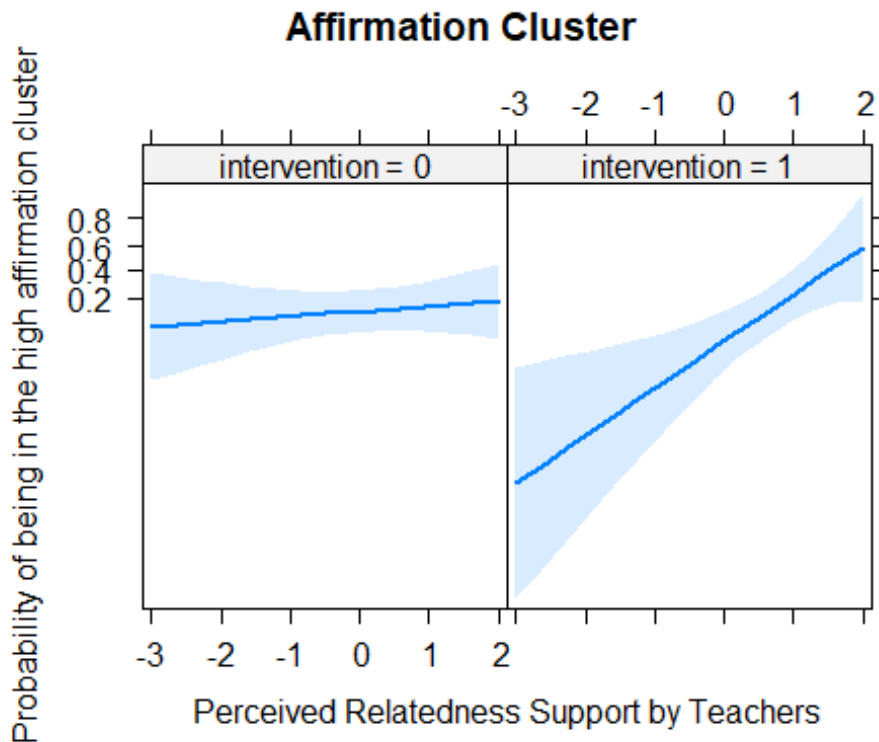
*Heritage cultural identity affirmation – main effect of peer belonging*



*Note.* The Y-axis depicts the probability of being in the high affirmation cluster ( $n = 39$ ), compared to the medium affirmation cluster ( $n = 159$ ). There is a main effect of peer belonging. Students with high levels of peer belonging are more likely to be in the high affirmation cluster.

**Figure C13**

*Heritage cultural identity affirmation – interaction intervention X perceived relatedness support by teachers*



*Note.* The Y-axis depicts the probability of being in the high affirmation cluster ( $n = 39$ ), compared to the medium affirmation cluster ( $n = 159$ ). There is an interaction between intervention condition and perceived relatedness support by teachers. In the control condition, there is no difference in probability of being in the high affirmation cluster dependent on perceived relatedness support by teachers. In the intervention condition however, the probability of being in the high affirmation cluster is increased for students with higher levels of perceived relatedness support by teachers.

**5. Study 4: Do my students think I am racist? Effects on teacher self-efficacy, stress, job satisfaction and supporting students in culturally diverse classrooms**

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**Abstract**

Schools are an important context of intergroup contact between culturally diverse teachers and students, where intergroup anxiety may occur. Using survey data from school teachers in Germany, this study aimed to extend research on intergroup anxiety by investigating the concern about appearing racist as a potential risk factor for teachers' well-being and functioning in culturally diverse classrooms. The findings suggest that teachers who are more concerned about appearing racist also experience more stress and less self-efficacy teaching in culturally diverse classrooms. This can reduce their job satisfaction, and also affect their ability to support their students' needs in the classroom.

## 5.1 Introduction

More than one third of students in Germany are of immigrant descent<sup>19</sup> (37%, Statistisches Bundesamt, 2022a), making schools an important setting of intergroup contact between teachers and students. However, teachers often have low levels of cultural diversity related self-efficacy and do not feel adequately prepared to work in culturally diverse schools (Gay, 2018). When interacting with students of a different cultural background than their own, teachers may be concerned that what they say or do may lead to their students perceiving and evaluating them as racist (Godsil & Richardson, 2017). This has been termed racial anxiety (Godsil & Richardson, 2017) or the concern about appearing racist (Tropp & Rucinski, 2022), and is a specific form of intergroup anxiety (Stephan, 2014).

Beginning with research on U.S. school desegregation in the 1980s (Stephan & Stephan, 1985), a large body of research focuses on the phenomenon that people feel more anxious and concerned when interacting with members of an “out-group” than with members of their “in-group” (for a review see Stephan, 2014). The concern about appearing racist is a specific form of intergroup anxiety that can occur both before and during intergroup interactions, and describes the worry that one will be perceived as racist (Godsil et al., 2014). In line with the notion of intergroup anxiety, previous US-based research has linked concern about appearing racist to physiological, affective, cognitive and behavioral consequences, such as physiological stress reactions, feelings of stress and anxiety, increased monitoring and vigilance, depleted cognitive resources, and fewer and lower-quality intergroup interactions (for a review, see Godsil & Richardson, 2017; Stephan, 2014).

While there is a growing body of international research focusing on new challenges and opportunities that arise for teachers in culturally diverse classrooms (e.g., Dubbeld et al.,

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<sup>19</sup> Students of immigrant descent” is used to describe students, who are minoritized by society (and school teachers), i.e. are viewed by others as being of immigrant, non-German background based on phenotype, culture or religion, and are thus structurally disadvantaged. Furthermore, we will use the word “culture” or “cultural backgrounds” to describe cultural, ethnic and racial differences and backgrounds of students and teachers.

2019; Gay, 2018), and much research has established that intergroup contact can reduce intergroup anxiety in and outside of culturally diverse classrooms (Pettigrew & Tropp, 2008; Tropp & Rucinski, 2022), the concern about appearing racist as a specific form of intergroup anxiety and its impact on teachers and students have not been studied extensively yet. First research among teachers in the U.S. has shown that the concern about appearing racist can result in negative experiences for teachers and students alike (Godsil et al., 2014; Tropp & Rucinski, 2022). For example, a study by Harber et al. (2012) found that White teachers in the U.S. are hesitant to give critical feedback to Black and Latinx students out of worry of coming across as racist, thus impeding their students' growth by withholding necessary feedback for them to learn and improve. In the same vein, first results from Germany suggest that teachers' concern about being or appearing prejudiced may lead them to include more positive and less negative comments on essays of ethnic minority students than their ethnic majority peers (Nishen & Kessels, 2022).

Drawing on survey data from school teachers in Germany, the current study aims to investigate the affective consequences of the concern about appearing racist.<sup>20</sup> International research has shown that cultural diversity related stress and self-efficacy are important facets of teachers' affective experience in culturally diverse classrooms (e.g., Glock et al., 2019; Gutentag et al., 2018). Studies from Europe, North America, Oceania and Israel show that stress and self-efficacy affect teachers' quality of teaching and relationships with their students (Caprara et al., 2003; Kyriacou, 1987; Skaalvik & Skaalvik, 2017). While stress impacts these outcomes negatively and can cause burnout in the long-term (Glock et al., 2019), higher self-efficacy levels of teachers have been associated with more effective teacher practices in the classroom (Zee & Koomen, 2016), better student educational outcomes

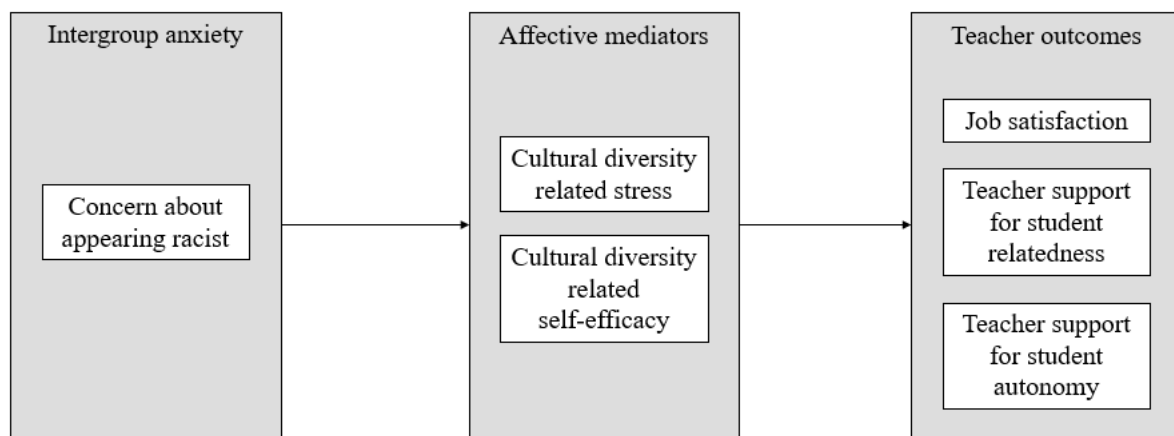
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<sup>20</sup> As intergroup anxiety can be experienced by anyone (Stephan, 2014) and in line with previous research (Tropp & Rucinski, 2022), we conceptualize the concern about appearing racist as something that not only White teachers can experience – but that any teacher (regardless of their background) can experience in today's diverse society.

(Tschannen-Moran & Hoy, 2001), higher levels of job satisfaction, lower levels of stress, and less burnout (Klassen & Chiu, 2010).

Due to the important implications teachers' stress and self-efficacy have for their well-being and functioning in and outside of classrooms, in the present study we focus on how the concern about appearing racist is related to teachers' affective experiences of stress and self-efficacy. Specifically, we examine cultural diversity related stress and self-efficacy, i.e., stress and self-efficacy with regard to teaching a culturally diverse student body. We aim to (1) investigate whether concern about appearing racist is associated with more cultural diversity related stress and lower cultural diversity related self-efficacy; and (2) test a process model that extends research on intergroup anxiety from immediate affective consequences to more general indicators of teacher functioning, by investigating whether in turn more cultural diversity related stress and lower cultural diversity related self-efficacy are associated with less job satisfaction and teachers' own assessment of providing less support of students' psychological needs for relatedness and autonomy (for our conceptual model see Fig. 1).

In the following, we first discuss the concern about appearing racist in the context of Germany and then argue for the expected associations in our conceptual model. We will first argue why we expect (1) concern about appearing racist to be related to cultural diversity related teacher outcomes, specifically cultural diversity related stress and self-efficacy. We will then argue, why we expect cultural diversity related stress and cultural diversity related self-efficacy to be related to more general indicators of teacher functioning, namely (2) job satisfaction, and (3) support of students' relatedness and autonomy.

**Figure 5***Path model of the current study***5.1.1 Contextualization: Concern about appearing racist in Germany**

The current study aims to extend predominantly US-based research on a form of intergroup anxiety, the concern about appearing racist, to the German context. There are ongoing discussions on historical and contemporary racism in both the U.S. and Germany, yet the way the discourse takes place differs in some ways.

Due to Germany's historical legacy of the Holocaust as a racially motivated genocide, explicit discussions of "race" go against prevalent social norms and the word "race" is only used in connection with the racial ideologies associated with the Holocaust (Juang et al., 2021). Consequently, the development of racial identities, as is common in the U.S., is less likely in Germany; individuals rather develop racialized identities based on other significant social categories such as heritage culture, migration status or religion (Juang et al., 2021). However, these racialized identities function similarly to race in the U.S., as groups are disadvantaged or privileged based on these racialized identities (Foner, 2015). Accordingly, experiences related to race remain salient and are recognized by individuals and communities directly affected by racism in Germany, just as they are in the U.S. Nevertheless, it remains taboo to openly name and discuss race-related experiences in German mainstream society (Juang et al., 2021).



Regarding the discourse on racism, Germany intensely focuses on racism in the context of the Holocaust, which results in racism being limited to a specific group of right-wing extremists in a specific period in the past. This downplays the continuing significance of race and discounts ongoing contemporary racism, as well as the social inequalities it produces (El & Fereidooni, 2016; Roig, 2017). Moreover, it leads to racism in Germany often being equated to being a right-wing extremist (Seiffge-Krenke & Haid, 2012). In contrast, the U.S. openly discusses race and recognizes its contemporary salience, but often there is a lack of connection between racism of the past and the present. Both contexts hinder understanding about how the past influences present and future racism.

While there are differences in how the discourse on race and racism takes place, Germany is part of the international discourse on racism and people are concerned about appearing racist. The Black Lives Matter movement that started in the U.S. led to widespread anti-racism protests also in Germany (Deutsche Welle, 2020), and led to a discussion of the racist mass shooting incidents within Germany (Die Zeit, 2020). Moreover, research from France, Italy and the Netherlands highlights the relevance of the concern about appearing racist for the European context (Bonnet, 2014; Bonnet & Caillault, 2015). In Germany, a study by the German Center for Integration and Migration Research shows that 53% of participants agree with the statement, that “nowadays you are labeled as a racist for every little thing” (DeZIM-Institut, 2021), and underlines the importance of the concern about appearing racist also for the German context.

In conclusion, Germany’s history that does not allow for the explicit discussion of “race”, as well as its framing of racism in right-wing extremist terms, make it difficult for teachers and students in Germany to engage in important discussions around race and racism (Roig, 2017). Therefore, it is important to study teachers’ concern about appearing racist specifically in the German context, where people may want to avoid being labeled as racist even more than in other national contexts.

### ***5.1.2 Concern about appearing racist and cultural diversity related stress & self-efficacy***

In light of increasingly culturally diverse schools and strong norms of being non-racist in Germany, Europe and world-wide, concern about appearing racist may be becoming increasingly common amongst teachers. Given the importance of stress and self-efficacy in the school context, in the present study we examine the possible effects of the concern about appearing racist on cultural diversity related stress and self-efficacy of teachers. Specifically, we expect that teachers who are more concerned about appearing racist will experience more cultural diversity related stress and less cultural diversity related self-efficacy. As the concern about appearing racist, like other forms of intergroup anxiety, can influence affect, cognition, physiology and behavior, the expected effects can be derived from previous literature and explained by underlying mechanisms of cognition and attentional bias as well as fewer and lower quality intergroup interactions and avoidance.

Concern about appearing racist may influence teachers' cognition and lead to attentional bias. Specifically, during interactions with students of different cultural backgrounds than their own, teachers may be worried about being perceived as racist by their students and may thus constantly assess whether their students are evaluating them negatively or not (Murphy & Taylor, 2012). Empirical evidence suggests, that attending to threatening cues may activate the cortisol stress response (van Honk et al., 2000) and may play a causal role in exacerbating both anxiety and subsequent stress (MacLeod et al., 2002). Additionally, the constant vigilance and monitoring causes cognitive depletion (Godsil & Richardson, 2017). In line with cognitive load theory (Sweller, 1988), studies from the U.S. and Israel have shown that cognitive depletion not only increases stress, but also decreases self-efficacy (Bishara, 2021; Feldon et al., 2018). Therefore, teachers who are more concerned about appearing racist may pay more attention to negative cues in intergroup interactions with students, which may cause them to experience more cultural diversity related stress and less cultural diversity related self-efficacy.

Additionally, concern about appearing racist has been linked to fewer and lower quality intergroup interactions and avoidance in the U.S. (Godsil & Richardson, 2017) and in Italy (Stathi et al., 2020). Teachers' expectations about how students may perceive them (i.e., as racist), may influence their behavior and in turn also their students' behavior in a way that confirms teachers' initial expectations (Self-fulfilling prophecy, Merton, 1948; Word et al., 1974). For example, when a teacher interacts with a student of a different cultural background than their own, the teacher's fear of being perceived as racist may lead to non-verbal signals, such as an unfriendly verbal tone, avoiding eye-contact and physical distancing. These non-verbal signals may be perceived by the student as rejection based on their cultural background. In response, the student may send out non-verbal signals of discomfort - thereby confirming or even increasing the teacher's fear of being perceived as racist. Thus, concern about appearing racist may lead to low(er) quality intergroup interactions or to the teacher avoiding intergroup contact altogether. Unfortunately, avoiding intergroup contact altogether prevents teachers from making positive intergroup experiences that are key for developing a greater sense of cultural diversity related self-efficacy (Bandura, 1994).

In summary, previous literature suggests that the concern about appearing racist may influence teachers' everyday experiences in culturally diverse schools through cognition, attentional bias as well as fewer and lower quality intergroup interactions and avoidance. Therefore, we hypothesize that more concern about appearing racist is associated with more cultural diversity related stress (H1a) and lower cultural diversity related self-efficacy (H1b).

### ***5.1.3 Cultural diversity related stress, self-efficacy and job satisfaction***

In light of teacher shortages and increasing turnover rates across the globe, teacher job satisfaction has become a major concern in the educational context (Toropova et al., 2020). Teachers with low job satisfaction are more likely to leave their school and/or the profession in the long run (Dreer, 2021). Yet, little research has looked at how cultural diversity in school influences teachers' job satisfaction (e.g., Briones et al., 2010) and to our knowledge

no research has looked into how in particular the concern about appearing racist is linked to job satisfaction. In the present study, we expect concern about appearing racist to be negatively related to job satisfaction by ways of cultural diversity related stress and self-efficacy.

Researchers have extensively studied the roles of stress and self-efficacy for job satisfaction (e.g., Collie et al., 2012). Not surprisingly, higher stress has been identified as a stable predictor of lower job satisfaction in Canadian and Norwegian teacher samples (Ferguson et al., 2012; Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2007, 2011). Moreover, self-efficacy is linked to our need to feel competent (SDT; Ryan & Deci, 2000), and work needs to provide people with opportunities to feel and act competent for them to be satisfied with their job (Timms & Brough, 2013). Accordingly, research from Canada has shown that higher teacher self-efficacy is consistently associated with better psychological well-being, job commitment and job satisfaction (Collie et al., 2012; Klassen & Chiu, 2010). In line with this, a study by Caprara et al. (2003) found, that Italian high school teachers who felt that they were able to manage classroom difficulties and accomplish teaching tasks, reported greater value, happiness and satisfaction regarding the teaching profession. Taken together, we therefore hypothesize that more cultural diversity related stress (H2a) and less cultural diversity related self-efficacy (H2b) will be related to lower job satisfaction.

#### ***5.1.4 Cultural diversity related stress, self-efficacy and support of student needs***

Much research has looked at the importance of teacher-student relationships, or how supportive teachers are of their students (for a meta-analysis, see Roorda et al., 2011). However, most research solely focuses on the valence of the teacher-student relationship and its effect on student outcomes. In our study, we extend current research by (1) focusing on the concern about appearing racist as a potential factor that may undermine teacher support of students via cultural diversity related stress and self-efficacy and (2) investigating teacher

support concerning two basic psychological needs, specifically the needs for relatedness and autonomy (Nalipay et al., 2020; Ryan & Deci, 2000).

Self-determination theory (SDT; Ryan & Deci, 2000) states that there are three basic needs: relatedness, autonomy and competence. Relatedness involves the desire for meaningful relationships with others, autonomy pertains to the need for self-direction in decision-making, while competence refers to feeling capable and effective in various endeavors. All three needs have to be satisfied in order to have good psychological health and personal well-being (Ryan & Deci, 2000). However, research shows that teachers can support students' need for competence through involvement (i.e., support for relatedness) and teaching strategies (i.e., support for autonomy) (Iglesias García et al., 2020; Sierens et al., 2009; Skinner et al., 1990). This suggests that teachers' support of students' competence will be influenced by the concern about appearing racist via teacher support of relatedness and autonomy. Therefore, the following study focuses solely on teachers' support of the needs for relatedness and autonomy.

Relatedness plays an important role for students' growth and academic performance (Furrer & Skinner, 2003), and from the U.S. to Indonesia, studies have linked support of relatedness with greater belonging, motivation, academic engagement and academic performance of students (Maulana et al., 2016; Ryan & Deci, 2000), making teacher support of relatedness a vital factor in students' academic career and overall well-being. In addition, high support of student autonomy in the North American and European school contexts has been associated with more intrinsic motivation of students (Amoura et al., 2015; Susic-Vasic et al., 2015), greater academic achievement (Taylor et al., 2014) and well-being (Amoura et al., 2015; Soenens & Vansteenkiste, 2010). Therefore, understanding whether concern about appearing racist could impede teacher support of students' relatedness and autonomy in the school context by way of cultural diversity related stress and self-efficacy is of high relevance.

Teachers can support their students' need for relatedness by developing high-quality teacher-student relationships through their interpersonal involvement with students (Ryan & Deci, 2000; Iglesias García et al., 2020). Yet, when teachers are experiencing lower levels of cultural diversity related self-efficacy and higher levels of cultural diversity related stress, the quality of interactions with their students likely suffers. For instance, research from Iran has shown that teachers with low self-efficacy are also more cynical towards their students (Khani & Mirzaee, 2015). Moreover, a study from Sweden shows, that when teachers experience stress, they are more likely to develop negative attitudes towards and interactions with their students (Ramberg et al., 2020). Lower self-efficacy and more stress are therefore likely associated with less positive student-teacher relationships. Thus, we expect lower cultural diversity related self-efficacy and higher cultural diversity related stress to undermine the need for relatedness in students.

In addition to supporting students' need for relatedness, teachers can support students' need for autonomy by promoting their feelings of volition and control (Reeve et al., 2003), for instance, by allowing students to follow their interests or conveying the relevance of teaching content (Iglesias García et al., 2020). We argue that teachers who feel more self-efficacious and less stressed in today's increasingly culturally diverse schools are also in a better position to support the autonomy of their students. Teachers with higher levels of self-efficacy and lower levels of stress are more likely to use autonomous teaching styles, while teachers with lower levels of self-efficacy and higher levels of stress are more likely to use controlling teaching styles (Zee & Koomen, 2016). This may be due to autonomy supportive teaching styles requiring more engagement from teachers (Braun et al., 2019; Larson et al., 2018) and being more resource-demanding (Skinner & Belmont, 1993). Therefore, it is likely that teachers experiencing more cultural diversity related stress and less cultural diversity related self-efficacy may use more controlling teaching styles as a coping response to regain control (Stephoe & Poole, 2016), thereby undermining students' need for autonomy.

In summary, we thus hypothesize that more cultural diversity related stress and less cultural diversity related self-efficacy will be associated with teachers' own assessments of providing less support of students' psychological needs for relatedness (H3a & H3b) and autonomy (H3c & H3d).

### ***5.1.5 The current study***

As more than one third of students in Germany are of immigrant descent (Statistisches Bundesamt, 2022a), schools are an important setting of intergroup contact and possible intergroup anxiety between teachers and students. The current pre-registered study aims to add to research on a specific form of intergroup anxiety: the concern about appearing racist. We posit that the concern about appearing racist is as an important construct to understand both teacher and student functioning in culturally diverse classrooms. The current study extends predominantly US-based research on the concern about appearing racist to the German context, where race and racism, and the social inequalities it produces, are usually not openly talked about and where people may want to avoid being labeled as racist even more than in other national contexts. Drawing on survey data from  $N = 584$  school teachers in Germany, we test a process model that extends research on intergroup anxiety, and specifically the concern about appearing racist, from immediate affective consequences to more general indicators of teacher functioning. We expect that teachers who are more concerned about appearing racist experience more cultural diversity related stress (H1a) and lower cultural diversity related self-efficacy (H1b). In turn, we expect that more cultural diversity related stress and less cultural diversity related self-efficacy are related to less job satisfaction (H2a & H2b) and to less teacher support of student relatedness and autonomy (H3a-d; Fig. 1). In addition, we will test for direct paths from concern about appearing racist to job satisfaction and to teacher support of student relatedness and autonomy, as well as for indirect paths via cultural diversity related stress and self-efficacy (mediation analyses).

## 5.2 Method

### 5.2.1 Transparency and openness

We report how we determined our sample size, all data exclusions, all manipulations and all measures relevant to this study, and we follow Journal Article Reporting Standards (JARS; Kazak, 2018). Hypotheses, method and analysis plan were pre-registered before the end of data collection (<https://osf.io/f67u5/>). The data had not been accessed by any of the collaborators at the time of pre-registration. The data, materials and code that support the findings of this study are available from the corresponding author upon request.

### 5.2.2 Participants

Participants were teachers recruited via research seminars at a German university in the winter term 2020/21. As part of the seminars, pre-service teacher students participating in one of six seminar groups were required to contact a minimum of three in-service teachers in Germany to participate in our online survey. The in-service teachers were recruited through personal contacts of the students and invited to participate in an online questionnaire on cultural diversity in schools. Participation in the study was voluntary; the study participants gave their informed consent and could opt-out at any time. No reimbursement for participation was given. Participants were required to teach in primary or secondary schools in Germany at the time of data collection.

The study sample included  $N = 584$  school teachers (75% female, 16% of immigrant descent) in Germany from all sixteen federal states, different regions and school types. Participants were between 23 and 65 years old, with an average age of  $M = 43.75$  years ( $SD = 11.93$ ). Despite the over-representation of East-German teachers in the sample (78% East-German sample vs. 13% East-German teachers on the population level), the demographic distribution of age, gender, immigrant descent, school location, public school teachers, and school types in our sample supports its representativeness for German teachers. For a detailed comparison of the sample and population demographics, please refer to Table D1.



### ***5.2.3 Materials and Procedure***

The online questionnaire was part of a larger study on teachers' diversity-related beliefs and practices as well as general well-being and teaching-related outcomes. The questionnaire was drawn up in German. When validated translations of scales were not available, the given scale was translated into German by the principal investigators and discussed by a committee of bilingual experts to ensure that the translation captured the original meaning of the items. Moreover, the questionnaire was evaluated by over 100 pre-service teachers on relevance, clarity and comprehensiveness of items before data collection. Participants responded to all our continuous measures on a scale from 1 ('does not apply at all') to 5 ('applies completely'). Internal consistency of scales was established using confirmatory factor analyses and coefficient omega was calculated as an indicator of reliability (McDonald, 1999). CFA results are only reported for non-established scales or where a single factor was initially not supported. An overview of all items per measure can be found in Table D2.

Concern about appearing racist was measured with three items, ( $\omega = 0.81$ ; e.g., "I am concerned that students may think I am racist if I question students' views"; Tropp, 2017).

Cultural diversity related self-efficacy was measured with six items ( $\omega = 0.84$ ). Five items belonged to Schachner and colleagues' (2015) scale of self-efficacy in multicultural classrooms (e.g., "I can adapt my teaching to the cultural diversity of the students"). We adapted the scale by adding one item of Civitillo et al.'s (2016) scale of self-efficacy to capture teacher-parent interactions: "I can communicate with parents of students whose mother tongue is not German". All items loaded on one factor, with factor loadings higher than 0.40.

Cultural diversity related stress was measured with four items ( $\omega = 0.79$ ; e.g., "Dealing with students from different cultural backgrounds makes my job as a teacher more

difficult", Civitillo et al., 2016; German adaptation of Tatar & Horenczyk, 2003). One item was dropped due to a factor loading smaller than 0.40.

Job satisfaction was measured with three items ( $\omega = 0.83$ ; e.g., "I enjoy my work"; Collie et al., 2012).

Teacher support of student relatedness and teacher support of student autonomy were measured using a shortened version of the Teacher as Social Context Questionnaire (TASC; Iglesias García et al., 2020), selecting the five items with the highest factor loadings in the original study for each scale. Exemplary items were "When the students in my classes are not performing according to their ability, I take time to help them" for teacher support of student relatedness ( $\omega = .71$ ), and "I encourage the students in my classes to think about how the subject matter might be useful to them" for teacher support of student autonomy ( $\omega = 0.61$ ). One additional item was dropped from the latter scale due to a factor loading smaller than 0.40.

**5.2.3.1 Covariates.** With regard to the teachers' demographics, *age*, *gender* and *immigrant descent* were considered as potential co-variates. Immigrant descent of the teachers was determined based on whether they themselves or at least one parent or grandparent was born outside of Germany.<sup>21</sup> As we know that intergroup contact can reduce intergroup anxiety and may therefore also reduce the concern about appearing racist (Pettigrew & Tropp, 2008; Tropp & Rucinski, 2022), we also considered teachers' estimate of the *percentage of students of immigrant descent* they teach (slider between 0 and 100%) and the number of their *intergroup friendships* (open question) as potential covariates.

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<sup>21</sup> The questionnaire was drawn up before the Federal Government Expert Commission (2021) recommendation to no longer differentiate between third generation immigrants and other Germans. As we only used one item to ask whether the person themselves or at least one parent or grandparent was born outside of Germany, we were not able to differentiate between 1st, 2nd and 3rd generation immigrants and therefore include 3rd generation immigrants in our definition of teachers of immigrant descent.

#### 5.2.4 Analytical Procedure

IBM SPSS Statistics for Windows (Version 28.0) was used for data cleaning, all other analyses were conducted using RStudio (Rstudio Team, 2022). Missing data was imputed using predictive mean matching (*mice* package). Bayesian structural equation modelling (bSEM) was employed using the *blavaan* package.

Prior to running the bSEM to test the hypothesized associations of the conceptual model, Bayesian correlations were run between the main study variables and possible covariates: age, gender, teachers' immigrant descent, percentage of students of immigrant descent, and intergroup friendships. Potential covariates that showed significant evidence of being correlated with the main study variables (Bayes factor greater than 1) were included as covariates in the bSEM.

Noninformative priors were chosen to reflect a state of prior ignorance regarding model parameters (Elster et al., 2015). In order to select significant bSEM associations, the credible intervals of regression co-efficients were assessed. The 95% credible interval is more intuitively interpretable than the frequentist confidence intervals, and shows that there is a 95% probability that these regression coefficients in the population lie within the corresponding intervals (Kruschke, 2014). If 0 is not contained in the credibility interval it is likely there is an effect.

Model fit was assessed using the Bayesian information criteria (BIC), the Bayesian root mean square error of approximation (BRMSEA), the Bayesian comparative fit index (BCFI), the Bayesian Tucker-Lewis index (BTLI), the Bayesian normed fit index (BNFI), and the Laplace approximation to the log-Bayes factor (Merkle & Wang, 2018). Model fit is generally considered good with BRMSEA below 0.06, and BCFI, BTFI and BNFI greater than 0.90. Lower values of the BIC indicate better fit. The Laplace approximation compares the marginal likelihood of the data under model 2 (*the alternative hypothesis*) with the marginal likelihood of the data under model 1 (*the null hypothesis*). For the Laplace

approximation, positive values favor the null hypothesis and negative values favor the alternative hypothesis.

In addition to testing our hypotheses, mediation analyses assessed full or partial mediation from concern about appearing racist to job satisfaction and teacher support of student relatedness and autonomy via cultural diversity related stress and self-efficacy. Mediations were tested using the *stanarm* package in R. Results can be found in Table D3.

## 5.3 Results

### 5.3.1 Descriptive results

The range, means and standard deviations of our main study variables are reported in Table 3. While overall teachers reported only a moderate concern about appearing racist, this descriptive finding still suggests that this is an issue that teachers in Germany face.

Furthermore, on average teachers were moderately stressed about cultural diversity, and indicated moderate levels of cultural diversity related self-efficacy. Overall, teachers reported high job satisfaction as well as high levels of supporting their students' needs, both for relatedness and autonomy. The average estimated percentage of students of immigrant descent in the classroom and number of teachers' intergroup friendships reflect that the teachers in our sample have some intergroup contact both outside and inside of school.

**Table 3**

#### *Descriptive statistics*

	<i>N</i>	Range	<i>M</i>	<i>SD</i>	$\omega$
Concern about appearing racist	553	1-5	2.2	0.8	.81
Cultural diversity related self-efficacy	555	1-5	3.5	0.6	.84
Cultural diversity related stress	545	1-5	2.3	0.8	.79
Job satisfaction	568	1-5	4.3	0.6	.83
Teacher support of student relatedness	567	1-5	4.12	0.5	.71
Teacher support of student autonomy	564	1-5	3.9	0.5	.61
% of students of immigrant descent	556	0-100	14.9	19.9	-
Intergroup friendships	529	0-100	2.6	6.1	-

An overview of the correlations between the main study variables and potential covariates can be found in Table 4. With regard to potential covariates, we found that a higher percentage of students of immigrant descent in class was associated with less concern about appearing racist and more cultural diversity related self-efficacy. In addition, having more intergroup friendships was related with less cultural diversity related stress and more cultural self-efficacy, job satisfaction and teacher support of students' needs for relatedness and autonomy. In contrast, age, gender and the teachers' own immigrant descent were not associated with any of our main study variables. Thus, only percentage of students of immigrant descent and intergroup friendship were included as covariates in the bSEM.

**Table 4***Bayesian correlation table of study variables*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)	<i>r</i> (BF)
1. Concern about appearing racist										
2. Cultural diversity related self-efficacy	-.20 (11095)									
3. Cultural diversity related stress	.20 (5524)	-.32 (1.10 e+12)								
4. Job satisfaction	-.04 (0.16)	.18 (701)	-.07 (0.48)							
5. Teacher support of relatedness	-.21 (16815)	.41 (1.44 e+21)	-.20 (13877)	.36 (4.65 e+15)						
6. Teacher support of autonomy	-.11 (3.17)	.31 (1.06 e+11)	-.28 (2.46 e+8)	.19 (3936)	.44 (3.68 e+25)					
7. Age	-.07 (0.33)	.04 (0.17)	.10 (0.51)	.01 (0.12)	.01 (0.12)	.05 (0.19)				
8. Gender	-.05 (0.18)	.04 (0.98)	.04 (0.14)	.06 (0.29)	.20 (6941)	.08 (0.49)	.09 (0.73)			
9. Immigrant descent	-.01 (0.10)	.07 (0.37)	-.01 (0.11)	.01 (0.10)	.06 (0.29)	.04 (0.14)	-.06 (0.22)	.00 (0.10)		

10. % Students of immigrant descent	-.14 (17.96)	.21 (15968)	-.00 (0.10)	-.00 (0.10)	.08 (0.76)	.07 (0.46)	-.09 (0.51)	-.02 (0.11)	.03 (0.14)	
11. Intergroup friendships	-.09 (0.82)	.20 (4962)	-.13 (9.76)	.09 (1.08)	.13 (7.78)	.13 (6.48)	-.15 (8.01)	-.05 (0.17)	.06 (0.24)	.09 (1.09)

*Note.* N ranges between 375 and 566 for the correlations included in this table. A BF greater than 1 indicates evidence for the H1 (there is an association between the two variables), while a BF lower than 1 indicates evidence for the H0 (there is no association).  $BF < 1/30$  is strong evidence for the H0,  $BF < 1/10$  is moderate evidence for the H0, and  $BF < 1/3$  is weak evidence for the H0.  $BF > 3$  is weak evidence for the H1,  $BF > 10$  is moderate evidence for the H1, and  $BF > 30$  is strong evidence for the H1. E+n denotes exponential notation, in which e (exponent) multiplies the preceding number by 10 to the nth power.

### 5.3.2 Structural equation model – model fit

The associations of the structural equation model (model 1) including standard deviation and credible intervals can be found in Table D4. In order to calculate incremental fit indices a default bSEM standard null model, the independence model, was fitted to the data and compared with subsequent models. However, model fit indices suggested that model 1 has an overall poor fit (Table 5). Therefore, a second model (model 2) including only the significant associations of model 1 was computed. The same uninformative priors as in model 1 were used as to not bias the results of model 2.

The BRMSEA indicates an acceptable fit and the BTLI, BNFI and BCFI a good fit for model 2 (Table 5). As BIC values of model 2 are smaller than those of model 1 and the null model ( $BIC_{\text{Null model}} = 29890.29$ ), model 2 should be preferred over model 1 and the null model. This is also supported by the log-Bayes Factor, which indicates that while the null model is preferred over model 1, model 2 has a better fit than model 1 and the null model. Therefore, model 2 not only has an acceptable to good model fit, it also describes the data better than the null model or model 1 – and was thus treated as our final model. The associations of our final structural equation model (model 2) including standard deviations and credible intervals can be found in Table 6.

**Table 5**

*Model fit indices and model comparison (N = 584)*

	Baseline model	BRMSEA	BTLI	BCFI	BNFI	BIC	log-Bayes Factor
Model 1	Null model	0.00	0.23	1.00	0.29	29877.08	56.83
Model 2	Null model	0.06	1.29	1.29	1.49	29822.99	-1.80
	Model 1	0.06	1.38	1.40	1.70	29822.99	-58.47



**Table 6***Regression coefficients of the model 2, including only significant paths of model 1 (N = 584)*

Regression	Posterior estimate	Posterior SD	Credible interval
<b>Concern about appearing racist</b>			
Percentage in of students with a migration background	<b>-.07</b>	0.03	[-.12 ; -.01]
Intergroup friendships	<b>-.09</b>	0.04	[-.18 ; -.01]
<b>Cultural diversity related self-efficacy</b>			
Concern about appearing racist	<b>-.12</b>	0.04	[-.19 ; -.05]
Percentage in of students with a migration background	<b>.11</b>	0.02	[.07 ; .16]
Intergroup friendships	<b>.14</b>	0.03	[.08 ; .20]
<b>Cultural diversity related stress</b>			
Concern about appearing racist	<b>.19</b>	0.06	[.08 ; .30]
Intergroup friendships	<b>-.19</b>	0.05	[-.29 ; -.10]
<b>Job satisfaction</b>			
Cultural diversity related self-efficacy	<b>.20</b>	0.05	[.11 ; .29]
<b>Teacher support of student relatedness</b>			
Concern about appearing racist	<b>-.06</b>	0.02	[-.10 ; -.02]
Cultural diversity related self-efficacy	<b>.31</b>	0.04	[.24 ; .39]
<b>Teacher support of student autonomy</b>			
Cultural diversity related self-efficacy	<b>.31</b>	0.05	[.22 ; .41]
Cultural diversity related stress	<b>-.06</b>	0.03	[-.12;-.01]

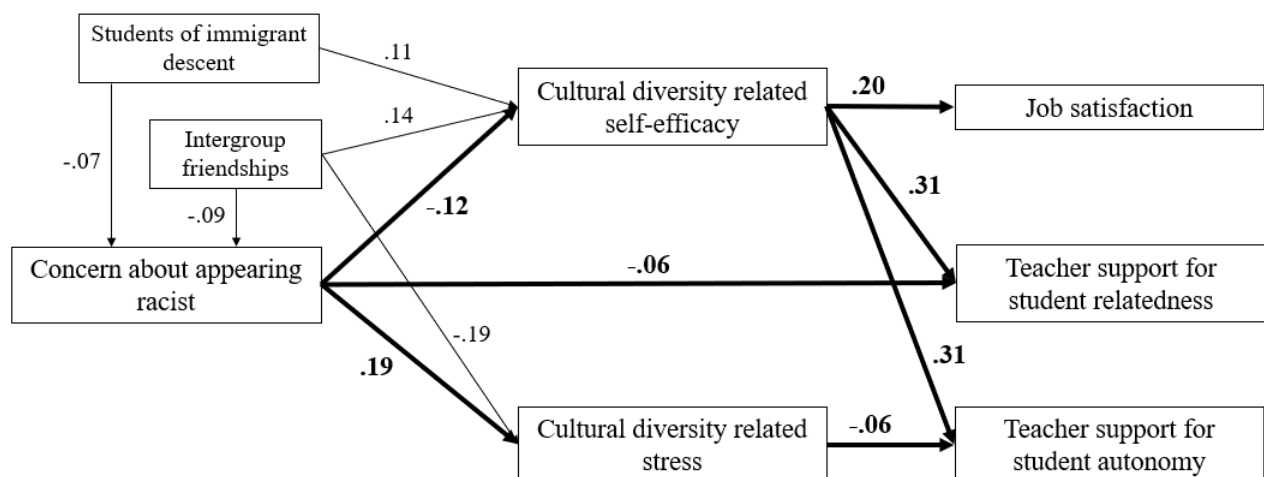
*Note.* Significant paths are marked in bold.

### 5.3.3 Structural equation model – main results

As seen in Fig. 2, regression coefficients showed that teachers' concern about appearing racist was associated with more cultural diversity related stress and less cultural diversity related self-efficacy, thus confirming our H1a and H1b. While there was no significant direct association between cultural diversity related stress and job satisfaction, disconfirming our H2a, more cultural diversity related self-efficacy was linked to higher job satisfaction in teachers, thus supporting our H2b. Our hypotheses that teachers who are less self-efficacious and feel more stress in relation to cultural diversity, are also less supportive of students' needs for relatedness and autonomy were partly confirmed: More cultural diversity related stress was related to less teacher support of student autonomy, but unrelated to teacher support of student relatedness, thus supporting H3c but not H3a. More cultural diversity related self-efficacy was related to more teacher support of both student relatedness and autonomy, supporting both H3b and H3d.

**Figure 6**

*Final Bayesian structural equation model (model 2, N = 584)*



*Note:* Includes only significant associations of model 1 and controls for percentage of students of immigrant descent and intergroup friendships. Paths between main study variables are shown with arrows in bold.

### **5.3.4 Covariates**

With regard to our covariates, the results of the bSEM (model 2) show that teachers who had more students of immigrant descent in their class and more intergroup friendships also reported experiencing less concern about appearing racist, and more self-efficacy teaching in culturally diverse classrooms. In addition, more intergroup friendships were related to lower feelings of cultural diversity related stress in school.

### **5.3.5. Mediation analyses**

Subsequent mediation analyses showed that cultural diversity related self-efficacy acted as a partial mediator between concern about appearing racist and teacher support of student relatedness and autonomy. Moreover, mediation analyses showed that cultural diversity related stress acted as a full mediator between concern about appearing racist and teacher support of student autonomy. Finally, while more concern about appearing racist was related to lower cultural diversity related self-efficacy and lower cultural diversity related self-efficacy was related to less job satisfaction, self-efficacy did not mediate the relationship between concern about appearing racist and job satisfaction.

## **5.4 Discussion**

As cultural diversity is increasing in society and in schools around the world, teachers interact more frequently with students of different cultural backgrounds and may thus also experience intergroup anxiety more frequently. In light of this, using survey data from school teachers in Germany, we investigated possible consequences of teachers' concern about appearing racist as one form of intergroup anxiety (Stephan, 2014), which is particularly relevant in the school context. Specifically, we looked at the associations of concern about appearing racist with teachers' cultural diversity related stress and self-efficacy, as important affective consequences of teachers in the school context. Furthermore, we examined more general indicators of teacher functioning, by investigating whether in turn more cultural diversity related stress and lower cultural diversity related self-efficacy are associated with

less job satisfaction and less support of students' psychological needs for relatedness and autonomy.

Results indicate that teachers' concern about appearing racist when interacting with students is associated with negative outcomes for teachers themselves and the ability to support their students. As expected, teachers who are more concerned about appearing racist experienced more cultural diversity related stress (H1a) and less cultural diversity related self-efficacy (H1b). Furthermore, while cultural diversity related stress was not related to less job satisfaction (H2a), teachers who felt less self-efficacious in culturally diverse classrooms, reported being less satisfied with their jobs (H2b). In regard to teacher support of student needs, cultural diversity related stress was not associated with support of students' needs for relatedness (H3a). However, when teachers felt less self-efficacious in culturally diverse classrooms, they also reported supporting students' needs for relatedness less (H3b), and self-efficacy mediated the relationship between more concern about appearing racist and less support of students' needs for relatedness. Lastly, when teachers experienced more concern about appearing racist, they also supported students' needs for autonomy less, which was mediated by an increase in cultural diversity related stress (H3c) and a decrease in cultural diversity related self-efficacy (H3d).

Adding to previous mostly US-based research on the concern about appearing racist (Godsil & Richardson, 2017; Tropp & Rucinski, 2022), our study shows that the concern about appearing racist is also a worry for teachers in Germany, a context in which race and racism are discussed mainly in the historical context of the Holocaust, and are not openly talked about as influencing present social inequalities. Further complementing US-based research on intergroup anxiety (Godsil et al., 2014; Stephan, 2014), the concern about appearing racist is indeed linked to negative affective experiences of stress and self-efficacy for teachers in Germany.

We add to the existing literature by showing that intergroup anxiety, and specifically the concern about appearing racist, is not just associated with an increase in general stress (Godsil & Richardson, 2017; Stephan, 2014), but is linked to cultural diversity related stress and self-efficacy. Furthermore, we extend research on intergroup anxiety to include not only the immediate affective consequences (in the context of diversity), but show that these affective consequences can translate into more general issues of teacher functioning. International research has robustly shown that teachers' stress and self-efficacy are important for both teachers' own well-being as well as their students (Caprara et al., 2003; Gutentag et al., 2018; Klassen & Chiu, 2010; Kyriacou, 1987; Tschannen-Moran & Hoy, 2001). The importance of stress and self-efficacy as relevant conditions for teachers and students could be replicated in the current study by showing implications for job satisfaction and teacher support of student needs.

Our study also adds to the growing body of literature showing that contrary to popular belief, it is not cultural diversity itself that negatively affects teachers, but rather their evaluations and perceptions of cultural diversity in the classroom and the worries associated with it (e.g., Gutentag et al., 2018). When teachers react to cultural diversity with worries of being evaluated as racist by their students, this evaluation rather than the presence of cultural diversity per se can have negative affective consequences such as increased stress and reduced self-efficacy, eventually affecting their functioning in the job as evidenced by lower job satisfaction and lower teacher support of student needs. Furthermore, our results suggest that the more students of immigrant descent teachers teach, the less they are concerned with appearing racist and the more culturally related self-efficacious they feel. Taken together, these findings are in line with intergroup contact theory (Allport, 1954; Pettigrew & Tropp, 2008) and research on the benefits of diversity in schools (Graham, 2018), showing that cultural diversity per se does not negatively affect teachers but on the contrary, is associated with positive outcomes. As classrooms are getting more diverse, this is an important finding

relating to teachers experiences in the classroom and the evaluation of cultural diversity in schools.

Although contradictory to our expectations only cultural diversity related self-efficacy and not stress was related to job satisfaction, this further highlights the importance of self-efficacy for general teacher functioning and job satisfaction in particular. Indeed, previous research also found that self-efficacy predicts job satisfaction over and above stress (Caprara et al., 2003). However, taken together, our research findings suggest that concern about appearing racist and its associations with stress, self-efficacy and job satisfaction play a role in why teachers today are experiencing high levels of burn-out and early retirement in an increasingly diverse school context (Dubeld et al., 2019; Glock et al., 2019; Gutentag et al., 2018).

Furthermore, besides associations with teacher outcomes, concern about appearing racist is also linked with less teacher support of student autonomy through more cultural diversity related stress and less cultural diversity related self-efficacy, and to less teacher support of student relatedness through less cultural diversity related self-efficacy. This indicates that when experiencing more stress and lower self-efficacy out of concern about appearing racist, teachers may have more negative interactions and relationships with students (Godsil & Richardson, 2017) as well as use more controlling than autonomy supportive teaching practices in the classroom (Zee & Koomen, 2016). This can have detrimental effects on students, such as decreased student well-being, motivation, and academic achievement (Deci & Ryan, 2000, 2008; Soenens & Vansteenkiste, 2005, 2010).

Contradictory to our expectations, concern about appearing racist was not related to teacher support of student relatedness via increased cultural diversity related stress. This association suggests that while experiencing cultural diversity related stress, teachers do not perceive the student-teacher relationship to suffer. Teachers report being able to preserve a good relationship with their students even when they are under stress, and that they are still

able to support the need for relatedness in students. This is in line with another study, that shows that teachers may even show more warmth towards their students when experiencing stress or burnout (Bottiani et al., 2019). This could suggest that teachers who experience stress may exhibit ‘compensating’ behavior, such as more warmth and care towards students. In contrast, most research with teacher data (e.g., Khani & Mirzaee, 2015; Skaalvik & Skaalvik, 2017) and teacher and student data (e.g., Ramberg et al., 2020) has shown, that teacher stress leads to lower-quality relationships with students. It is possible, that our findings, as well as those by Bottiani et al. (2019), are a result of an overestimation of teachers, as both studies include only self-assessments of teachers. Teachers have been found to evaluate the relationship to their students more positively than the students themselves. For example, a study by Brekelmans et al. (2011) with over 6000 Dutch teachers and reports of one class of their students each, shows that 66% of teachers overestimate the quality of their relationship with their students.

In sum, these findings highlight the need for more studies on intergroup anxiety and specifically the concern about appearing racist in the school context as it may have detrimental consequences for teachers and students. Concern about appearing racist appears to be associated with immediate affective consequences for teachers in Germany in the context of diversity, namely decreased diversity related self-efficacy and increased diversity related stress, which are important teacher outcomes. These may translate into more general issues of teacher functioning, specifically teachers being less satisfied with their jobs and being less able to support students’ needs.

#### ***5.4.1 Limitations and future research***

Our study has some methodological limitations. First, our cross-sectional questionnaire study does not allow us to make any causal claims concerning the direction of effects. For example, it would be important to verify that concern about appearing racist reduces cultural diversity related self-efficacy, rather than a lack of cultural diversity related

self-efficacy leaving teachers concerned about appearing racist. Moreover, many theorized associations (and their directionality) are based on physiological and behavioral processes, which we were not able to assess using a survey. To address this shortcoming, future research should investigate longitudinal relations amongst these variables, as well as use additional experimental methods, in order to investigate the underlying processes, that we expect explain the associations between concern about appearing racist and other outcomes. This could include measuring teachers' physiological stress via salivary cortisol levels or using video observations to capture teacher-student interactions in situations in which they are concerned vs. not concerned about appearing racist. Longitudinal and experimental studies can also provide knowledge on where to initiate effective interventions to break the chain from, for instance, being more concerned about appearing racist to lower teacher self-efficacy or support of student needs.

However, as stated earlier, the concern about appearing is related to (negative) feedback loops (Godsil & Richardson, 2017), where prior intergroup experiences and cognition (e.g., attentional bias, self-efficacy) likely influences the concern about appearing racist, and the concern about appearing racist also influences future intergroup experiences and cognition. This suggests that longitudinal studies would find bi-directional relationships between the concern about appearing racist and cultural diversity related self-efficacy, in which it is most effective to intervene with a two-pronged approach targeting both the reduction of the concern about appearing racist, as well as boosting cultural diversity related self-efficacy.

Another limitation of this study is that measures of teacher support of student needs showed only acceptable (rather than good) reliability. Future research should thus use the long version of the TASCQ measure (Iglesias García et al., 2020) to test which items work best in the German context or use an alternative measure with better reliability in this context.



Additionally, this study only measured teachers' own assessment on how they were supporting student needs for relatedness and autonomy. Going beyond teacher perceptions and controlling for teachers' possible overestimation of the quality of the relationship with their students, future research should assess to what extent the students themselves perceive that their need for relatedness and autonomy is supported by their teacher and whether these student perceptions are linked to teacher-reported concerns about appearing racist. Moreover, it would be important to investigate whether the impact of the concern about appearing racist on teachers' support of student needs vary between students based on their immigrant descent. If teachers experience more concern about appearing racist when interacting with students of immigrant descent and thus support students of immigrant descent less than their peers, this can negatively impact their well-being and academic engagement, and further widen the achievement gap between students of different cultural backgrounds (Harber et al., 2012).

Lastly, our sample includes teachers from all sixteen German federal states and is representative for German teachers in regard to most demographic features. Due to the location of the principal investigators there is an over-representation of East-German teachers in the sample. Yet, as intergroup anxiety and its consequences describe general psychological processes not limited to specific cultures or countries (Stephan, 2014), we do not expect our results to differ between teachers from East- and West-Germany.

#### ***5.4.2 Implications for reducing concern about appearing racist***

A promising avenue for future research to influence the school experiences of teachers and thus address their concern about appearing racist may be positive intergroup contact (Allport, 1954). There is a robust line of research showing that positive intergroup contact in and outside the school context is an important intervention point to alleviate intergroup anxiety (Godsil et al., 2014; Godsil & Richardson, 2017; Stephan, 2014), as it enhances knowledge about the other group, reduces anxiety about future intergroup contact, and increases perspective taking and empathy (Pettigrew & Tropp, 2008). Research on intergroup

anxiety has found, that having outgroup friends, i.e., frequent and mostly equal status intergroup contact, is related to lower anxiety (Stephan, 2014). This is also supported by the findings from the current study, indicating that more intergroup friendships are associated with lower levels of concern about appearing racist. Thus, positive intergroup experiences, also beyond the somewhat hierarchical contact they have with their students, may play a key role in reducing teachers' concern about appearing racist.

In line with this, incorporating more intergroup contact into teacher training and the education system could be a powerful tool to reduce concern about appearing racist in teachers. This could be done either through mandatory internships in culturally diverse schools (Emmanuel, 2005), promoting studying abroad more within teacher education (Sharma, 2020), or thought exercises in which positive intergroup contact is imagined (Di Bernado et al., 2017). More opportunities for intergroup contact of teachers would also exist if educational segregation was reduced already at school level, and also if there were more teachers of color. In Germany, students of immigrant descent are underrepresented in the academic school track, in universities, and only 8% of teachers in Germany are of immigrant descent (Statistisches Bundesamt, 2022b). By desegregating school systems, but also tackling educational inequality and promoting the teacher profession amongst students of color and/or of immigrant descent, teachers would have more intergroup contact throughout their studies at school and university, as well as amongst their teacher colleagues, and not only through contact with students at culturally diverse schools.

Furthermore, restructuring teacher training at university and beyond could also change the contextual factors influencing intergroup contact (Stephan, 2014) and further decrease teachers' concern about appearing racist. A lack of familiarity with the context and feelings of uncertainty were found to be important situational factors that can increase intergroup anxiety (Stephan, 2014); and, from previous research we know that teachers often do not feel adequately prepared to teach in culturally diverse schools (Gay, 2018). Therefore, including

more content about cultural diversity in the training for (pre-service) teachers, may reduce teachers' concern about appearing racist. For example, a study by Avery et al. (2009) found that intergroup anxiety was reduced in structured interactions with clearly defined roles and expectations. When teachers enter intergroup contact situations feeling adequately prepared, this may also lead to more positive intergroup contact, which in turn could further reduce their concern about appearing racist (Pettigrew & Tropp, 2008; Stephan, 2014). Thus, by addressing cultural diversity in teacher trainings, the personal experiences of teachers and contextual factors of intergroup contact could be changed to further reduce the concern about appearing racist.

However, eliminating the concern about appearing racist may not be the only solution. Our measure of concern about appearing racist does not investigate whether teachers are concerned about appearing racist out of genuine concern of harming someone or out of fear of being labeled racist. Future research should look into the underlying reasons as to why teachers are concerned about appearing racist, and whether the reasons qualify the negative impact this concern can have on, for instance, how stressed or self-efficacious teachers feel in culturally diverse classrooms. To some extent, concern about appearing racist may reflect that teachers are aware of racism and that they could (unintentionally) engage in racist acts; and, such an awareness for racism among teachers matters for addressing and combating racism in schools and society (Heberle et al., 2020).

Therefore, understanding the reasons behind being concerned about appearing racist may help design interventions to change concern about appearing racist from a destructive worry that negatively influences teacher well-being, job satisfaction and teacher-student interactions, into a constructive motivation to challenge structural racial inequities in our school systems. Changing teachers attitudes and related cognitions on topics of racism, bias and White privilege may reduce the negative consequences of the concern about appearing racist (Stephan, 2014), without eliminating the concern itself. One promising field may be

research on critical consciousness, which shows that greater awareness on topics of White privilege and racism can translate into constructive motivation to challenge racial inequities, such as greater support for affirmative action (for a review, see Heberle et al., 2020). This is complimented by research on intergroup anxiety, which has shown that programs for enhancing the awareness of implicit bias, including discussing concerns regarding the effects of bias as well as strategies to reduce bias, managed to successfully reduce implicit racial prejudice (Devine et al., 2012). Discussing the effects of implicit bias and learning anti-racist teaching strategies (e.g., grading anonymously) may consequently lessen teachers concern about appearing racist by increasing their self-efficacy in culturally diverse classrooms, while simultaneously reducing teaching practices that enhance educational inequities. Therefore, openly talking about structural racism and consequently also talking about concerns about appearing racist may help bypass its detrimental effects and channel it into actions against racism and structures of inequality in our school systems.

## **5.5 Conclusion**

In conclusion, our findings highlight the importance of studying concern about appearing racist also in school contexts where race and racism are not openly discussed, such as Germany, as they may contribute to social inequities in society today. The study sheds light on how intergroup anxiety could have immediate affective consequences for teachers in the context of diversity, which could translate into more general issues of teacher functioning. Further research is needed to deepen our understanding of the specific mechanisms and long-term consequences associated with the concerns about appearing racist; such research would provide valuable insights into how this concern can potentially impact teachers and students and allow for the development of targeted strategies to mitigate its detrimental effects. Desegregating our school systems and reducing barriers preventing people of color and/or of immigrant descent from becoming teachers, can create more opportunities for positive intergroup contact on both student and teacher level. This, in turn, could potentially reduce

concerns about appearing racist and help support both teachers' well-being and students' needs. Moreover, it is important to educate teachers on topics of White privilege and racism and create spaces to talk about the concern about appearing racist. Only then can we fully understand and utilize the concern about appearing racist in a productive way to become aware of and dismantle racism and systemic inequalities in the classroom and society.

**Appendix D: Do my students think I am racist?****Table D1***Sample descriptives compared to the population of German teachers*

	Sample (N = 584)	Population of German Teachers (N = 708,962)
<b>Age (in years)<sup>1</sup></b>		
under 30	17%	7%
30-34	14%	14%
35-39	9%	15%
40-44	8%	13%
45-49	10%	13%
50-54	19%	14%
55-59	16%	11%
60-64	7%	10%
over 65	0%	1%
<b>Gender<sup>1</sup></b>		
female	75%	73%
male	25%	27%
<b>Immigrant Descent<sup>2</sup></b>		
immigrant descent	16%	8%
non-immigrant descent	84%	92%
<b>Location of school: Federal States<sup>1</sup></b>		
Baden-Württemberg	3%	13%
Bavaria	2%	14%
Berlin	6%	5%
Brandenburg	9%	3%
Bremen	0.7%	0.9%
Hamburg	0.9%	3%
Hesse	3%	8%
Lower Saxony	3%	10%
Mecklenburg-Western Pomerania	1%	2%
North Rhine-Westphalia	0.5%	24%
Rhineland-Palatinate	0.5%	5%
Saarland	0.2%	1%
Saxony	13%	4%;

Saxony-Anhalt	47%	2%
Schleswig-Holstein	0.4%	3%
Thuringia	9%	2%
<b>Location of school: East/West Germany<sup>1</sup></b>		
East Germany		
West Germany	78%	13%
Berlin	15%	82%
	6%	5%
<b>Location of school: Inhabitants<sup>3</sup></b>		
in a very large city (> 500.000 inhabitants);	15%	-
in a large city (> 100.000 inhabitants);		
in a medium-sized city (> 20.000 inhabitants);	20%	-
in a small city (> 5.000 inhabitants);		
in a rural area (< 5.000 inhabitants)	30%	-
	18%	-
	17%	-
<b>Public school<sup>1</sup></b>		
private school	9%	11%
public school	91%	89%
<b>Public servant<sup>4</sup></b>		
non-public servant	58%	25%
public servant	42%	75%
<b>School types<sup>1</sup></b>		
primary school	32%	30%
academic track secondary school	30%	25%
vocational track secondary school	16%	18%
other	20%	27%
missing	2%	-

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*Note.* <sup>1</sup>Statistisches Bundesamt, 2022b; <sup>2</sup>Statistisches Bundesamt, 2020; <sup>3</sup>No information on population level available; <sup>4</sup>Bundeszentrale für politische Bildung, 2018. In East Germany, far fewer teachers are currently public servants than in West Germany.

**Table D2***Measures in English and German (language of data collection)*

	English	German
<b>Concern about appearing racist</b>	<p><b>When teaching a class with students who are different from you in terms of cultural background, to what extent do the following statements apply?</b></p> <p>I am concerned, that students may think I am prejudiced.</p> <p>I am concerned that I may not meet the needs of diverse groups of students.</p> <p>I am concerned that students may think I am racist if I question students' views.</p>	<p><b>Wenn Sie in einer Klasse mit Schüler*innen unterrichten, die sich in ihrer kulturellen Herkunft von Ihnen unterscheiden, inwieweit treffen die folgenden Aussagen zu?</b></p> <p>Ich bin besorgt, dass die Schüler*innen denken könnten, dass ich Vorurteile habe.</p> <p>Ich bin besorgt, dass ich möglicherweise die Bedürfnisse der vielfältigen Gruppen an Schüler*innen nicht erfüllen könnte.</p> <p>Ich bin besorgt, dass die Schüler*innen mich für rassistisch halten, wenn ich ihre Ansichten in Frage stelle.</p>
<b>Cultural diversity related self-efficacy</b>	<p><b>To what extent do the following statements apply to you?</b></p> <p>I can cope with the challenges of a multicultural classroom.</p> <p>I can adapt my teaching to the cultural diversity of the students.</p> <p>I can ensure that students with and without a migration background work well together.</p> <p>I can raise awareness for cultural differences amongst the students.</p>	<p><b>Inwieweit treffen folgende Aussagen auf Sie zu?</b></p> <p>Ich kann die Herausforderungen eines multikulturellen Klassenzimmers bewältigen.</p> <p>Ich kann meinen Unterricht an die kulturelle Vielfalt der Schüler*innen anpassen.</p> <p>Ich kann dafür sorgen, dass Schüler*innen mit und ohne Migrationshintergrund gut zusammenarbeiten.</p> <p>Ich kann die Schüler*innen für kulturelle Unterschiede zwischen ihnen sensibilisieren.</p>



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	I can contribute to reducing cultural stereotypes among the students.	Ich kann dazu beitragen, kulturelle Vorurteile zwischen den Schüler*innen abzubauen.
	I can communicate with parents of students whose mother tongue is not German.	Ich kann mit Eltern von Schüler*innen kommunizieren, deren Muttersprache nicht Deutsch ist.
<b>Cultural diversity related stress</b>	<b>To what extent do the following statements apply to you?</b>	<b>Inwieweit treffen folgende Aussagen auf Sie zu?</b>
	Dealing with students from different cultural backgrounds makes my job as a teacher more difficult.	Stets mit Schüler*innen mit unterschiedlichen kulturellen Hintergründen umzugehen, erschwert meine Arbeit als Lehrkraft.
	Working with students from different cultural backgrounds every day frustrates me.	Täglich mit Schüler*innen mit unterschiedlichen kulturellen Hintergründen zu arbeiten, frustriert mich.
	Dealing with parents of students from different cultural backgrounds makes my job as a teacher more difficult.	Stets mit Eltern von Schüler*innen mit unterschiedlichen kulturellen Hintergründen umzugehen, erschwert meine Arbeit als Lehrkraft.
<b>Job satisfaction</b>	<b>To what extent do the following statements apply to you and your work?</b>	<b>Inwieweit treffen folgende Aussagen auf Sie und Ihre Arbeit zu?</b>
	I enjoy my work.	Ich mache meine Arbeit gerne.
	I am proud to do my job.	Ich bin stolz darauf, meinen Beruf auszuüben.
	My job makes me happy.	Meine Arbeit bereitet mir Freude.
<b>Teacher support of student relatedness</b>	<b>To what extent do the following statements apply to your relationship with your students?</b>	<b>Inwieweit treffen folgende Aussagen auf Ihre Beziehung zu Ihren Schüler*innen zu?</b>
	I communicate with the students in my classes.	Ich tausche mich mit den Schüler*innen in meinen Klassen aus.
	The students in my classes can count on me to be there for them.	Die Schüler*innen in meinen Klassen können sich darauf verlassen, dass ich für sie da bin.

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When the students in my classes are not performing according to their ability, I take time to help them.

I have little access to the students in my classes.

I know a lot about what keeps the students in my classes busy.

**Teacher support of student autonomy**    **To what extent do the following statements apply to your relationship with your students?**

I encourage the students in my classes to think about how the subject matter might be useful to them.

I explain to the students in my classes why we learn certain things in school.

My general approach is to give the students in my classes as few choices as possible.

It is better not to give the students in my classes too many choices.

Wenn die Schüler\*innen in meinen Klassen nicht entsprechend ihres Könnens abschneiden, nehme ich mir Zeit um ihnen zu helfen.

Ich habe wenig Zugang zu den Schüler\*innen in meinen Klassen.

Ich weiß viel darüber, was die Schüler\*innen in meinen Klassenbeschäftigt.

**Inwieweit treffen folgende Aussagen auf Ihre Beziehung zu Ihren Schüler\*innen zu?**

Ich ermutige die Schüler\*innen in meinen Klassen, darüber nachzudenken, wie die Lehrinhalte für sie nützlich sein könnten.

Ich erkläre den Schülern\*innen in meinen Klassen, warum wir in der Schule bestimmte Dinge lernen.

Meine generelle Herangehensweise ist es, den Schüler\*innen in meinen Klassen so wenig Wahlmöglichkeiten wie möglich zugeben.

Es ist besser, den Schüler\*innen in meinen Klassen nicht zu viele Wahlmöglichkeiten zu geben.

**Table D3***Regression coefficients of the mediation analyses (N = 584)*

Regression	Posterior estimate	Credible interval
Job satisfaction		
Concern about appearing racist	-0.02	[-0.08; 0.05]
Job satisfaction		
Concern about appearing racist	0.01	[-0.06; 0.07]
Cultural diversity related self-efficacy	<b>0.16</b>	[0.08; 0.25]
Teacher support of student relatedness		
Concern about appearing racist	<b>-0.12</b>	[-0.17; -0.08]
Teacher support of student relatedness		
Concern about appearing racist	<b>-0.08</b>	[-0.12; -0.04]
Cultural diversity related self-efficacy	<b>0.29</b>	[0.23; 0.34]
Teacher support of student autonomy		
Concern about appearing racist	<b>-0.08</b>	[-0.13; -0.02]
Teacher support of student autonomy		
Concern about appearing racist	-0.04	[-0.09; 0.02]
Cultural diversity related self-efficacy	<b>0.26</b>	[0.19; 0.33]
Teacher support of student autonomy		
Concern about appearing racist	-0.04	[-0.09; 0.01]
Cultural diversity related stress	<b>-0.18</b>	[-0.24; -0.13]

*Note.* Significant paths are marked in bold.

**Table D4***Regression coefficients of the hypothesized structural equation model (N = 584)*

Regression	Posterior estimate	Posterior SD	Credible interval
<b>Concern about appearing racist</b>			
Percentage in of students with a migration background	<b>-.07</b>	0.03	[-.12; -.01]
Intergroup friendships	<b>-.10</b>	0.04	[-.18; -.01]
<b>Cultural diversity related self-efficacy</b>			
Concern about appearing racist	<b>-.11</b>	0.04	[-.18 ; -.04]
Percentage in of students with a migration background	<b>.12</b>	0.02	[.08 ; .16]
Intergroup friendships	<b>.14</b>	0.03	[.08 ; .20]
<b>Cultural diversity related stress</b>			
Concern about appearing racist	<b>.18</b>	0.06	[.07 ; .29]
Percentage in of students with a migration background	-.04	0.03	[-.10 ; .03]
Intergroup friendships	<b>-.18</b>	0.05	[-.29 ; -.08]
<b>Job satisfaction</b>			
Concern about appearing racist	.03	0.04	[-.05 ; .10]
Cultural diversity related self-efficacy	<b>.22</b>	0.05	[.12 ; .33]
Cultural diversity related stress	.00	0.03	[-.06 ; .06]
Percentage in of students with a migration background	-.03	0.02	[-.08 ; .01]
Intergroup friendships	.04	0.03	[-.03 ; .10]
<b>Teacher support of student relatedness</b>			
Concern about appearing racist	<b>-.07</b>	0.02	[-.12 ; -.02]
Cultural diversity related self-efficacy	<b>.32</b>	0.04	[.24 ; .40]
Cultural diversity related stress	-.03	0.02	[-.07 ; .01]
Percentage in of students with a migration background	-.03	0.01	[-.05 ; .00]
Intergroup friendships	.00	0.02	[-.04 ; .04]

## Teacher support of student autonomy

Concern about appearing racist	-0.06	0.03	[-.13 ; .00]
Cultural diversity related self-efficacy	<b>.29</b>	0.05	[.19 ; .39]
Cultural diversity related stress	<b>-.07</b>	0.03	[-.12;-.01]
Percentage in of students with a migration background	-0.00	0.02	[-.04 ; .03]
Intergroup friendships	.01	0.03	[-.04 ; .07]

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*Note.* Significant paths are marked in bold.

## **6. General Discussion**

The overarching goal of this dissertation was to explore the relationship between adolescents' autonomy, relatedness and cultural identity in the German school context. Specifically, I pursued four research aims: (1) to explore what autonomy and relatedness mean to culturally diverse adolescents, while investigating possible cultural variations, (2) to examine how autonomy and relatedness satisfaction is related to the development of different aspects and processes of cultural identity, (3) to investigate whether autonomy satisfaction and relatedness satisfaction of adolescents in the school context will enhance the efficacy of the Identity Project intervention on heritage cultural identity development, and (4) to study relations between teachers' concern about appearing racist and their self-perceived ability to support of students' autonomy and relatedness.

To pursue these research aims, four empirical studies were conducted. These studies drew on three datasets collected with culturally diverse 7<sup>th</sup> and 9<sup>th</sup> graders in Germany, and one dataset collected with teachers in Germany. In the subsequent segments, I summarize the findings, linking them to the research aims of my dissertation. I then evaluate the strengths and limitations, and suggest directions for future research. Lastly, I draw practical implications from my findings and present a conclusion.

### **6.1 Research Aim 1**

#### ***6.1.1 Overview of Findings***

My first research aim was to explore what autonomy and relatedness mean to culturally diverse adolescents. Although literature acknowledges autonomy and relatedness as basic psychological needs, with variations in autonomy and relatedness across cultures and (cultural) contexts, there remains a limited understanding of what these concepts mean in the lives of culturally diverse adolescents. Therefore, I focused on adolescents' specific conceptualizations of autonomy and relatedness, and investigated possible cultural variations between different groups of adolescents.

In Chapter 2, I utilized semi-structured interviews alongside reflexive thematic analysis to examine the significance of autonomy and relatedness in 9<sup>th</sup> grade adolescents' lives, including adolescents of non-immigrant descent, second-generation adolescents of immigrant descent and first-generation immigrant adolescents with experiences of flight. All adolescents articulated a profound yearning for and dependence on close relationships, as well as a wish for autonomy, independence, and being able to make their own choices. Although the longing for autonomy is not as strong as the value they assign to relatedness, it supports the notion that both autonomy and relatedness are basic psychological needs (Ryan & Deci, 2017). Consistent with existing literature, slight variations in the significance and negotiation of autonomy were observed among adolescents from diverse cultural backgrounds (Coşkan et al., 2016; Kağıtçıbaşı, 2005). For example, independence as a developmental goal was more prominently emphasized among adolescents of German descent compared to their first-generation immigrant peers with experiences of flight from Syria.

These findings are in line with the results of Chapter 3, where I used a mixed-methods approach to analyze essays of 7<sup>th</sup> graders to investigate which elements of autonomy and relatedness early adolescents value. The study explored the content and co-occurrence of autonomy and relatedness in adolescents identifying as “German-only”, “German-and-non-German”, or “non-German”. Qualitative and quantitative results highlighted autonomy and relatedness as multifaceted and separate psychological needs, that are both important to culturally diverse adolescents. Depending on the specific content of autonomy and relatedness, autonomy and relatedness may co-occur, oppose or reinforce each other. Only small differences emerged across the three groups of self-identifiers as to what aspects of autonomy and relatedness were written about and how often.

Taken together, these findings emphasize autonomy and relatedness as multifaceted and separate basic psychological needs, that are both important to all adolescents. Only small cultural variations emerged in the importance and negotiation of autonomy, as well as the co-

occurrence of autonomy and relatedness. These results nonetheless highlight the need for a balanced and culturally sensitive approach to supporting both autonomy and relatedness in all adolescents.

### ***6.1.2 Strengths, Limitations, and Implications for Future Research***

One strength of my approach includes using both qualitative and quantitative methodologies, providing a comprehensive exploration of autonomy and relatedness among culturally diverse adolescents. Qualitative data allowed me to capture rich and more nuanced perspectives of culturally diverse adolescents and enhances our understanding of autonomy and relatedness during adolescence. Additionally, our approach rejects historical individualistic views on autonomy and relatedness, offering a more holistic understanding by prioritizing both needs (Kağıtçıbaşı, 2013). The use of quantitative measures, such as correlations and cluster analyses, supports and reinforces the findings obtained through qualitative approaches. Furthermore, the studies group adolescents in terms of both immigrant descent and cultural self-identification, undertaking a nuanced examination of cultural influences on autonomy and relatedness. The consistency of limited group differences in these two distinct methods of grouping lends strong support to the conclusion of minimal variations among culturally diverse adolescents. Moreover, the inclusion of two age groups, early and mid-adolescents, enriches the scope of our findings, offering insights into potential developmental variations. While the value placed on relatedness remained consistent across both age groups, distinctions emerged in how autonomy was conceptualized and emphasized. Early adolescents highlighted more hedonistic aspects of autonomy, such as the importance of having fun, whereas middle adolescents placed greater emphasis on the lack of agency concerning their future, indicating a shift in priorities and concerns as adolescents progress through this developmental stage.

One limitation of the studies is that interviews and essays were not explicitly designed to focus on autonomy, relatedness, and their compatibility, but were rather part of larger



research projects. In both instances, adolescents were provided with a predetermined list of topics, restricting the range of subjects they could identify as important in their lives. Future research may benefit from expanding on specific prompts that directly inquire about instances where autonomy and relatedness are experienced as (non-)compatible. This approach, as well as longer, more open essays, could offer a more detailed understanding of how adolescents navigate and integrate these two needs.

## **6.2 Research Aim 2**

### ***6.2.1 Overview of Findings***

My second research aim sought to explore the relationship between autonomy and relatedness satisfaction and various processes of cultural identity development in adolescents. While previous theoretical (Ryan & Deci, 2017) and empirical studies (e.g., Luyckx et al., 2017) have delved into the role of need satisfaction as an energizing mechanism for adolescents' and emerging adults' vocational and global identity development, there is a notable gap in understanding how autonomy and relatedness satisfaction may promote adolescents' cultural identity development.

In Chapter 3, I used a mixed-methods approach to combine adolescents' essays with their questionnaire data on heritage cultural and national identity commitment/resolution. Autonomy and relatedness clusters were based on the frequencies of mentioning different aspects of autonomy and relatedness, and related to their cultural identity commitment/resolution. Only one association was discovered between clusters of autonomy and relatedness and the commitment to heritage cultural or national identity. Specifically, among adolescents who identify as German-only, those within the low autonomy cluster reported greater heritage cultural identity commitment/resolution compared to those in the no autonomy cluster. Surprisingly, high autonomy cluster adolescents did not show more identity commitment/resolution than the no autonomy cluster, calling into question the assumption of

a linear relationship between autonomy mentions and heritage cultural identity commitment/resolution.

In Chapter 4 I used longitudinal survey data (three time points over the course of 16 weeks), following adolescents taking part in the Identity Project, as well as adolescents in the comparison group who took part in regular classroom activities. Irrespective of intervention condition, the findings revealed that autonomy and relatedness satisfaction significantly shape adolescents' heritage cultural identity development. Academic intrinsic motivation was associated with more heritage cultural identity exploration, while a sense of belonging with peers was associated with more affirmation. No association between need satisfaction and heritage cultural identity commitment/resolution was found.

The studies indicate that autonomy and relatedness satisfaction play an important role also in heritage cultural identity development. However, the findings suggest that the satisfaction of autonomy or relatedness alone may not be sufficient to influence cultural identity commitment/resolution, only exploration and affirmation. This could be due to a lack of structured incentives for adolescents to engage with their cultural identity, which may be needed for the internalization of cultural identity to take place.

### ***6.2.2 Strengths, Limitations, and Implications for Future Research***

One strength in our approaches used to explore the relationship between autonomy and relatedness satisfaction and cultural identity development is the inclusion of various aspects of cultural identity, such as heritage cultural and national identity commitment/resolution in Chapter 3 and heritage cultural identity exploration, commitment/resolution, and affirmation in Chapter 4. This contributes to a detailed understanding of the different underlying mechanisms of cultural identity. Additionally, the use of longitudinal measures in Chapter 4 strengthens the validity of our findings, enabling us to examine the dynamic trajectories of heritage cultural identity development over time.

These findings indicate that autonomy and relatedness play an important role in cultural identity development. Moreover, they emphasize the need to differentiate between various identity development processes. The results suggest that autonomy may be important for propelling adolescents' exploration of their identity, while meaningful connections with peers may be vital for affirming their heritage cultural identity. Further, a lack of substantial associations between autonomy or relatedness satisfaction and cultural identity commitment/resolution in both studies strengthens the conclusion that need satisfaction alone may not be enough for adolescents to commit to or resolve their heritage cultural or national identity.

However, in both empirical studies small clusters representing adolescents' autonomy and relatedness (Chapter 3) and heritage cultural identity trajectories (Chapter 4) emerged, posing challenges that may limit generalizability. Therefore, the results should be interpreted with caution. More research is needed with larger samples to confirm these findings and advance our understanding of the complex interplay between need satisfaction and cultural identity development during adolescence.

### **6.3 Research Aim 3**

#### ***6.3.1 Overview of Findings***

My third research aim was to explore whether autonomy and relatedness satisfaction of adolescents in the school context enhanced the efficacy of the Identity Project intervention on heritage cultural identity development. Previous studies have shown that the Identity Project intervention can promote ERI and heritage cultural identity development in the school context, however, as effects vary, it is important to investigate factors influencing the efficacy of the intervention.

In Chapter 4, I utilized longitudinal survey data from adolescents participating in the Identity Project to investigate how adolescents' satisfaction of autonomy and relatedness within the school environment related to their heritage cultural identity exploration,

commitment/resolution, and affirmation. Adolescents who experienced a stronger sense of peer belonging and reported positive teacher relationships (relatedness satisfaction) exhibited greater levels of identity exploration within the Identity Project. Furthermore, it was observed that only together with positive teacher-student relationships is the Identity Project likely to foster identity commitment/resolution and affirmation. Conversely, the relationship with perceived autonomy support by teachers showed an unexpected pattern; adolescents receiving autonomy support while participating in the Identity Project were more inclined towards lower levels of heritage cultural identity exploration. This could possibly reflect that autonomy support, though aimed at empowering adolescents, may potentially send assimilative messages that urge adolescents to conform to the broader cultural norms in German schools (Coşkan et al., 2016), leading to less exploration. In sum, the findings underscore the complexity of factors influencing the effectiveness of interventions on heritage cultural identity development and highlight the importance of considering autonomy and relatedness satisfaction in designing and implementing school-based programs.

### ***6.3.2 Strengths, Limitations, and Implications for Future Research***

Chapter 4 represents a pioneering effort in investigating the role of need satisfaction, specifically autonomy and relatedness, in the Identity Project. By longitudinally following the Identity Project, our study offers important insights into enhancing the efficacy of school-based interventions, particularly in the realm of heritage cultural identity development. However, unexpected results regarding the influence of autonomy support from teachers on low exploration trajectories highlight the need for additional studies and in-depth qualitative research to understand the underlying mechanisms. Moreover, the identification of small identity trajectory clusters and the impact of COVID-19 on missing data and measures, especially exploration, emphasize the necessity of replication with larger samples and careful interpretation of these findings.

Nonetheless, the outcomes carry significant implications for the Identity Project, and offer valuable insights for refining interventions. Notably, positive teacher-student relationships emerge as a crucial condition for achieving the beneficial outcomes associated with the Identity Project. The intervention, involving sensitive content and personal narratives, benefits from a secure, encouraging, and empowering environment facilitated by strong teacher-student relationships. Ultimately, these results contribute to the ongoing discourse on school-based interventions, underscoring the need for more research to gain a comprehensive understanding of autonomy and relatedness satisfaction in shaping heritage cultural identity development in adolescents.

## **6.4 Research Aim 4**

### ***6.4.1 Overview of Findings***

My fourth research aim was to study relations between teachers' concern about appearing racist and their self-perceived ability to support students' autonomy and relatedness. As a main socializing agent in adolescents' lives, teachers play an important role in supporting adolescents' needs for autonomy and relatedness, and thus adolescents' identity development. However, not much research has focused on how teachers' experiences in culturally diverse classrooms, specifically the concern about appearing racist, can affect their ability to support students' needs for autonomy and relatedness.

In Chapter 5, I used cross-sectional survey data of teachers in Germany to investigate this aim. As expected, findings indicated that the more concerned teachers were of being perceived as racist by their students, the less they reported being able to support their students' needs for autonomy (Tropp & Rucinski, 2022), due to higher cultural diversity related stress and lower cultural diversity related self-efficacy. Also, teachers who experienced more concern about appearing racist were less able to support their students' needs for relatedness, which is partially mediated by less cultural diversity related self-efficacy. In sum, these findings highlight that teachers' affective experiences in culturally

diverse classrooms may represent stressors for teachers that have detrimental consequences for students' cultural identity development, as teachers concerned about appearing racist may experience more culturally diversity related stress and less self-efficacy, and may therefore be less able to support students' needs for autonomy and relatedness (Ryan & Deci, 2020).

#### ***6.4.2 Strengths, Limitations, and Implications for Future Research***

The strength of our approach lies in the novelty of unraveling how teachers' affective experiences in culturally diverse classrooms influence their ability to support students' needs, particularly in relation to the basic psychological needs for autonomy and relatedness. So far there has been limited to no research focusing on how challenges that are specific to culturally diverse settings may compromise teacher support of students. By delving into the dynamics of the concern about appearing racist, we extend the current literature and offer a nuanced understanding of how teachers navigate these complexities in supporting students.

However, our study also has its limitations, particularly in the absence of student data. This limitation constrains our ability to comprehensively capture the reciprocal dynamics between teachers and students, hindering a more holistic understanding of the impact of teachers' concerns about appearing racist on students' need support of autonomy and relatedness. Future research endeavors should match teacher and student questionnaires or observe student-teacher interactions in the classroom.

Nonetheless, our findings provide valuable insights into how the concern about appearing racist can impact students within culturally diverse classrooms. If students' needs for autonomy and relatedness are not fulfilled by teachers, this may impact their cultural identity development (Chapter 4). Furthermore, it is crucial to explore whether the impact of this concern varies based on whether students are racially minoritized or majoritized. Teachers' unease about appearing racist may affect their support for racially minoritized students more than their racially majoritized peers, possibly amplifying disparities in well-being and academic engagement (Harber et al., 2012). Addressing these nuances in future

research is essential to prevent the widening of achievement gaps between racially minoritized and majoritized students.

## **6.5 Overarching Aim**

### ***6.5.1 Overview of Findings***

The overarching goal of this dissertation was to explore adolescents' basic needs for autonomy and relatedness in the German school context. Findings showed, that while cultural variations emerged in the importance, negotiation and co-occurrence of autonomy and relatedness, both needs are important to all adolescents, and can promote their cultural identity exploration and affirmation. Notably, positive teacher-student relationships in combination with school-based interventions are crucial to promote heritage cultural identity commitment/resolution. However, these findings also underscore the potential consequences of teachers' affective experiences in culturally diverse classrooms for students' cultural identity development: the concern about appearing racist may hinder teachers' ability to effectively support students' needs for autonomy and relatedness.

### ***6.5.2 Strengths, Limitations, and Implications for Future Research***

A big strength of this dissertation is that both a universalistic and contextual perspective was considered in the analyses. This research has helped develop insights into the importance of both autonomy and relatedness for optimal development of all adolescents (universalistic perspective). At the same time, analyses also accounted for differing meanings and co-occurrences of autonomy and relatedness across culturally diverse adolescents (contextual perspective). It is important to both recognize what is universally good for adolescent development and also to be cognizant of contextual-environmental demands on adolescents that may influence how the basic psychological needs are expressed or satisfied in different ways (Kağıtçıbaşı, 2013).

Another strength of this dissertation lies in its commitment to refrain from essentializing cultures by transcending simplistic dichotomies that categorize individuals into

those valuing autonomy vs. relatedness while exploring the interplay of adolescents' basic needs for autonomy and relatedness with cultural identity development in the school context. In a departure from traditional categories in cross-cultural research that often hinge on broad individualistic or collectivistic distinctions, this dissertation uses slightly more nuanced categories related to immigrant descent and cultural self-categorization of adolescents. The adoption of self-categorization in particular aims to empower adolescents by giving them agency in their classification, relying on their own cultural identity labels rather than grouping adolescents based on their place of birth or that of their parents.

However, both the categories related to immigrant descent and cultural self-categorization of adolescents have their own limitations. Also in this approach are very different cultural backgrounds grouped together as allegedly homogeneous groups. For instance, under the label of "non-German self-identification" a white, Christian adolescent who is racially majoritized and identifies as French, is categorized alongside an adolescent who is Muslim, racially minoritized, and identifies as Turkish. Despite their different cultural backgrounds and different experiences of discrimination within the German context, they are both placed within the same broad category of "non-German self-identification." Ideally, more specific groups such as "Muslim-German", a group that is highly marginalized in the German context, would provide a clearer understanding of these nuanced differences; however, such specificity was not feasible due to the limitations imposed by the sample size.

The employed categorizations fail to accurately portray the diverse cultural identities and experiences within these groups. In the qualitative study, we were able to enrich the broad categorization of immigrant descent by examining each participant in detail and appreciating the nuances of their individual experiences. However, this level of detailed examination is not feasible in quantitative research due to the constraints of larger sample sizes, which prioritize breadth over depth. Therefore, there is a need for constant critical reflection on the categories employed in research. If aiming at measuring individuals' diverse experiences within German



society, e.g., discrimination or exclusion from national identity, employed categories should reflect the experiences one is aiming to measure, rather than generational status or self-identification. One possibility would be comparing individuals based on the Foreigner Objectification Scale (Armenta et al., 2013), which better captures experiences of marginalization by measuring the extent that individuals are perceived as a foreigner regardless of their generational status, citizenship, or self-identification.

Further, this dissertation marks a pioneering effort by explicitly linking SDT to cultural identity development, recognizing the pivotal role cultural identity plays in the well-being of adolescents, particularly those who are racially minoritized. Understanding the ways to support adolescents in this critical developmental period is imperative, and the results of this dissertation shed light on the significant role of basic need satisfaction in this context. This research delves into diverse dimensions, examining various facets of relatedness, autonomy, and cultural identity development. Encompassing both national and heritage cultural perspectives, which is important in the German acculturation context, this dissertation explores different identity development processes of exploration, commitment/resolution, and affirmation. Notably, it stands as the first investigation to probe into how need satisfaction promotes cultural identity development, also during interventions, and to explore how teachers' experiences in culturally diverse classrooms may influence their ability to support students' needs for autonomy and relatedness.

While the findings present valuable insights, this dissertation underscores the need for a more holistic and comprehensive investigation, comprising the interplay of all these different facets. This involves taking into account data from both students and teachers as well as utilizing a larger scale longitudinal study. As development occurs over time, it is crucial to understand how autonomy, relatedness, and cultural identity evolve and interact across adolescence and different contexts. Such an approach can illuminate when and how specific support becomes especially pivotal for the development of adolescents' cultural identity.

## 6.6 Practical Implications

Based on our findings, it is imperative for psychology and education to acknowledge the significance of autonomy and relatedness for all adolescents. During this transition, it is crucial to move away from framing autonomy solely as separation and to recognize the equal importance of relatedness in adolescent well-being. The traditional individuation perspective that portrays separation and independence from parents as prerequisites for healthy adolescent development, often endorsed by teachers and psychologists, can inadvertently neglect the crucial need for relatedness (Ryan & Deci, 2000). Viewing a close relationship with parents as unhealthy and imposing individualistic assumptions of separation may, in reality, jeopardize the foundation of a healthy family dynamic, and pathologize parent-child relationships especially in racially minoritized adolescents, who may not view separation of parents as an important developmental goal (Kağıtçıbaşı, 2013). Therefore, there is a pressing need for psychologists and teachers to enhance their cultural sensitivity and cultivate a more comprehensive understanding of healthy development of adolescents, and how to best support this development. This entails recognizing the significance of both autonomy and relatedness, fostering a holistic approach that transcends individualistic assumptions about autonomy and a narrow emphasis on separation and allows for a more multifaceted, culturally sensitive understanding of autonomy and relatedness.

Our results highlight the importance of autonomy satisfaction in the school context, offering valuable insights for educators and psychologists. Adolescents who experience autonomy through academic intrinsic motivation feel a sense of freedom and agency, giving them the energy required for heritage cultural identity exploration (Luyckx et al., 2009). Teachers play a pivotal role in facilitating this process by providing autonomy support, which involves acknowledging and understanding students' wishes, preferences, and perspectives. Encouraging students to initiate and explore new activities or interests creates a supportive environment for personal exploration and differentiation (La Guardia, 2009).

Moreover, our findings emphasize the significance of relatedness for the affirmation of adolescents' heritage cultural identity. A strong sense of acceptance and belonging within the peer group contributes to a more positive image of their own heritage cultural identity (Rageliené, 2016), which in turn can serve a protective function for adolescents (Umaña-Taylor, 2016). While autonomy satisfaction may fuel exploration, peer relationships play a crucial role in affirming the cultural identity adolescents bring with them. Recognizing these distinct contributions of autonomy and relatedness in the school setting is vital for educators to tailor their support strategies. Cultivating an environment that nurtures both autonomy and meaningful peer connections can contribute positively to their cultural identity development and consequently enhance adolescents' well-being (Umaña-Taylor, 2016).

On the other hand, the results also show that need satisfaction alone is not always enough for heritage cultural identity development to occur. Autonomy and relatedness satisfaction were not related to cultural identity commitment/resolution outside of the intervention context. These findings underscore the transformative role of the Identity Project intervention in reshaping the relationship between satisfaction of relatedness and exploration of heritage cultural identity among adolescents. This suggests that structured incentives may be necessary next to autonomy and relatedness support to actively engage adolescents in identity processes. Therefore, satisfaction of the need for autonomy and relatedness in the school context should be coupled with opportunities for adolescents to explore their heritage cultural identity. This approach aims to prevent close relationships from inadvertently pressuring adolescents to conform to prevalent norms within their school context, and instead, fosters the development of their heritage cultural identity.

The importance of adolescents' autonomy and relatedness satisfaction also has implications for the efficacy of interventions designed to promote heritage cultural identity development in adolescents. Positive teacher-student relationships, in particular, are identified as a critical contextual condition for intervention effects. Within the context of the Identity

Project, these relationships provide fertile ground for adolescents to share personal experiences, confront sensitive topics, and navigate experiences of discrimination or alienation. Teacher-student relationships become a linchpin for adolescents' development, creating an environment where they feel secure, encouraged, and empowered during intervention activities (Walton & Yeager, 2020). Improving the efficacy of interventions like the Identity Project through positive teacher-student relationships may not only propel heritage cultural identity exploration and commitment/resolution, but can also play a crucial role in promoting adolescent well-being (Umaña-Taylor et al., 2014).

Finally, these results highlight the importance of establishing school settings, in which teachers are able to support their students' needs for autonomy and relatedness. Findings show that teachers' experiences in culturally diverse classrooms, namely their concern about appearing racist, and cultural diversity related self-efficacy and stress, have detrimental consequences for teachers and students. By implementing comprehensive diversity training programs for both pre-service and in-service teachers that equip teachers with resources and tools to recognize and address racism in the classroom, we can support teachers' needs in culturally diverse school settings. This is a necessity for them to be able to support students' needs for autonomy and relatedness, and thus their optimal development of cultural identity.

Crucial to recognize throughout all these considerations is that, although both autonomy and relatedness are indispensable for the well-being and development of all adolescents, it is essential to avoid transitioning from essentializing binary distinctions, such as individualism and collectivism, into an overly simplified understanding of the universal significance of autonomy and relatedness for all adolescents. SDT (Ryan & Deci, 2020) and contemporary (cross-)cultural theories (e.g., Kağıtçıbaşı, 2013) assert the universal significance of the basic psychological needs for autonomy, competence, and relatedness, while also acknowledging variations in the meaning, salience and interplay of these needs across different cultures. Therefore, cultural and individual differences in how autonomy and

relatedness are fulfilled must always be taken into account when working with adolescents. This necessitates a nuanced understanding of cultural variations and the concept of culture itself, which is vital for designing and implementing interventions that are specific and relevant to different target groups while also ensuring that interventions do not inadvertently harm students by othering them or exposing them to microaggressions.

## **6.7 Conclusion**

In conclusion, this thesis shines a spotlight on the experiences of autonomy and relatedness among adolescents within the German school context. It underlines autonomy and relatedness as basic psychological needs among culturally diverse adolescents, while also recognizing the influence of cultural backgrounds on their significance and negotiation. This thesis further highlights that the satisfaction of autonomy and relatedness in the school context plays a role in adolescents' heritage cultural identity development, and offers key insights on how to improve the efficacy of school-based interventions targeting adolescents. The satisfaction of autonomy and relatedness may promote heritage cultural identity exploration and affirmation, even without structured incentives to engage in heritage cultural identity development. However, combining strong teacher-student relationships with structured incentives to participate in heritage cultural identity development, as provided by initiatives like the Identity Project, may be needed to support adolescents in their cultural identity commitment/resolution. This underscores the importance of considering adolescents' need satisfaction when designing such interventions. The significance of teacher-student relationships for adolescent' cultural identity development in turn accentuates the importance of equipping teachers with the ability to support students' needs for autonomy and relatedness in the school context, by supporting teachers in culturally diverse classrooms. Overall, the findings advocate for the creation of school environments that facilitate the support of both autonomy and relatedness, as they play an important role in adolescent cultural identity development. However, it is imperative to adopt tailored approaches for fostering autonomy

and relatedness satisfaction in school environments, recognizing their universal importance for optimal development while also acknowledging that the ways in which these needs are satisfied may differ among culturally diverse adolescents.

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**Eidesstattliche Erklärung**

Hiermit erkläre ich, Sophie Ingrid Elisabeth Hölscher, an Eides Statt, dass ich die vorliegende Dissertation mit dem Titel „The Role of Autonomy and Relatedness in the German School Context for Adolescents’ Cultural Identity Development“ eigenständig verfasst habe. Ich versichere, dass ich keine anderen als die von mir angegebenen Quellen und Hilfsmittel verwendet habe und dass ich alle Stellen, die direkt aus anderen Werken übernommen oder inhaltlich angelehnt sind, deutlich als solche gekennzeichnet habe.

Weiterhin erkläre ich, dass ich bisher keine Promotionsversuche unternommen habe, die ohne Abschluss beendet wurden, und dass diese Dissertation in der gegenwärtigen oder in irgendeiner anderen Form noch keiner anderen Fakultät oder wissenschaftlichen Einrichtung zum Zweck der Erlangung eines akademischen Grades vorgelegt wurde.

Mir ist bewusst, dass eine falsche eidesstattliche Erklärung strafrechtliche Folgen nach sich ziehen und zur Aberkennung meines akademischen Grades führen kann.

Dresden, 12.04.2024