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Keeping a Comfortable Distance:

the Role of Intragroup, Intergroup and Cultural Factors in

the Choice of Interpersonal Distance

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Abstract

Managing a comfortable interpersonal distance is crucial for establishing

positive interpersonal relationships and promoting societal integration. However,

understanding the factors underlying the choice of interpersonal distance remains a

fundamental yet understudied topic in social psychology, particularly regarding the

limited research on the multifaceted influence of intragroup, intergroup, and cultural

factors on this choice. Accordingly, this dissertation bridges this gap by examining

these factors across the following chapters. Chapter 1 presented a brief overview of

the research, introducing the main goals of two empirical studies. Chapter 2 focused

on intragroup dynamics, examining the impact of social identification with

classmates, friends, and family on adolescents' choice of interpersonal distance, as

well as their involvement in bullying/cyberbullying behaviors. Results indicated that

identification with peer groups correlated with a shorter distance from unfamiliar

individuals. Moreover, high identification with family and classmates was related to

reduced engagement in bullying behaviors, with family identification being linked to

traditional bullying and both family and classmates identification being associated

with cyberbullying. Chapter 3 concentrated on intergroup dynamics and cultural

influence, addressing how Chinese and Italian adolescents' choice of interpersonal

distance was influenced by the combined effects of group membership and cultural

conceptions. The findings suggested that Chinese participants preferred a longer

distance with outgroup compared to ingroup members, while Italian participants

maintained consistent distance regardless of group affiliation. Notably, within the

Chinese sample, female participants maintained greater distance than male

participants when being exposed to a male target, a trend not observed among Italians.

Additionally, this study revealed that individuals increased their distance when

approached by outgroup members from the back instead of the front, highlighting the

interplay between group membership and direction of approach. Finally, Chapter 4

summarized and discussed these findings in light of their implications for facilitating

intergroup relations and intercultural communications in contemporary societies.

Keywords: Interpersonal distance, intragroup and intergroup relations, cultural

conceptions, social identification, group membership, collectivism, individualism, and

adolescence.

Contents

CHAPTER 1

General Introduction

"One cold winter's day, a number of porcupines huddled together quite closely in order through their mutual warmth to prevent themselves from being frozen. But they soon felt the effect of their quills on one another, which made them again move apart. Now when the need for warmth once more brought them together, the drawback of the quills was repeated so that they were tossed between two evils, until they had discovered the proper distance from which they could best tolerate one another."

—————Schopenhauer (Schopenhauer, 1851)

The above parable by Schopenhauer illustrates that hedgehogs need to maintain a certain distance to balance their desire for closeness with others and protect themselves. Similarly, in interpersonal exchanges, a comparable balance is required, which is reflected in maintaining appropriate interpersonal distance to satisfy the desire to communicate with others and preserve the integrity of one's space. This balance not only contributes to maintaining one's emotional well-being and respecting each other's boundaries, but is also conducive to the establishment of healthier and longer-lasting relationships (Sundstrom & Altman, 1976). Therefore, it is important to examine the role of interpersonal distance in understanding the dynamics of human social interactions.

I was highly motivated to pursue my Ph.D. at the University of Bologna, so I applied and enrolled in a project that aligned with my diverse interests, which encompassed the fields of social psychology, developmental psychology, and neuroscience. Fortunately, I had the opportunity to combine these different domains. One pivotal factor in neuroscience that I was very interested in is interpersonal distance. Through extensive literature review, I have found that interpersonal distance has important associations with several factors both in social psychology and developmental psychology. Fascinated by these connections, I delved deeper into investigating interpersonal distance, particularly during adolescence, as this is a pivotal period in which individuals expand their social worlds by interacting with different group members, and therefore adopting appropriate interpersonal boundaries during these interactions holds paramount importance. Upon presenting my research interests, professors thought that we should collaborate, so Prof. Francesca Frassinetti became my main supervisor while Prof. Annalisa Guarini and Prof. Monica Rubini were co-supervisors. Unfortunately, my main supervisor Prof. Francesca Frassinetti passed away and Prof. Monica Rubini became my new main supervisor and Prof. Annalisa Guarini and Dr. Michela Candini became my co-supervisors. Then we collaborated on all the processes proposed. We started from my interests and adopted a cross-fertilization approach to integrate social, developmental, and neuroscience-psychological perspectives on how interpersonal distance is influenced by other social-psychological and developmental factors. Furthermore, we focused on the adolescent population due to the significant impact of interpersonal distance on their social development. While it was a very simple way to express my interests, I hope my thesis witnesses the development of my interests and research skills.

Interpersonal distance, a critical factor shaping both interpersonal and intergroup relationships, pertains to the protective zone that individuals maintain around their bodies during social interactions. Intrusion into this space by others can lead to discomfort to individuals. Building upon this understanding, the extensive theoretical foundation of interpersonal distance research spans over Equilibrium Theory (Argyle & Dean, 1965), Protection Theory (Dosey & Meisels, 1969), and Theory of Personal Space (Sommer, 1969), offering a comprehensive support in exploring its influence on interpersonal relationships. The well-established Equilibrium Theory, introduced by Argyle and Dean (1965), suggests that approach and avoidance forces exist in every interpersonal interaction. Individuals strive to maintain a balance point for intimacy to restore the desired level, achieving this equilibrium through various methods such as regulating eye contact, physical distance, and body leaning. Protection Theory, by Dosey and Meisels (1969), indicates that interpersonal distance functions as a response to increasing perceived threats, including both physical threats and threats to emotional well-being or self-esteem. Sommer's Theory of Personal Space (1969) conceptualizes personal space as a sphere or a bubble, with the radius of this sphere defining the minimum physical distance that individuals need to perceive the presence of others within the same space without triggering negative reactions. Sommer indicated that the invasion of personal space is interpersonally stressful, increasing arousal and discomfort. In this dissertation, the Protection Theory and Theory of Personal Space lay the theoretical foundation for investigating how individuals regulate their interpersonal distance. Protection Theory suggests that individuals adjust their interpersonal distance in response to perceived threats, whether physical or psychological (Dosey & Meisels, 1969). This adaptation serves

as a protective mechanism to maintain a sense of security and well-being. In intergroup contexts, where differences in social identity and cultural backgrounds are salient, individuals may instinctively regulate their proximity to others as a means of self-preservation (Novelli, et al., 2010). This phenomenon reflects the inherent tension between the desire for social connection and the need for personal safety. Similarly, the Theory of Personal Space emphasizes the role of cultural norms in shaping individuals' spatial preferences (Sommer, 1969). Cultural factors influence not only the desired distance between individuals but also the interpretation of proximity. Individuals from cultures that value larger personal space may perceive close interactions as intrusive or discomforting, leading them to maintain greater interpersonal distance.

Over the last decades, research on physical distance has expanded into various psychology domains. In the realms of neuroscience and cognitive psychology, recent studies have demonstrated the importance of one's own body representation in interpersonal attitudes (Barsalou, 2008; Longo et al., 2009; Peck et al., 2013). Perceived bodily similarity between self and others may change the way in which individuals engage with other people (Paladino et al., 2010), thereby revealing the social valence of body representation (Longo et al., 2009). Along this line of research, D'Angelo et al. (2017) tested the interesting hypothesis that inducing a change in one's own body representation may impact the space of interaction with other people, such as the interpersonal distance. Thanks to a novel experimental procedure developed through a Virtual Reality set up, participants experienced the transient illusion of self-body invisibility. A contraction of interpersonal distance was found after as compared to before the body illusion, and a possible explanation is that participants feel more protected

and less exposed when another person's approach during the illusion of having an invisible

body. Moreover, this evidence pointed out that not only the physical body but also how

individuals perceive their own body is extremely relevant to socially interacting with others.

The approach-avoidance behaviors are also influenced by the emotional valence

conveyed by others' facial expressions (Rapuano et al., 2020; Ruggiero et al., 2017).

Ruggiero et al. (2017), using Virtual Reality (VR) technology, examined whether and how

participants adjusted interpersonal distance with male/female virtual actors displaying happy,

angry and neutral facial expressions while being approached by or walking toward

them. Findings revealed that participants preferred greater distances with virtual actors

displaying anger compared to neutral and happy expressions in both approach conditions.

Moreover, Rapuano et al. (2020) revealed gender differences: male participants preferred

smaller distances with virtual females displaying happy expressions, and female participants

preferred greater distances with virtual males displaying anger.

Within the scope of social psychology, research has unveiled relationships between

interpersonal proximity and various factors (Huang et al., 2022; Novelli et al., 2010), this

dissertation aims to further elucidate the social factors influencing individuals' choice of

interpersonal distance within the intergroup relations framework. Interpersonal distance,

acknowledged as a crucial form of non-verbal communication (Hans & Hans, 2015), holds a

significant function not only in individual-to-individual interactions but also in understanding

intergroup relations, especially in the context of contemporary multicultural societies

(Sorokowska et al., 2017; Sundstrom & Altman, 1976; Xiao et al., 2016). The choice of

interpersonal distance by individuals is not solely an outcome of personal preferences, it is

heavily influenced by intragroup dynamics (Bell et al., 1988), intergroup relations (Novelli et al., 2010), and cultural factors (Ozdemir, 2008; Sorokowska et al., 2017). Intragroup dynamics focus on the way in which individuals interact within their social groups sharing common identities and values. When individuals foster positive interactions and favorable relationships with their group members, they can experience a sense of belonging, trust, and social support (Easterbrook & Vignoles, 2013; Ibrahim & El Zataari, 2020). These factors and dynamics shape profoundly their behavioral performance during social interactions (Renger et al., 2019), including their choice of interpersonal distance. On the other hand, negative interactions among ingroup members may impede the establishment of a sense of belongingness and security (Jia et al., 2018; Montoro et al., 2021). Consequently, these adverse dynamics could potentially lead individuals to engage in detrimental behaviors, including instances of bullying and cyberbullying (Arslan et al., 2021). In a complementary manner, intergroup relations shed light on how individuals interact with diverse social groups. Individuals may exhibit different interaction patterns when encountering members from various groups, influenced by the characteristics and background associated with a particular group, or more accurately, by the stereotypes held about different groups (Cuddy et al., 2007; Lee & Fiske, 2006). These perceived differences among groups may influence ingroup members' choice of interpersonal distance from different group members. Not surprisingly, variations in interpersonal distance among different groups are significantly influenced by cultural contexts. This stems from the existence of distinct cultural values, norms, and beliefs across societies, which can shape how individuals perceive and interact with members of various groups (Yuki & Takemura, 2013). Consequently, these cultural distinctions can also

affect individuals' choice of interpersonal distance.

Hence, this dissertation addresses the choice of interpersonal distance from three distinct yet interrelated perspectives, including intragroup dynamics, intergroup relations, and cultural influence. By exploring these dimensions, it aims to provide comprehensive insights into the intricate nature of human interaction.

Intergroup relations refer to the way in which individuals belonging to social categories or groups perceive, feel about, think about, and interact with persons in other groups, these groups may involve intragroup associations sharing common identities and characteristics, or different groups characterized by comparative features, such as the presence of ingroups and outgroups (Hogg & Gaffney, 2018; Yzerbyt & Demoulin, 2010). In the context of intragroup and intergroup dynamics, the choice of interpersonal distance not only represents a social behavior but also reflects individuals' orientation toward relationships with members of diverse groups (Bell et al., 1988).

In the realm of intragroup interactions, interpersonal distance serves as a significant indicator of intimacy and social connectedness. In close relationships, there is a tendency to reduce interpersonal distance, thus reflecting increased intimacy and stronger social bonds. This proximity is particularly pronounced in group activities, family relationships, or close friendships. For example, individuals who are friendly with each other exhibit shorter personal space compared to those who are strangers (Evans & Howard, 1973). The review by Sundstrom and Altman (1976) supports the proposition that increased intimacy and connectedness are associated with decreased interpersonal distance. Conversely, situations involving larger groups and more distant relationships often witness an expansion of

interpersonal distance, indicating that individuals interact with each other more formally and maintain a sense of distance. This distancing tendency is notably observed in workplace dynamics. For instance, a study conducted by Huang et al. (2022) reveals that individuals maintain frequently a greater distance from those with higher social status. The spatial boundaries upheld between supervisors and subordinates reflect the impact of social status and power dynamics in the workplace, thereby mirroring the organizational norms and leadership styles prevalent within the working setting. Evidently, the exhibition of individuals' interpersonal distance is influenced by a multitude of factors, reflecting intragroup dynamics. In addition to the factors addressed above, individuals' choice of physical distance is also impacted by various other social factors such as shared social identity (Neville et al., 2022) and social rejection biases (Knowles et al., 2014). Nevertheless, research on whether social identification influences this choice is still needed. Social identification refers to group members' psychological bonds to their group, such that strong identification with one's ingroup leads to heightened interaction among members, feelings of security, acceptance, and support (Evans & Howard, 1973; Crabtree et al., 2010; Haslam et al., 2005; Palmonari et al., 1991; Pombeni et al., 1990; Rutland et al., 2012). These positive experiences significantly influence individuals' attitudes and behaviors in relation to members of other groups (Deaux, 1996; Deaux et al., 1999; Ethier & Deaux, 1994). For example, individuals who strongly identify with a specific group are more likely to exhibit group-serving biases, and prosocial behaviors (De Cremer & Leonardelli, 2003; Ho et al., 2012; Tidwell, 2005), as well as experience fewer risky behaviors (Newman et al., 2007; Saggers et al., 2024). Given the positive elements induced by the sense of belonging, the present

dissertation, on the one hand, examines whether such group belongingness influences

individuals' tolerance for others' physical proximity during daily interactions. On the other

hand, it investigates whether group belongingness impacts individuals' involvement in

bullying behaviors.

As we extend our focus to intergroup dynamics, various research has unveiled that

identity, stereotypes, and affiliations, influence individuals' proxemic behaviors. For instance,

Goff et al. (2008) found that White participants distanced themselves more from Black

partners under conditions of threat, and this distance correlated with the activation of a

"White racist" stereotype. Moreover, ethnic differences in individuals' preferences for

personal space are evidenced, with Mexican-Americans maintaining a closer space than

whites (Ford & Graves, 1977). Indeed, during intergroup interactions, individuals tend to

categorize themselves and others into either ingroups or outgroups (Bodenhausen et al., 2012;

Turner et al., 1987; Leonardelli & Toh, 2015). Ingroup affiliations often evoke a sense of

familiarity, similarities, shared identity, and mutual understanding (Tajfel & Billig, 1974),

whereas outgroups tend to be associated with uncertainty, differences, and potential threats

(Fini et al., 2020). These cognitive distinctions between the two groups influence the way

individuals manage their social environments, particularly in shaping their attitudes and

behaviors towards others during intergroup interactions (Bigler et al., 1997; Charness et al.,

2007). For example, this influence has extended to non-verbal behaviors, as evidenced by

studies on proxemics. Individuals tend to maintain a greater distance from members of

outgroups than from those within their ingroup (Novelli et al., 2010; Ryen & Kahn, 1975).

This proximity behavior serves as an expression of affiliation and shared characteristics with

the ingroup, while choosing a larger distance from outgroups reflects the establishment of social boundaries and a desire to avoid potential threats (Fini et al., 2020).

Notably, the ways individuals interact with different social groups are highly context-dependent, with culture playing a pivotal role in shaping these interactions (Brown et al., 1992; Triandis, 1988, 1995). Culture significantly shapes individuals' values, beliefs, norms, and behavioral tendencies. The choice of preferred interpersonal distance is influenced by cultural factors, Hall's theory posits that distinct cultural norms prescribe acceptable levels of spatial boundaries and categorizes cultures into two groups: contact and noncontact cultures (Hall, 1966). Noncontact cultures, such as North America, Northern Europe, and Asia, often employ larger interpersonal distances as a means of expressing respect and caution towards others. Conversely, some contact cultures, including Southern European, Latin American, and Arabian countries, tend to favor smaller interpersonal distances, conveying a sense of closeness and openness. Importantly, the impact of culture on individuals' behaviors affects also interactions among different groups (Gudykunst & Bond, 1997; Matsumoto, 2007), including different social expectations, interactional norms, and communication patterns, (Aiello & Thompson, 1980; Yzerbyt & Demoulin, 2010). The dimensions of collectivism and individualism serve as a crucial framework for understanding these dynamics. Triandis indicates that ingroup membership varies culturally (Triandis et al., 1988a, 1988b, 1990), and Earley reaffirmed that individuals in collectivist and individualist cultures attach varying levels of importance to ingroup and outgroup (Earley, 1993). This divergence in collectivism and individualism may also likely influence the choice of interpersonal distance towards members of different groups. Nevertheless, this aspect remains relatively unexplored.

Therefore, given the absence of previous research exploring the choice of interpersonal distance from these three interconnected perspectives, this dissertation attempts to bridge this gap and offers novel insights into the understanding of the multifaceted nature of interpersonal distance. Simultaneously, the dissertation aims to replicate and extend well-established findings on the regulation of interpersonal distance, due to gender and direction of approach.

Overview of the Dissertation

In light of these considerations, this dissertation focuses on multifaceted influences encompassing intragroup, intergroup, and cultural factors, aiming particularly to examine whether the choice of interpersonal distance is influenced by social identification, group membership, cultural conceptions, gender, and direction of approach (Aiello & Aiello, 1974; Beck & Ollendick, 1976; Novelli et al., 2010) (Chapters 2 and 3). Additionally, it also aims to investigate whether social identification safeguards against bullying and cyberbullying behaviors (Chapter 2).

The study in Chapter 2 concentrates on understanding intragroup dynamics, examining (a) the extent to which social identification with significant groups, including classmates, friends, and family, influences adolescents' choice of interpersonal distance when being exposed to unfamiliar individuals, and (b) the extent to which social identification with those groups impacts adolescents' engagement in victimization and perpetration within the contexts of both bullying and cyberbullying. By exploring the role of social identification in shaping adolescents' proxemic responses and shielding them from negative social behaviors,

this study not only expands the functions of social identification but also enhances the understanding of the intricate dynamics within adolescent social interactions.

The study in Chapter 3 focuses on understanding the impact of intergroup dynamics and cultural factors on interpersonal distance, investigating (a) how group membership (ingroup vs. outgroup), coupled with the cultural conceptions (collectivism vs. individualism), shape adolescents' choice related to interpersonal distance. Specifically, this study investigates differences in interpersonal distance maintained from ingroup and outgroup targets by Chinese (representing a collectivist culture) and Italian participants (representing an individualist culture). Additionally, a preliminary exploration was conducted to examine (b) how the choice of interpersonal distance varies based on the interaction among participant nationality, gender of both participant and target, and direction of approach of the target. These comprehensive explorations unveil the complex interplay between intergroup dynamics, cultural conceptions, and personal characteristics in shaping individuals' choice of interpersonal distance, providing deeper insights into the multifaceted nature of proxemics in diverse social contexts.

In sum, through these two studies run with early adolescent participants, fundamental social factors such as ingroup identification, group membership and cultural differences will be addressed to understand their impact on the choice of interpersonal distance with similar and dissimilar others. Moreover, social identification as an important buffering factor will be investigated in relation to bullying and cyberbullying both from the perspective of perpetrator and victim.

The subsequent chapters will present a detailed description of the background,

methodology, results and discussion of each study, delving into these central issues.

CHAPTER 2

Belonging Matters: The Impact of Social Identification with Classmates, Friends, and Family on Interpersonal Distance and Bullying/Cyberbullying in Adolescence

Wei, J. J., Candini, M., Menabò, L., Guarini, A., Rubini, M., & Frassinetti, F. *Belonging matters: The impact of social identification with classmates, friends, and family on interpersonal distance and bullying/cyberbullying in adolescence*. *PloS ONE*, *19*(2), e0297370. https://doi.org/10.1371/journal.pone.0297370

In adolescence individuals enlarge their social relationships and peer groups acquire a strong importance for their identity. Moreover, adolescents can experiment negative relationships with peers, i.e., bullying/cyberbullying. The present study aims to investigate the relationship between the feeling of belonging to a specific group, social identification, the distance that adolescents maintain being exposed to others - i.e., interpersonal distance - and bullying/cyberbullying behaviors. Adolescents (age range 10-15 years) completed online measures of group identification (social identification with classmates, friends and family), interpersonal distance, and bullying and cyberbullying (perpetration and victimization). Results showed that adolescents with low social identification with classmates and friends chose larger interpersonal distance. Additionally, low scores in social identification with classmates were associated with higher victimization in cyberbullying. In contrast, adolescents with low scores in social identification with family were more involved as bullies in bullying and as victims in cyberbullying. Male adolescents were more likely to be victimized in bullying than females. This study underlines how social identification with peers and family works as a buffer in interfacing strangers, adjusting the distance maintained with them, and as a protective factor against aggressive relationships in adolescence. This study provides new opportunities for psychologists in understanding the psychological dynamics that shape social interactions among adolescents.

Keywords: social identification, interpersonal distance, bullying, cyberbullying, adolescent, classmates, friends and family group.

Introduction

Adolescence is a life period in which individuals enlarge their social world by becoming aware that they are members of multiple groups, such as their family, peer groups, and classmate groups (Palmonari et al., 1990). The specific relationships that adolescents establish with these group members is likely to influence the social space they maintain between themselves and others during interactions, the so-called interpersonal distance (Hall, 1966; Hayduk et al., 1978, 1983). Adolescence is also a life period in which individuals may experience negative and aggressive relationships with their peers, such as bullying and cyberbullying behaviors (Salmivalli et al., 1996; Smith et al., 2008). Indeed, social identification plays a crucial role in shaping adolescents' perceptions of their social environment and interpersonal behaviors (Hogg & Abrams, 1988). It has been suggested that individuals who strongly identify with their group may exhibit a greater sense of connectedness and familiarity with group members (Lee & Robbins, 1998). Thus, social identification may impact how adolescents feel comfortable with others' social proximity in everyday social interactions, leading to a reduction of interpersonal distance from them. However, given that social identification with one's groups has many functions ranging from enhancement of self-esteem (Tajfel & Turner, 2001) to self-understanding (Deaux et al., 1999), in this contribution we aim to tackle the impact of social identification with classmates, friends and family in influencing adolescents' interpersonal distance with strangers, as well as how social identification can be related to perpetration and victimization in bullying and cyberbullying phenomena. By addressing the role of social identification with important groups of adolescents, we expect to offer guidance for future interventions targeting

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the ability to appropriately regulate interpersonal distance in different social environments, as well as practices aimed at contrasting bullying behavior consequences.

Social Identification

Social identification (SI) refers to the subjective aspects of group membership, which can lead to a sense of identity and self-definition together with feelings subjectively linked to a group (Miller et al., 2015; Thomas et al., 2017). Moreover, as one of the critical social identity processes, social identification is conceptualized as determining the extent to which individuals behave in compliance with the behavioral norms of the groups to which they belong (Turner et al., 1987), and also a sense of emotional commitment to their groups (Ellemers et al., 1999). Previous studies have highlighted that belonging to a social group has important implications for intergroup relationships and interpersonal behavior through social identification (Tajfel & Turner, 2004). For instance, social identification is related to viewing the ingroup in a positive fashion compared to outgroups (Tajfel & Turner, 2001). This has been confirmed by studies that consider SI in adolescence (Tanti et al., 2011; Tarrant et al., 2001). Indeed, as adolescents explore their identity through social interactions, they realize to be members of various social groups ranging from their family (Crocetti et al., 2016, 2023), to peer proximal groups (e.g. classmates and friends) and to more distal groups such as the human group (Albarello et al., 2021). Social identification, besides allowing to enhance group members' self-esteem, allows them to experience other important functions such as intragroup comparison, self-understanding and leadership (Deaux et al., 1999; Hogg & Abrams, 1990).

As for the family group, high-quality family relationships can promote a healthy formation of the self and identity thus favoring adolescents' harmonious development

(Crocetti et al., 2023; Ramadhana et al., 2019). Peer groups of classmates and friends are very

important because adolescents spend most of their spare time outside the family (Brown,

2004; Brown & Larson, 2009; Scholte & van Aken, 2006). Thus, they experience themselves

in different roles by enacting possible selves and identities that they may then decide to

choose. In this vein, interacting with peer group members not only prompts adolescents to

experience reciprocity and intimacy, but also gives them an opportunity to perceive increased

support and acceptance from their classmates and friends (Bokhorst et al., 2010).

Considering the importance of classmates, friends and family in influencing

adolescents' values, attitudes and behaviors and in helping them to cope with adversities or

set-backs, they might encounter (Albarello et al., 2021; Crocetti et al., 2023; Karataş et al.,

2023), it is worth to investigate the impact of identification with these groups on actual social

behavior. One of the core factors influencing social behavior is the distance that individuals

maintain between themselves and others, the so-called interpersonal distance.

Interpersonal Distance

Interpersonal distance (IPD) is the space around the body that individuals maintain

between themselves and other people during social interactions (Hall, 1966; Hayduk, 1978,

1983), which implies that the regulation of IPD is grounded in actions that connect bodies in

the environment. One of the main characteristics of IPD is its dynamicity: IPD is

continuously regulated according to the variety of social environments and depends on one's

own feelings of comfort. The IPD is enlarged in hostile, threatening, and uncomfortable

situations (Candini et al., 2017), whereas it is reduced in friendly, unthreatening, and

comfortable situations (Gessaroli et al., 2013). This means that individuals can actively

regulate their IPD by taking control of their environment.

Proxemics literature has demonstrated that IPD changes during the lifespan and can be modulated by individual differences of the interactants, such as age or gender (Hayduk, 1983; Iachini et al., 2013). Indeed, IPD regulation is learned early in childhood and changes during adulthood (Aiello & De Carlo Aiello, 1974): as age increases, individuals take more distance from others (Hayduk, 1983; Tennis & Dabbs, 1975). Thus, adolescents prefer a greater IPD than children and a shorter IPD than adults (Aiello & De Carlo Aiello, 1974). As for the modulation of gender, adolescents usually maintain a smaller IPD from different-gender than same-gender individuals, especially males (Meisels & Guardo, 1969). Moreover, considering same gender dyads, boys keep a larger distance from boys than girls from girls (Nowicki & Duke, 1972).

Interestingly, evidence on adult population showed a link between IPD and social identification (Hopkins & Dixon, 2006; Reicher et al., 2006): individuals preferred a larger distance from outgroup compared to ingroup members (Novelli et al., 2010). For instance, in a competition, individuals preferred to seat close to a team-mate (ingroup member) rather than a competitor (outgroup member) (Campbell et al., 1966). In line, other studies put in evidence favoritism to ingroup members and discrimination against outgroup members, especially when social identification is strong (Abbink & Harris, 2019). One of the possible forms of overt discrimination against outgroup members among adolescents is bullying behavior (Ojala & Nesdale, 2004).

Bullying and Cyberbullying

Bullying is considered a specific type of aggressive behavior defined by three main

components: repetition, imbalance of power and intention to harm (Olweus, 1993). In the last two decades, with the development of technology, a new form of bullying emerged, named cyberbullying, defined as an aggressive and deliberate behavior conducted by an individual or a group whose purpose is repeatedly and over time abusing a victim who cannot easily defend himself or herself, by using electronic devices (Del Rey et al., 2015; Smith et al., 2008; Ybarra et al., 2014). Over the years, research has revealed that cyberbullying has unique features distinguishing it from traditional bullying, such as the absence of physical and temporal boundaries, enabling victims to be targeted at any time and place (Tokunaga, 2010), and the ability to perpetrate aggression anonymously (Menesini & Nocentini, 2009). Additionally, cyberbullying allows for a potentially large audience, amplifying the impact and reach of aggression (Ferrara et al., 2018). Nevertheless, bullying and cyberbullying are frequently seen as interconnected facets of the same phenomenon which has its roots in school and classroom dynamics (Baldry et al., 2015; Menabò et al., 2023; Pyżalski et al., 2022). Numerous studies have highlighted a significant overlap between these two forms of aggression (Beltrán-Catalán et al., 2018; Olweus, 2012). For instance, a study involving 2,028 Taiwanese students found that 48.7% of those engaged in cyberbullying were also involved in traditional bullying (Wang et al., 2019). Similarly, in a comprehensive study by Cosma et al. (2020) that analyzed data from over 700,000 students across 37 countries in Europe and North America, an overlap was observed wherein 50% of the individuals who experienced cybervictimization also faced traditional bullying victimization (Cosma et al., 2020).

Bullying and cyberbullying are both considered widespread problems that affect the well-being of adolescents on multiple levels, being associated with internalizing and

externalizing symptoms, as shown by many empirical studies, meta-analyses and reviews (Hemphill et al., 2015; Menesini & Nocentini, 2009). For example, Hawker and Boulton found in their meta-analysis that individuals who experienced bullying behaviors were more likely to have negative thoughts and depression symptoms (Hawker & Boulton, 2000). Similar patterns were observed for cybervictimization and adolescents' depression and life satisfaction (Hemphill et al., 2015; Sumter et al., 2012). In addition, in the case of severe involvement, the risk of suicide is significantly higher (Hinduja & Patchin, 2010).

Regarding gender, some differences in bullying and cyberbullying behaviors have been observed. Overall, a high rate of male perpetrators of bullying was revealed in many surveys (Baldry, 2003; Falla et al., 2022), whereas gender differences in victimization rates appeared to be less consistent (Cosma et al., 2022; Craig et al., 2019; Smith et al., 2019). Indeed, some studies found that males are more likely to be victimized than females (Cosma et al., 2022; Smith et al., 2019), while others reported that males experience less victimization than females (Craig et al., 2019). Regarding cyberbullying, findings are mixed since research did not find a predominant gender involved either as a victim or as a bully (Notar et al., 2013; Slonje et al., 2013).

Some researchers have applied the social identification perspective to bullying phenomena, revealing that SI negatively correlates with bullying (Ojala & Nesdale, 2004). Individuals who strongly identify with their group are less likely to be targets of bullying, whereas individuals who are not perceived as part of one group are more likely to be bullied (Escart ń et al., 2013). As for cyberbullying behavior, the stronger is the perceived peer-norm of behavior legitimacy within the ingroup, the higher the frequency of being involved in

cyberbullying acts as perpetrators (Piccoli et al., 2020; Sasson & Mesch, 2017). This finding

has the potential for developing preventive interventions targeting perpetration and

victimization outcomes, by promoting individuals' self-esteem and self-confidence as related

outcomes of social identification and increasing the psychological resilience to bullying

behavior (Aizenkot & Kashy-Rosenbaum, 2020; Overbeek et al., 2010).

Since during adolescence there is an increasing social identification with peers rather

than with family (Eccles, 2004), and it is also the age when the risk of bullying and

cyberbullying is highest (Brown et al., 2005), it is worthwhile to understand the role played

by social identification with classmates, friends and family in preventing the frequency of

bullying/cyberbullying behaviors during adolescence.

The Present Study

The first novelty of the present study is to investigate the influence of social

identification on IPD regulation in adolescence, exploring whether IPD varies as a function of

the level of identification with classmates, friends and family (Thomas et al., 2017). One

could indeed argue that the more individuals are identified with significant groups, the less

they need to keep distance from unknown others, since the psychological closeness to their

groups may work as a protective factor in handling unknown people. Along this line, we

tested whether social identification with classmates, friends and family, influences

interpersonal distance. The second novelty is to examine whether bullying/cyberbullying

behaviors vary depending on how adolescents identify with their classmates, friends and

family groups.

Social identification was measured by the Scale of "Group Identification"

(Identification with Classmates, Friends and Family) (Thomas et al., 2017) and IPD was

measured through an online modified version of the Interpersonal Visual Analogue Scale

(IVAS) (Iachini et al., 2016, 2021). To assess bullying and cyberbullying phenomena,

participants filled out two self-report questionnaires (European Bullying Intervention Project

Questionnaire; European Cyberbullying Intervention Project Questionnaire) (Brighi et al.,

2012a, 2012b).

We expect that adolescents with lower social identification should choose higher IPD

and would be more involved in bullying and cyberbullying phenomena. Finally, accordingly

with literature, we expect a significant effect of gender on IPD regulation and bullying and

cyberbullying behaviors.

Methods

Participants

A priori power analysis was conducted on G*Power (Faul et al., 2009), revealing that

200 participants would yield 0.9 statistical power to detect a medium-size effect of 0.20 in a

between-participants design. Considering possible drop-out, a total of 242 students (111

males, age range= 10-15 years) attending secondary school and high school were recruited

between March 2021 and May 2022 from the Emilia-Romagna region (Italy). Inclusion

criteria were the following: i) age 10 to 15 years and ii) be free of any medical conditions that

might interfere with the task. Therefore, since 38 participants did not complete the survey, the

final sample consisted of a total of 204 participants (97 males, age range = 10-15 years;

M±SD age = 12.36 ±0.86 years, i.e., early adolescent and beyond).

The informed digital consent for participation in the study was provided by parents. In

addition, as part of the survey, students were informed about the anonymous and voluntary nature of the survey, and the possibility of withdrawing from the study at any time. Recruitment and testing procedures were in line with the ethical standards of the Bioethics Committee of the Department of Psychology (Prot. n. 113714 - University of Bologna) and the Declaration of Helsinki.

Materials and Procedure

Qualtrics was used for the online survey (Qualtrics, Provo, USA). Participants sat alone in front of a computer screen and filled in an online questionnaire presenting consistently four sections in the same order: i) the European Bullying Intervention Project Questionnaire (EBIPQ) (Brighi et al., 2012a), ii) the European Cyberbullying Intervention Project Questionnaire (ECIPQ) (Brighi et al., 2012b), iii) the Interpersonal Visual Analogue Scale (IVAS) (Iachini et al., 2016, 2021), and iv) the Group Identification Scale (Thomas et al., 2017). The completion of the questionnaire took about 20-30 minutes.

Social Identification with Classmates, Friends, and Family

Participants' identification with classmates, friends, and family was measured by the Group Identification Scale (Thomas et al., 2017). Each subscale comprised 6 items with a response Likert-type ranging from 1 (strongly disagree) to 5 (strongly agree). These items capture cognitive, emotional and behavioral dimensions of participants' SI: i.e., "Belonging to the group of my classmates/friends/family is very important for who I am". High scores of social identification indicate that such groups are important to individuals' self-definition (Tajfel & Turner, 2001). For each context, Cronbach's Alphas were also assessed (SI with classmates α = .87, SI with friends α = .83, SI with family α = .83).

Interpersonal Distance

To measure preferred IPD we adopted the Interpersonal Visual Analogue Scale (IVAS) (Iachini et al., 2016, 2021), that was administered online. For each trial, a picture was displayed on a computer screen in which two different actors were depicted on the opposite side of a horizontal line: one actor represented the participant (labelled as "You"), and the other actor represented the target. The actor portraying the participant changed in accordance with his/her age (child or adolescent) and gender (male or female). Six different targets were presented: two children (male or female), two adolescents (male or female), or two adults (male or female). The actor's starting position could be in front of or back to the participants. A total of sixteen trials were presented, and the order of the presentation was randomized across participants. The starting distance between the two actors was 100 mm. Participants were required to stand still and imagine the target walking toward them, and then they were asked to indicate, by moving a slider on the grey line, their preferred IPD from the target (from max 100 to min 0) (Figure 1). The greater the value chosen by the participant the larger the interpersonal distance maintained from the target.
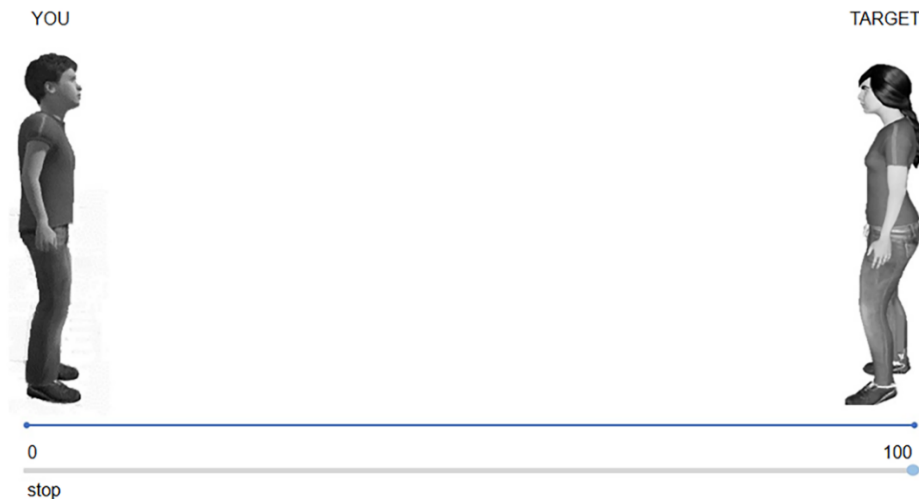
Figure 1

Example of IVAS Trial. The participant is a male adolescent (YOU) and the actor on the opposite side of the line represents a female adolescent (TARGET). Participants chose their preferred IPD by moving the slider along the grey line (from 100 to 0): the further the slider was placed from the participant, the greater the distance from the target.

Bullying and Cyberbullying

The European Bullying Intervention Project Questionnaire (EBIPQ) (Brighi et al., 2012a) consisted of 14 items, 7 for victimization and 7 for perpetration including physical bullying (i.e., "Someone has hit me"; "I hit someone"), social bullying (i.e., "Someone spread rumors about me"; "I spread rumors about someone else"), verbal bullying (i.e., "Someone insulted me"; "I insulted someone else"), and social exclusion (i.e., "I have been excluded or ignored by another person"; "I excluded or ignored another person"). Cronbach's Alphas were calculated for each dependent variable (victimization $\alpha = .76$; perpetration $\alpha = .83$).

The European Cyberbullying Intervention Project Questionnaire (ECIPQ) (Brighi et al., 2012b) consisted of 22 items, along with two dimensions: cybervictimization (11 items) and cyberperpetration (11 items). The items describe different behaviors such as identity theft

(i.e., "Someone has hacked into my account and pretended to be me"; "I hacked into someone

else account and pretended to be it"), uploading or altering of awkward pictures or videos

(i.e., "Someone has posted awkward images or videos of me on the Internet"; "I posted

awkward images of videos of someone else on the internet"). Cronbach's Alphas were

assessed (cybervictimization α = .84; cyberperpetration α = .87).

In both questionnaires, participants had to indicate the frequency of each item using a

5-point Likert-type scale ranging from 0 to 4 (where 0= never and 4= more than once a

week).

Data Analysis

Data was analyzed by using SPSS Statistics 23 (IBM SPSS Statistics for Windows,

Version 23.0. Armonk, NY: IBM Corp).

First, we conducted a Spearman's correlation analysis, including all variables (e.g.,

social identification, IPD, bullying, and cyberbullying, see Appendix A p. 42). The

relationships between social identification (identification with classmates, friends, and

family) and IPD (expressed as the mean values obtained at the IVAS) are presented in the

Appendix A p. 43.

To determine whether social identification influenced IPD, participants were

categorized as low (n = 100; low-SI; $M = 3.09 \pm 0.46$) or high in social identification (n = 104;

high-SI; $M = 4.05 \pm 0.35$) by using a median split (median value= 3.61). An independent

sample t-test confirmed the significant difference between the two groups, $t(202)= -16.49$; p

< .0001. The same median split procedure was adopted for each of the following social

identification dimensions: SI with classmates (low-SI classmates: n = 87; $M = 2.44 \pm 0.54$;

high-SI classmates: n = 117; $M = 3.74 \pm 0.51$; median value= 3.17; $t(202)= -17.40$; $p < .0001$),

SI with friends (low-SI friends: n = 92; $M = 2.99 \pm 0.59$; high-SI friends: n = 112; M

$= 4.13 \pm 0.41$; median value= 3.67; $t(202)= -16.21$; $p < .0001$) and SI with family (low-SI

family: n = 88; $M = 3.23 \pm 0.49$; high-SI family: n = 116; $M = 4.46 \pm 0.34$; median value=

4.00; $t(202)= -18.54$; $p < .0001$). Then, we conducted three 2×2 Analysis of Variance

(ANOVAs) on IPD mean scores with social identification (high and low SI) and gender of

participant (male and female) as between-participants factors. Separate analyses were run for

SI with classmates, SI with friends and SI with family.

Finally, the correlational relationship between SI, bullying (victimization and

perpetration) and cyberbullying (cybervictimization and cyberperpetration) were depicted in

the Appendix A. To assess whether social identification (SI) impacts on the experience of

bullying and cyberbullying among adolescents, separate ANOVAs were conducted on mean

scores of victimization, perpetration, cybervictimization and cyberperpetration, with SI (high

and low SI) and gender of participant (male and female) as between-participants factors.

Separate analyses were run for SI with classmates, SI with friends and SI with family.

Equal variances across samples have been assessed by using Levene's Test (all

variables conform to homogeneity of variance, except for the victimization variable: p

$= .010$). Bonferroni's correction was adopted and the partial eta-squared (η^2_p) indicated the

effect size.

Results

Social Identification and Gender of Participant on IPD

The ANOVA showed a significant effect of SI with classmates on IPD [$F(1, 200) =$

6.049, $p = .015$, $\eta^2_p = .029$] : a larger IPD was found among those adolescents reporting low

SI with classmates ($M = 48.21$, $SEM = 1.70$) compared to those with high SI with classmates

($M = 42.69$, $SEM = 1.46$, Figure 2a). A significant main effect of SI with friends on IPD was

also obtained [$F(1, 200) = 5.066$, $p = .025$, $\eta^2_p = .025$]: a larger IPD was found among those

with low SI with their group of friends ($M = 47.76$, $SEM = 1.65$) compared to those with high

SI with the group of friends ($M = 42.72$, $SEM = 1.51$, Figure 2b). No significant effect of SI

with family on IPD was found ($p = .17$; Figure 2c). Gender of participant (all $ps > .531$) and

its interaction with SI variables were not significant in all the analysis conducted (all

$ps > .588$).

Figure 2

Interpersonal Distance (IPD) as a function of Social Identification with Classmates, Social

Identification with Friends and Social Identification with Family
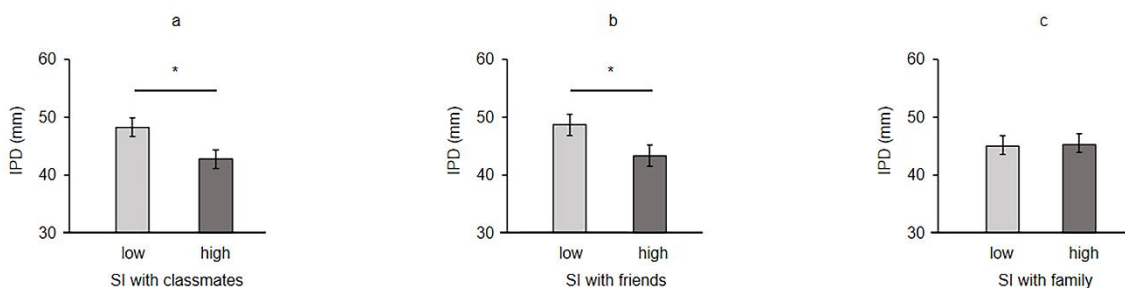
Note. IPD as a function of (a) Social Identification with Classmates, (b) Social Identification

with Friends and (c) Social Identification with Family.Error bars indicate standard deviation

(SD). Asterisks reveal significant differences ($p < .05$).

**Social Identification and Gender of Participant on Bullying**

A main effect of Gender of participant was revealed on victimization, as male

participants were more victimized than female participants. This result was consistent in all

analyses involving SI with classmates [$F(1, 200) = 5.105$, $p = .025$, $\eta^2_p = .025$], SI with the family [$F(1, 200) = 4.684$, $p = .032$, $\eta^2_p = .023$], and SI with friends [$F(1, 200) = 3.671$, $p = .057$; $\eta^2_p = .018$, tendency]. SI with classmates, friends, and family (all $ps > .116$) and its interaction with gender (all $ps > .235$) were not significant on victimization.

Concerning perpetration, the variable SI with the family revealed a significant main effect [$F(1, 200) = 4.270$, $p = .040$, $\eta^2_p = .021$]: adolescents with low SI with their family ($M = 0.363$, $SEM = 0.051$, Figure 3c) were more involved in perpetration compared to adolescents with high levels of SI ($M = 0.224$, $SEM = 0.044$). By contrast, SI with classmates [$F(1, 200) = 0.205$, $p = .651$, $\eta^2_p = .001$; Figure 3a] and SI with friends [$F(1, 200) = 0.158$, $p = .692$, $\eta^2_p = .001$] were not significant (Figure 3b). Gender of participant (all $ps > .081$) and its interaction with SI variables were not significant (all $ps > .669$).

Figure 3

Perpetration Mean Scores as a Function of Social Identification with Classmates, Social Identification with Friends, and Social Identification with Family
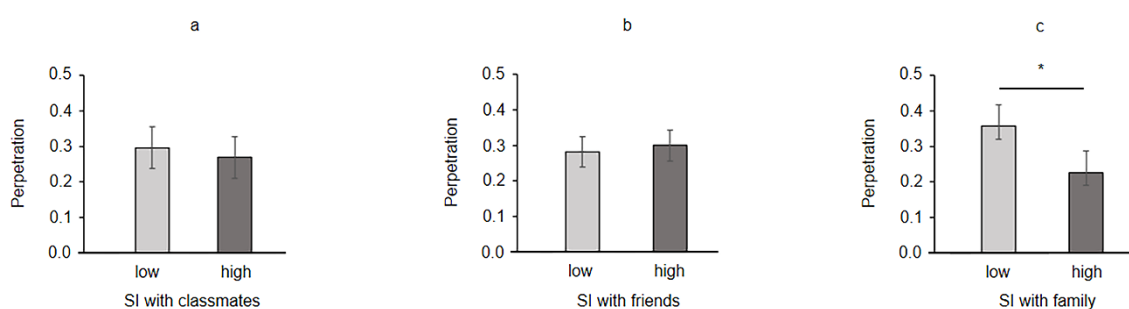
Note. Perpetration mean scores as a function of (a) Social Identification with Classmates, (b) Social Identification with Friends, and (c) Social Identification with Family. Error bars indicate standard deviation (SD). Asterisks reveal significant differences ($p < .05$).

Social Identification and Gender of Participant on Cyberbullying

SI with classmates showed a significant main effect on cybervictimization [$F(1, 200)$ = 4.521, p= .035, η^2_p = .022] due to lower cybervictimization among adolescents with high SI with classmates ($M = 0.124$, $SEM = 0.03$) than in adolescents with low SI ($M = 0.224$, $SEM = 0.036$, Figure 4a). SI with friends was not significant [$F(1, 200) = 0.059$, $p = .808$, $\eta^2_p = .001$] (Figure 4b), while SI with family revealed a significant main effect [$F(1, 200) = 5.120$, $p = .025$, $\eta^2_p = .025$] due to lower cybervictimization among adolescents with low SI with their family group ($M = 0.135$, $SEM = 0.028$) than in adolescents with low family SI ($M = 0.227$, $SEM = 0.032$, Figure 4c). Gender of participant's (all $ps > .675$) and its interaction with SI variables were not significant (all $ps > .554$).

As for cyberperpetration, social identification (all $ps > .069$), gender of participant (all $ps > .315$) and their interactions were not significant (all $ps > .731$).

Figure 4

Cybervictimization Mean Score as a Function of Social Identification with Classmate, Social Identification with Friends, and Social Identification with Family

Note. Cybervictimization mean score as a function of (a) Social Identification with Classmate, (b) Social Identification with Friends, and (c) Social Identification with Family. Error bars indicate standard deviation (SD). Asterisks reveal significant differences ($p < .05$)
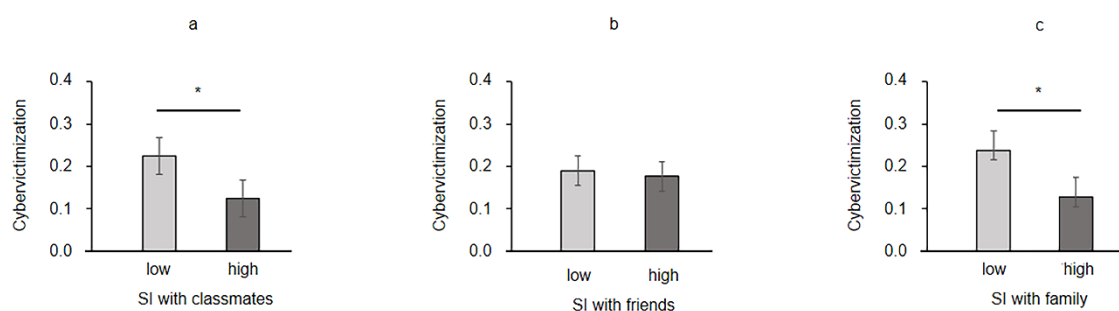
Discussion

The present study aimed at exploring how social identification (SI) with meaningful social groups (i.e., classmates, friends and family) to which early adolescents and beyond belong, influences the choice of interpersonal distance (IPD) measured in a computerized task (i.e., IVAS) (Iachini et al., 2016, 2021). Moreover, considering the relationship between peer group membership and aggressive behaviors among peers (Duffy & Nesdale, 2009, 2010; Sasson & Mesch, 2017), we explored the influence of social identification on perpetration and victimization in bullying and cyberbullying phenomena.

Findings showed that SI with classmates and friends influences IPD chosen by participants: adolescents with higher social identification chose shorter interpersonal distance, and this is consistent with our hypothesis. This finding may imply that social identification, especially with peers, provides adolescents with a certain degree of confidence, trust and control over their social world, leading them to choose a short interpersonal distance, even with strangers. Even if it is known from previous research that IPD changes in accordance with the social context in which individuals interact (Lloyd, 2009), the novelty of the present study relies on unfolding the role of social identification in regulating IPD, behaviorally measured in a computerized task. Indeed, IPD is enlarged in threatening and uncomfortable situations, whereas it is reduced in unthreatening and comfortable situations (Candini et al., 2017, 2020; Gessaroli et al., 2013; Massaccesi et al., 2021). One comfortable and friendly situation experienced by adolescents is when they share a sense of identification and goals with significant peers. Since they spend most of their time at school, they can experience a sense of inclusivity and reciprocal trust with classmates and friends, very likely leading to develop a high social identification with them. In this vein, adolescents who strongly identify

with their peer groups may choose close proximity with others, even if those are unfamiliar, likely because they perceive a high sense of security. In this respect, our results not only confirm the pivotal role that social identification plays in regulating social behavior (Clary & Snyder, 1991), but also substantially extend the functions of social identification, which mainly emphasized individual needs (i.e., self-insight and understanding, leadership role, romantic relations) and as well as group-relevant motivations (i.e., ingroup cohesion, inter-group comparison and competition) (Deaux et al., 1999).

We found interesting results concerning the influence of specific dimensions of social identification on the perpetration and victimization of bullying and cyberbullying. Concerning traditional bullying, adolescents with lower social identification with family enacted more aggressive behaviors. This evidence indicates the crucial role of the parent-child relationships in influencing the chances of being engaged in bullying episodes (Karga et al., 2021; Rinaldi et al., 2023). Over the years, bullying perpetration was related to low parent-child involvement (Flouri & Buchanan, 2003), and to the presence of negative parents' emotions (Berdondini & Smith, 1996; Connolly & O'Moore, 2003). For example, Bibou-Nakou and colleagues (2013) found that bullying behavior was influenced by poor relationships with parents, including a lack of warmth and empathy from them (Bibou-Nakou et al., 2013). Additionally, previous research showed that bullies and victims adopt less open and more offensive communication with parents than adolescents who are not involved (Ledwell & King, 2015). Our study adds to the previous literature the specific role of social identification with one's family in association with bullying perpetration, suggesting that family constitutes the primary social context where adolescents learn how to manage interpersonal

aggressiveness and conflicts (Stevens et al., 2022).

Concerning cyberbullying, we found an important role of social identification with family and classmates in cybervictimization. In other words, adolescents with a low social identification with their family, but also with peers in their class, reported more experiences of cybervictimization. As for social identification with the family, our results resonate with previous findings that identified issues with parents as a major risk for being victimized/cybervictimized (Olivas, 2019). For example, children with divorced/widowed parents were more likely to become cybervictims (Chen et al., 2018). Moreover, Larranaga et al. (2016) found that cybervictims avoid communication with parents, which contributed to the lengthening of the cybervictimization's duration (Larrañaga et al., 2016).

Concerning social identification with classmates, our research underscores the pivotal role that this social group plays also in online aggressive dynamics, aligning with prior studies in this domain. For instance, Pyżalski and colleagues' qualitative analysis (2022) highlighted that, although bullying often migrates to the digital realm, it predominantly occurs within circles of classmates (Pyżalski et al., 2022). Similarly, a recent study by Menabò et al. (2023) revealed the critical importance of peer networks, not only in cases of victimization but also in cybervictimization (Menabò et al., 2023).

Indeed, the association between victimization and low social identification with classmates revealed that if a group member establishes a low identification with one's own group, he or she may be excluded, especially in friendship groups where the other members may be strongly bounded to each other through social identification both in an online and offline context. Notably, being highly identified with classmates works as a buffer against

cybervictimization (Baldry et al., 2015). Thus, accordingly with the protective function of high social identification, adolescents may be more committed to their class and prevent each other from being victimized (Cassidy, 2019).

Regarding the role of gender, we did not find a significant effect on perpetration of bullying and cyberbullying. However, we found that males were more frequently victimized than females in traditional bullying. This is consistent with those previous studies showing that males are more likely to be exposed to the experience of victimization (Astor et al., 2002; Croisant et al., 2013). However, as already mentioned in the introduction there are some mixed results in the literature regarding the role of gender (Cassidy, 2019; Cosma et al., 2022; Craig et al., 2009; Smith et al., 2019), which requires further examination. Concerning cyberbullying, the lack of gender differences is in line with previous findings, which have shown that cyberbullying is not a gender-specific behavior (Navarro, 2016).

Overall, the results of the study underline how social identification with peers and family is a buffer for interfacing with others, through adjusting the distance we maintain with them, and as a protective factor against transgressive behaviors in adolescence.

Limitations and Future Directions

The current study has some limitations that should be considered when interpreting the results. First, our findings are limited to a specific age-range (i.e., 10-15 years). How the impact of social identification on interpersonal distance regulation, and bullying/cyberbullying behaviors change over time should be further investigated by longitudinal studies. Secondly, the sample size in our study should be take into account considering the generalizability of our findings to other populations. Therefore, future

research with larger and cross-cultural samples is needed to increase generalizability and external validity of the results.

In addition, although the present research marks an initial step towards understanding the relationship between social identification processes, interpersonal distance, bullying and cyberbullying, the cross-sectional design of the study provides a static representation of relationships. Future research could provide deeper insights into these relationships, explaining the processes over time. Indeed, different processes could come into play. For example, the chosen IPD may serve as a non-verbal cue and may be a critical indicator of an individual's sense of connectedness/disconnectedness from others. Previous studies (Pouwels et al., 2016) indicate that individuals who experience bullying tend to display more withdrawn behaviors compared to their non-bullied peers. This tendency towards withdrawal might be reflected in a preference for maintaining a greater interpersonal distance. At the same time, however, the choice of a larger interpersonal distance may imply a lack of interest or engagement with peers, potentially leading to or exacerbating social exclusion. To fully unravel these complex interactions, future studies should aim to track these dynamics over time, potentially revealing critical patterns and causal links between interpersonal distance choices, social identification processes, and the cycle of bullying and cyberbullying.

Conclusions and Implications

The current findings show the importance of social identification with peers and family in regulating interpersonal distance and preventing bullying and cyberbullying behaviors in early adolescence and beyond. This evidence sheds new light on the understanding of these phenomena that can also inform psychologists and educators in

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providing guidance to adolescents in their adaptation to school and life challenges. For example, educators can implement class-building activities or programs that promote class cohesion and foster a sense of connectedness and solidarity with students in a welcoming and inclusive environment. Indeed, schools are a privileged setting for interventions since they provide the opportunity for building a sense of shared identity and group common goals. Therefore, students are more likely to feel comfortable being exposed to strangers and choose optimal interpersonal distances (Lee & Robbins, 1998; Tanis & Postmes, 2005).

Furthermore, our results demonstrate the central role that the family plays in traditional perpetration dynamics. In this regard, parents/caregivers can benefit from interventions designed to improve the relationship with their offspring, including improving communication with their children and taking an empathic perspective (Espelage, 2014; Şahin, 2012). Moreover, low social identification with parents and classmates can increase the risk of becoming a cybervictim. Therefore, parents and teachers may benefit from being trained about online mediation strategies to protect adolescents and teach them how to safely navigate online (Vivolo-Kantor et al., 2021; Zagorscak et al., 2019).

In conclusion, the gathered evidence shows that a fundamental social psychological factor such as social identification with peers and family by influencing interpersonal distance with strangers and avoidance of bully behaviors very likely helps to pave the way for a robust adaptation and mental health of individuals (Bratt, 2015; Miller et al., 2015). Future research is needed to provide evidence on this consequence.

Appendix

Correlations between Social Identification and IPD

Social identification (SI) with classmates ($r = -.254$, $p < .01$) and SI with friends ($r = -.159$, $p = .04$) negatively correlated with preferred interpersonal distance (IPD): the less individuals think of themselves as a member of their friends or classmates' group, the larger IPD they choose. No significant correlation was found between SI with family ($r = -.010$, $p = .83$) (see Table A).

Correlations between Social Identification and Bullying/Cyberbullying

Considering traditional bullying, significant negative correlations emerged between victimization and SI with classmates ($r = -.176$, $p = .012$): participants with high scores in social identification with their classmates showed a low victimization rate. Moreover, a significant negative correlation between perpetration and SI with family was revealed ($r = -.166$, $p = .018$): the more individuals perceived themselves as members of their family, the less they perpetrated aggressive behaviors. Correlations between SI with friends and victimization and perpetration were not significant ($p > .140$).

In a similar vein, looking at the cyberbullying phenomenon, significant negative correlations were found between SI with classmates and cybervictimization ($r = -.186$, $p = .008$): the high the SI with the classmates, the lower the frequency of cybervictimization. No significant correlations between SI with friends and SI with family and cyberbullying were found (all $ps > .069$).

Table A

Spearman' Correlations among Interpersonal Distance (IPD), Social Identification (SI), and

Bullying/cyberbullying

Variables	IPD	SI with classmates	SI with friends	SI with family	Victimization	Perpetration	Cyber victimization	Cyber perpetration
IPD	1.000							
SI with classmates	-.254**	1.000						
SI with friends	-.159*	.547**	1.000					
SI with family	-0.010	.328**	.393**	1.000				
Victimization	-0.093	-.176*	-0.104	-0.104	1.000			
Perpetration	0.009	-0.049	-0.039	-.166*	.649**	1.000		
Cybervictimization	0.031	-.186**	-0.052	-0.120	.616**	.490**	1.000	
Cyberperpetration	0.056	-0.052	-0.006	-0.127	.471**	.619**	.625**	1.000

*Note. *p < .05; **p < .01; ***p < .001*

CHAPTER 3

The Role of Group Membership and Culture

in Interpersonal Distance Regulation

Wei, J. J., Candini, M., Frassinetti, F., & Rubini, M. *The role of group membership and culture in interpersonal distance regulation*. [In Revision].

Objectives: the current study aims to examine the influence of group membership and cultural conceptions on the regulation of interpersonal distance among Chinese and Italian adolescents. **Methods:** a group of 120 Italian (52 males, $M \pm SD_{age} = 13.28 \pm 1.54$ years) and 120 Chinese (64 males, $M \pm SD_{age} = 13.21 \pm 1.43$ years) completed an online computerized version of the Interpersonal Visual Analogue Scale to assess their preferred interpersonal distance. **Results:** a greater distance was found in Chinese than Italian participants. Chinese participants also chose a larger distance from outgroup members than ingroup members, whereas no such tendencies were found among Italian participants. Moreover, in the Chinese group, a larger distance from the male target was chosen by females compared to male participants. Finally, all participants maintained a greater distance when outgroup members approached from the back than from the front. **Conclusions:** these findings not only provide evidence that nationality and group membership impact on how individuals regulate spatial boundaries, but also offer a new lens to understand intergroup dynamics that shape social interactions among individuals from diverse cultural backgrounds.

Keywords: group membership, cross-cultural, interpersonal distance, IVAS, adolescence

Introduction

Cultural contexts exert a profound influence on how people perceive and relate to their social world. A very important source of cultural influence relies on the notion of individualism/collectivism that addresses the representation of the self and others across different contexts (Triandis et al., 1988b). The interplay of cultural contexts and group membership is indeed a fundamental aspect of how people handle their interpersonal and intergroup relationships. Among the factors structuring relationships, interpersonal distance constitutes an important factor in regulating interactions with others. Along this line, this study aims to address interpersonal distance in its relations with cultural contexts and group membership. Understanding how interpersonal distance is chosen becomes particularly significant during adolescence, a critical period during which people enlarge their social world by joining various peer groups, including school and friend groups. For this reason, we chose to include participants within this specific age range in our study.

The Influence of Culture on Interpersonal and Intergroup Behavior

Culture, as a potent and pervasive force, yields a substantial impact in shaping people's values, beliefs, and behaviors, and it also influences intragroup and intergroup relations (Hinkle & Brown, 1990). In this era of globalization, we can observe people from diverse cultural backgrounds exhibiting distinct attitudes and behaviors. One of the key manifestations of these cultural differences lies in the different endorsement of individualism and collectivism conceptions.

Individualism-collectivism is recognized as a major dimension of cultural diversity within social psychology, referring to the extent to which a culture values individuals' needs,

desires, and goals over group and collective ones (Gudykunst et al., 1987, 1992; Leung &

Bond, 1984; Triandis, 1988). This cultural dichotomy is rooted in profound disparities

concerning how individuals are culturally represented. In the context of collectivistic cultures,

a prevailing emphasis is given to the prioritization of group goals over individual pursuits,

and the importance of interdependence among members of ingroups. Consequently,

collectivists often exhibit behaviors that are more centered on social interactions. For

example, instances of verbal abuse within collectivistic settings are more directed toward the

relations of individuals, underscoring the significance of group harmony and

interconnectedness (Semin & Rubini, 1990). In contrast, individualistic cultures prioritize

personal autonomy and independence, with individuals placing more emphasis on their own

goals and values than those of the group (Gudykunst & Bond, 1997; Kashima & Gelfand,

2021). This divergence in the cultural construction of the concept of person has a profound

impact on how individuals perceive and manage their interpersonal relationships and

intergroup relations (Brown et al., 1992). Therefore, to better grasp the interplay among

culture, group membership, and intergroup relations, it is crucial to examine how group

membership also influences the social behavior of individuals belonging to different cultural

contexts.

The Importance of Group Membership

According to Self-Categorization Theory, individuals depending on the salience of the

context can categorize themselves and thus others at the intermediate level part of either an

ingroup or outgroup, based on perceived intragroup similarities and intergroup differences on

a given, relevant dimension (Bodenhausen et al., 2012; Turner et al., 1987; Weisman et al.,

2015). As they identify with ingroup characteristics and values, they develop a sense of group belongingness (McGarty et al., 2009; Turner et al., 1987). Group membership not only enhances individuals' self-understanding, making the meaning of their lives more graspable and predictable (Abrams & Hogg, 2004), but it also plays a pivotal role in shaping how they perceive and feel about themselves and others. Research in social psychology has consistently demonstrated that individuals tend to evaluate their ingroup members more positively (Hunter et al., 2017; Levine et al., 2005; Verkuyten, 2021) and perceive them as more similar to themselves (Billig & Tajfel, 1973; Hogg, 2004). This tendency further shapes intergroup attitudes and behaviors, leading to the phenomenon of ingroup bias (Carollo et al., 2023; Liberman et al., 2017; Rhodes & Baron, 2019; Rubini et al., 2014). This is exemplified by extensive research indicating that ingroup members are typically allocated real rewards to a higher extent (Wilder, 1986; Yang & Park, 2022), are more likely to be helped (Sierksma & Thijs, 2017; Stürmer & Snyder, 2010) and trusted (Falk & Zehnder, 2007; Platow et al., 2012), as well as are perceived as possessing more positive qualities (Brewer, 1979; Gaertner et al., 1989) and traits (Inguglia & Musso, 2013) compared to outgroup members. Notably, these biases are influenced by the cultural conception embraced by members of different groups (Brown et al., 1992; Fischer & Derham, 2016), where the individualism-collectivism construct offers a valuable framework to understand behavioral patterns observed in intergroup relations (Triandis, 1988). Along this line, in a study involving Mexican (collectivist context) and U.S. (individualist context) samples, collectivist people evaluated members of the ingroup significantly more generously than did individualist people (Gómez et al., 2000).

In collectivistic contexts, individuals tend to distinguish between ingroup and outgroup members to a higher extent, primarily because they often define themselves based on their relationships with ingroups (Hinkle & Brown, 1990), and emphasize cohesion and connections within these groups (Wei & Li, 2013; Yum, 1988). Moreover, individuals from collectivistic contexts (hereinafter referred to as "collectivist people") are more willing to cooperate with ingroup members and perceive these relationships as more intimate. Conversely, individuals from individualistic contexts (hereinafter referred to as "individualist people") have less clear distinctions between different group members. This is because their identities are typically conceived as separate entities (Hofstede, 2001; Oyserman et al., 2002; Triandis et al., 1988a, 1988b, 1990), making them less inclined to readily differentiate or discriminate against outgroup members. Unlike collectivist people, individualist people tend to have weaker bonds to any single ingroup due to the abundance of available ingroups for affiliation (Triandis, 1988, 1995). In line with this perspective, collectivist people are more likely to be influenced by group membership (Brown et al., 1992), whereas individualist people are less affected by group belongingness (Leung & Bond, 1984; Triandis & Vassiliou, 1967). These perceived differences between collectivistic and individualistic contexts lead to divergent attitudes and behaviors toward ingroup and outgroup members. Collectivist people often exhibit different behaviors in relation to ingroup and outgroup members, while individualist people display consistent behaviors regardless of group affiliation (Earley, 1993; Jami & Walker, 2022; Oyserman et al., 2002). For example, collectivist people show more ingroup favoritism (Chen et al., 1998; Sagy et al., 2001; Triandis, 1989) by exhibiting preference to communicate with members of ingroups than with members of outgroups, while

individualist people did not show the same tendency (Gudykunst et al., 1992). Furthermore,

trust and empathy are generally higher among ingroup members in collectivistic societies, but

this pattern is less pronounced in individualistic societies (Jami & Walker, 2022; Triandis et

al., 1988b). Consistent with these behavioral outcomes, another significant implication of

intergroup bias across cultural contexts could pertain to the regulation of physical distance

during interactions with ingroup and outgroup members.

Interpersonal Distance as a Relational Regulating Factor

Interpersonal distance (IPD) refers to the spatial distance that individuals maintain

between themselves and others during social interactions (Hayduk, 1978, 1983). IPD serves

as a crucial channel to convey cultural norms, individual preferences, and emotional states in

cross-cultural contexts (Hall et al., 2005). For example, members of national groups exhibit

different cultural norms concerning acceptable IPD (Aiello & Thompson, 1980; Evans et al.,

2000). In a cultural context, a close IPD could be interpreted as a sign of warmth and

engagement, whereas in another cultural context, such close proximity might be perceived as

intrusive. Notably, regulating the optimal IPD implies a subtle balance between the need to

move toward others to achieve successful interpersonal communication, and the need to keep

a safe margin with others to protect body integrity (Hayduk, 1983; Siegman & Feldstein,

2014). When IPD is too large, it can hinder effective social communication, while an overly

small IPD can trigger an increased feeling of discomfort and physiological arousal (Kroczek

et al., 2020; Candini et al., 2021). This dynamic balance is intricately tied to the regulation of

IPD in different social contexts, where distances often expand under threatening situations

and shrink in unthreatening ones (Candini et al., 2017, 2019, 2020; Hayduk, 1978; Gessaroli

et al., 2013; Massaccesi et al., 2021). For example, individuals often keep a greater IPD when someone approaches them from behind compared to approaches from the front (Beck & Ollendick, 1976; Lloyd, 2009), as being approached from behind can elicit feelings of threat and insecurity. In addition, the choice of IPD during actual social interactions is also influenced by other factors, such as age, gender, and culture (Evans & Howard, 1973; Hayduk, 1983; Iachini et al., 2016; Little, 1968; Pedersen & Heaston, 1972; Shuter, 1976; Sorokowska et al., 2017). Individuals develop the capacity to regulate appropriate IPD early on, and their preferred IPD naturally expands as they grow older (Aiello & Aiello, 1974; Hayduk, 1983; Pegán & Aiello, 1982). Gradually, gender-related differences in IPD preference also emerge, with individuals usually allowing female individuals to approach them closer than male ones (Beck & Ollendick, 1976; Lomranz et al., 1975). Additionally, cultural influences come into play, with individuals from non-contact cultures (e.g. Japan, Germany, and America) preferring a larger IPD compared to those from contact cultures (e.g. Iraqi, Italy, and Mexico; Hayduk, 1983; Lomranz, 1976; Sussman & Rosenfeld, 1982). Besides these well-documented factors, the impact of group membership on preferred IPD has also been revealed: individuals usually diminish the distance when engaging with ingroup members, whereas increasing the distance when relating to outgroup members (Novelli et al., 2010; Suzuki, 1998). For instance, in competitive situations, individuals prefer sitting closer to a teammate (an ingroup member) rather than a competitor (an outgroup member) (Campbell et al., 1966).

The Current Study

The novelty of the present study lies in addressing a gap in the existing research. If

previous studies have demonstrated the influence of ingroup and outgroup categorization on

individuals' choices of IPD, the possible moderating role of culture within this context has

remained unattended. To fill this gap, this study adopts a cross-national and thus cross-

cultural perspective in investigating differences in individuals' chosen IPD by focusing on

China and Italy, two countries characterized by differences in collectivist and individualist

conceptions and cultural values (Semin & Rubini, 1990; Triandis, 1988; Zha et al., 2006), and

by manipulating targets' national group membership.

Thus, the first aim of the present study is to examine whether the regulation of IPD is

influenced by group membership (ingroup vs outgroup) and nationality (Italian vs Chinese)

(Novelli et al., 2010). Moreover, the second aim is to replicate and extend findings on how

IPD varies based on nationality and gender of both participants and targets as well as

direction of approach of targets (Aiello & Aiello, 1974; Beck & Ollendick, 1976; Lomranz,

1976; Nowicki & Duke, 1972).

In line with prior research showing that individuals in collectivistic contexts

frequently demonstrate varying behaviors when being exposed to ingroup and outgroup

members, whereas individuals in individualistic contexts display interaction behaviors that

are not affected by their group affiliation (Duclos & Barasch, 2014; Earley, 1993; Jami &

Walker, 2022; Oyserman et al., 2002), it was hypothesized that group membership would

affect IPD regulation among Chinese participants but not among Italians participants (Novelli

et al., 2010; Triandis, 1988). Specifically, Chinese participants should exhibit a preference for

a shorter IPD with ingroup members in comparison to outgroup members, reflecting a

preference for ingroup members. In contrast, Italian participants should exhibit similar IPD

towards ingroup and outgroup members (Triandis & Vassiliou, 1967). Moreover, at an exploratory level, we also considered possible interactions among participants' nationality, group membership of target, gender of both participants and targets, and direction of target approach, in influencing the choice of IPD (Aiello & Aiello, 1974; Beck & Ollendick, 1976). To achieve the aims by testing the hypotheses, participants completed a computerized interpersonal distance task online (i.e. IVAS; Iachini et al., 2016, 2021; Wei et al., accepted, pending publication) in which Italians and Chinese participants had to choose IPD from ingroup and outgroup targets. Given that most of the studies on IVAS task have been conducted with adults, we tested how the targets were perceived in terms of ethnicity, gender, and age, in a pilot study on Italian and Chinese adolescents.

Pilot Study

We selected pictures depicting target individuals varying in terms of ethnicity (i.e., Asian and European), gender (female and male), and age (child, adolescent, adult). To pre-test the recognition of targets based on their varying characteristics a sample of Italian and Chinese participants were asked to assess the extent to which the targets are perceived in terms of ethnicity, gender, and age.

Method

Participants

A priori power analysis was conducted on G*Power (Faul et al., 2009), revealing that 98 participants would yield 0.8 statistical power to detect a medium-size effect of 0.25. Therefore, a total of 100 participants (49 male, $M \pm SD_{age} = 14.52 \pm 0.76$ years, age range = 11-15 years) were recruited from middle and high schools in China and Italy. Half of the

participants (n=50) were Chinese (24 males, $M \pm SD_{age} = 14.58 \pm 0.78$ years) and the other

half (n=50) were Italian (25 males, $M \pm SD_{age} = 14.46 \pm 0.73$ years). Participants had normal

or corrected-to-normal vision. The study was approved by the Ethics Committee of the

Psychology Department at the University of Bologna and informed consent was provided

prior to participation.

Materials

A total of 20 pictures portraying Asian (e.g., Chinese) and European (e.g., Italian)

target individuals were sourced from two online databases (Asian pictures from

https://image.baidu.com/; European pictures from https://stocksnap.io/). The selection

comprised 10 pictures for each ethnic group, with 4 children (2 female, 2 male), 4 adolescents

(2 female, 2 male), and 2 adults (1 female, 1 male). All images were scaled to 1280×720

pixels.

Procedure

The study was conducted online using the Qualtrics platform. Each participant was

presented with a series of 20 pictures displayed one at a time at the center of a computer

screen in a random order. Each picture depicted three distinct characteristics of the targets:

ethnic background (Asian or European), gender (female or male), and age category (child,

adolescent, or adult). For each picture, participants were required to answer three questions:

1) To what extent do you think this person is an Asian or European; 2) To what extent do you

think this person is a female or male; 3) To what extent do you think this person is a child, an

adolescent, or an adult. Participants rated each item on a 5-point Likert-type scale (1 = "Not

at all"; 5 = "Completely"). Taking a European female child as an example, participants were

asked to respond to the following questions:1) To what extent do you think this person is a European; 2) To what extent do you think this person is a female; 3) To what extent do you think this person is a child.

Results

A 2 ×3 repeated measures ANOVA with Nationality (Chinese vs. Italian) as between-participants factors and Attributes of Target (ethnicity: Asian/European; gender: female/male; age: child/adolescent/adult) as within-participants factors was conducted.

The analysis revealed no main effect of Nationality, $F(1, 98) = 0.92$, $p = .34$ ($\eta_p^2 = .01$) or interaction between Nationality and Attributes of Target, $F(2, 98) = 0.87$, $p = .42$ ($\eta_p^2 = .01$). Additionally, there was also no main effect of the Attributes of Target, $F(2, 98) = 2.63$, $p = .08$ ($\eta_p^2 = .03$) (see Table 1 for details). Moreover, by using a t-test against 3 (i.e., the value which corresponds to the midpoint of the scale), we found that all ratings provided by participants were significantly above the equal value of the scale (all $ps <.0001$). This evidence suggests that the targets depicted in the pictures were notably identifiable as either Asian or European, as female or male, and as child, adolescent, or adult individuals.

Table 1

Ratings of the Attributes of Target Individuals in the Pilot Study Expressed as Mean (M) and Standard Error Means (SEM)

Variable	Italian		Chinese	
	M	*SEM*	*M*	*SEM*
Ethnicity	4.36	.06	4.45	.06
Gender	4.38	.07	4.51	.07
Age	4.34	.07	4.35	.07

Main Study

Method

Participants and Design

The study was approved by the Ethics Committee of the Department of Psychology (University of Bologna; Prot. n. 113714), and all the procedure was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki (World Medical Association, 2013). The informed consent was digitally obtained from participants' parents.

A power analysis was conducted using G*Power (Faul et al., 2009) to estimate the sample size necessary to generate a medium-size effect of 0.25 with a power of .95 for 4 measurements: Nationality (Italian vs. Chinese) $\times$ Group Membership (ingroup vs. outgroup). The analysis indicated that a sample size of 54 would be required for each of the four scenarios, which we increased to 60 to allow for a possible dropout rate. A total sample of 240 participants aged between 11 and 15 years were recruited from local middle and high schools in Italy and China, from May 2022 to July 2023. Half of the participants were Italian (n=120; 52 males, $M \pm SD_{age}$ = 13.28 $\pm$ 1.54 years) and the other half (n=120) were Chinese (n=120; 64 males, $M \pm SD_{age}$ = 13.21 $\pm$ 1.43 years). Thus, participants were submitted to a mixed $2 \times 2 \times 2 \times 2 \times 2 \times 2$ design with Nationality and Gender of Participant as between-participants factors, and Group Membership (ingroup vs. outgroup), Gender of Target (female vs. male), Age of Target (peer vs. adult) and Direction of Approach of Target (back vs. front) as within-participants factors.

Procedure

Measurement of IPD: Interpersonal Visual Analogue Scale

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Before starting the task, participants were asked to report their age and gender. Then, the IPD was measured by using the Interpersonal Visual Analogue Scale (IVAS; Iachini et al., 2016, 2021), which was presented online through the Qualtrics Survey Platform (https://www.qualtrics.com/). The same twenty pictures adopted in the Pilot Study were presented. In each trial, an image was presented on a computer screen displaying two actors located on opposite sides of a horizontal line. One actor represented the participant and was labeled as "YOU / 你", while the other actor depicted the target and was labeled as "OTHER TARGET / 其他人". The starting distance between the participant and the target was 100 mm (see Figure 1). Pictures screened in the Pilot Study were randomly assigned to either the participant or target.

Figure 1

Example of Interpersonal Visual Analogue Scale (IVAS) Trials
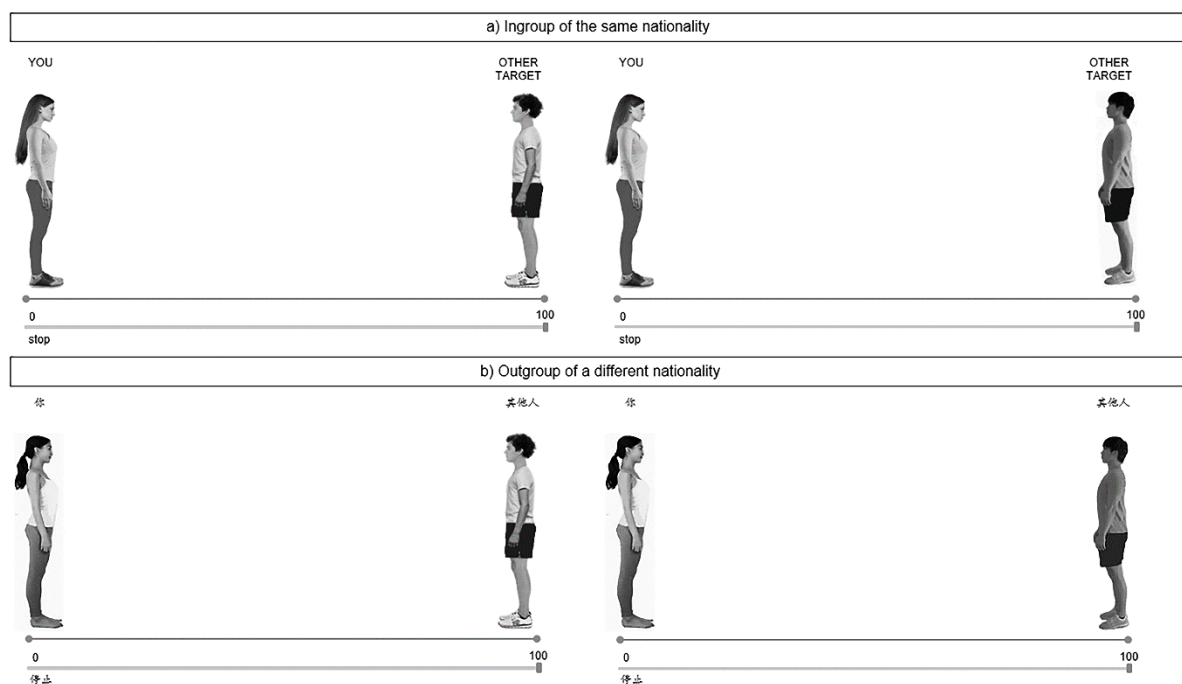
Note. The participant is a female adolescent (YOU/你) and the target on the opposite side of the line represents a male adolescent (OTHER TARGET/其他人). Participants choose IPD by

moving the rectangular slider along the grey line (from 100 to 0): the further the slider is placed from the participant, the greater the distance from the target. Upper panels depict same-nationality dyads (Italian participant being exposed to Italian target, left panel; Chinese participant being exposed to Chinese target, right panel) and lower panels depict different-nationalities dyads (Italian participant being exposed to Chinese target, left panel; Chinese participant being exposed to Italian target, right panel).

Participants were instructed to imagine themselves as the person labeled as "YOU / 你" who stood still and to imagine the target individual approaching them. They had to indicate how close they would allow the target to approach them and where they wanted the target to stop by moving a rectangular slider along the line. The physical appearance of the target was varied in order to depict either an ingroup or an outgroup individual. In accordance with the participant's nationality (whether Chinese or Italian), the target was depicted as an individual belonging to the nationality ingroup (whether a European Western individual or a Chinese individual) or to a different outgroup nationality (whether a European Western individual or a Chinese individual). The target approached either from the back or from the front. In accordance with the age of participants (whether younger or older than 12 years old), the peer target was depicted as a child (11-12 years old) or an adolescent (13-15 years old). Each participant was systematically exposed to eight different targets. Each stimulus was repeated four times, obtaining a total of 32 trials. The order of the target presentation was randomized across participants.

Results

We conducted a $2 \times 2 \times 2 \times 2 \times 2 \times 2$ mixed ANOVA on interpersonal distance. Post-hoc

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comparisons were conducted using the Bonferroni test, and the magnitude of significant effects was quantified by partial eta-squared (η_p^2). All reported p-values are two-tailed and set at $p < .05$.

The ANOVA showed a main effect of Nationality on IPD, $F(1, 232) = 192.25$, $p = .001$ ($\eta_p^2 = .45$): Chinese participants ($M = 61.01$, $SEM = 1.05$) chose a greater IPD than Italian participants ($M = 40.38$, $SEM = 1.06$). This effect was qualified by a significant interaction between Group Membership and Nationality, $F(1, 232) = 5.06$, $p = .02$ ($\eta_p^2 = .02$). Chinese participants preferred a larger IPD when they were exposed to an outgroup target ($M = 63.60$, $SEM = 1.49$) than an ingroup target ($M = 58.43$, $SEM = 1.48$, $p = .03$), while the IPD chosen by Italians participants did not significantly change in relation to ingroup ($M = 41.14$, $SEM = 1.51$) or outgroup target ($M = 39.61$, $SEM = 1.48$, $p = .47$, see Figure 2a).

Furthermore, the analysis produced an interaction between Group Membership and Direction of Approach $F(1, 232) = 8.12$, $p = .01$ ($\eta_p^2 = .03$). Participants kept a larger IPD when the outgroup target approached from the back ($M = 52.52$, $SEM = 1.08$) compared to when the target approached from the front ($M = 50.70$, $SEM = 1.06$, $p = .001$). No significant difference in IPD was found in relation to the different ingroup approaches (back: $M = 49.86$, $SEM = 1.08$; front: $M = 49.70$, $SEM = 1.07$, $p = 1.00$, see Figure 2b).

We also found a significant interaction among Nationality, Gender of Participant and Gender of Target on IPD, $F(1, 232) = 16.02$, $p = .00$ ($\eta_p^2 = .07$). In the Chinese sample, female participants ($M = 71.27$, $SEM = 1.70$) chose a greater IPD than male participants ($M = 58.07$, $SEM = 1.59$, $p = .00$) when exposed to a male target. This effect was not presented when Italian participants were exposed to male targets (female participants: $M = 44.51$, SEM

= 1.55; male participants: $M = 40.29$, $SEM = 1.77$, $p = 0.40$, see Figure 3). Conversely, both

Chinese and Italian participants chose comparable IPD in relation to female targets,

regardless of the gender of the participants (Chinese female: $M = 57.89$, $SEM = 1.49$; Chinese

male: $M = 56.83$, $SEM = 1.39$, $p = 1.00$; Italian female: $M = 38.00$, $SEM = 1.35$; Italian male:

$M = 38.71$, $SEM = 1.55$, $p = 1.00$, see Figure 3).

Figure 2

Interpersonal Distance (IPD) as a function of Group Membership, Nationality, and Direction
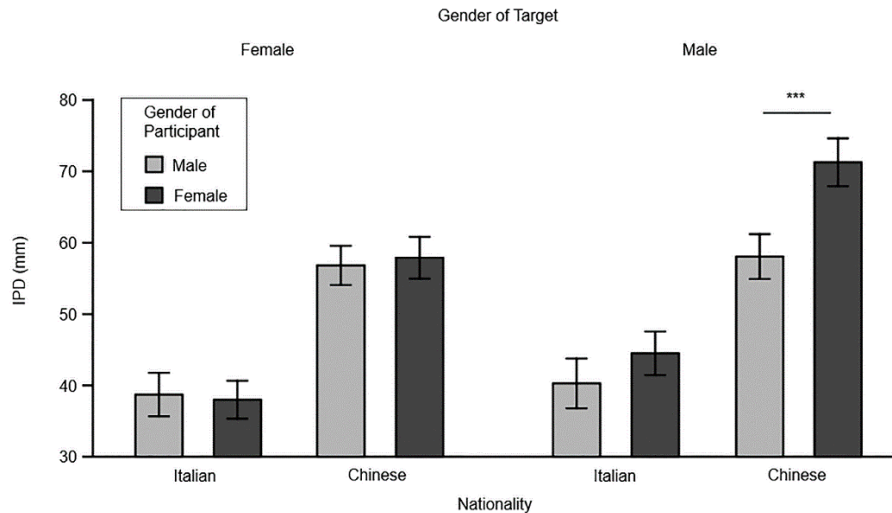
of Approach
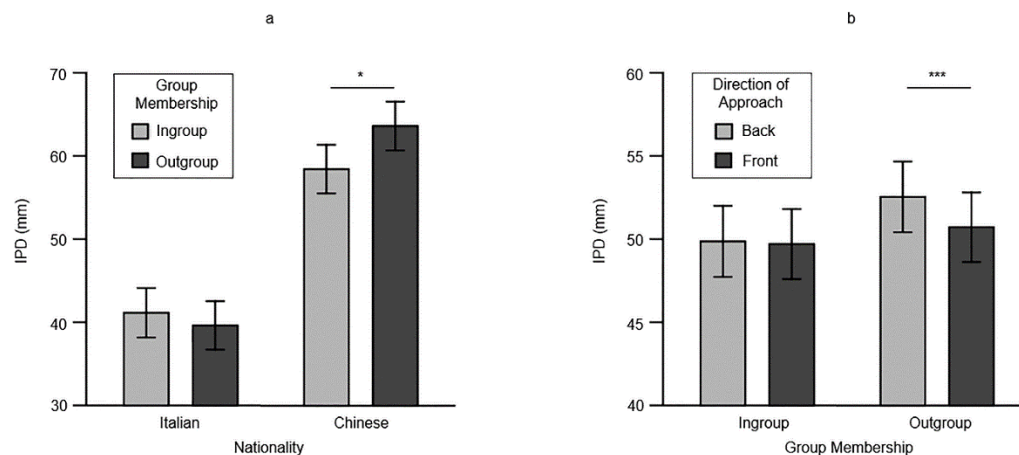
Note. Chosen IPD as a function of Group Membership and Nationality (a), and Group

Membership and Direction of Approach (b). Error bars indicate standard deviation (SD).

Asterisks reports significant differences.

Figure 3

Interpersonal Distance (IPD) as a function of Nationality, Gender of Participant, and Gender

of Target

Note. Chosen IPD as a function of Nationality, Gender of Participant, and Gender of Target. Error bars indicate standard deviation (SD). Asterisks reports significant differences.

Discussion

The present study investigated how group membership and nationality influence the choice of interpersonal distance (IPD) in a sample of Chinese and Italian participants by using a computerized task (i.e., IVAS; Iachini et al., 2016, 2021). Moreover, we examined the impact of the participant's nationality, gender of the participant, gender of the target, and direction of approach on the regulation of IPD.

Our findings showed that group membership and nationality influence the IPD chosen by participants: Chinese participants chose a larger IPD compared to Italians, especially in relation to outgroup targets than ingroup ones. This evidence can be interpreted in the light of Brown and Hinkle's model (Brown et al., 1992; Hinkle & Brown, 1990), claiming that psychological processes and social behaviors can vary across different types of groups by crossing the collectivism-individualism distinction with relational versus autonomous group orientations. Most East Asian societies, like China, are characterized by collectivism and relational orientation (Chen et al., 2002; Sun et al., 2023; Wheeler et al., 1989). In such

cultural contexts, individuals often emphasize the comparison between ingroup and outgroup outcomes (Brown et al., 1992) as well as the establishment of close-knit relationships with members of their own social groups (Gudykunst et al., 1992; Triandis et al., 1988a; Wang et al., 2019). This cultural emphasis results in heightened awareness of the distinctions between ingroup and outgroup members, the development of higher ingroup trust (Triandis et al., 1988b), and stronger preferences for ingroup members (Chen et al., 2002). Consistent with the findings, the emphasis on group boundaries is also reflected in Chinese participants who chose a greater IPD from outgroup members than from ingroup members. Conversely, many European societies, like Italy, particularly in the North-East area where the data were collected, can be conceived as being higher in individualism and autonomous orientation (Durante et al., 2009; Prati et al., 2022; Semin & Rubini, 1990). In this socio-cultural context, there is a tendency to make few distinctions and comparative assessments among various social groups. Instead, these comparisons are typically based on certain abstract standards that do not involve other groups (Brown et al., 1992). This phenomenon can be attributed to the prevailing cultural norm that prioritizes individual autonomy and achievement, while concurrently promoting values such as equity and universalism (Hui & Triandis, 1986). Consequently, individuals are inclined to perceive everyone as potential equals regardless of group affiliation (Gudykunst et al., 1992; Triandis et al., 1988a, 1990). This attenuation of group boundaries and amplification of equity principles extends to physical proximity as well, so that Italian people displayed less differentiation between ingroup and outgroup members in terms of IPD choices.

Moreover, the collected evidence can be interpreted in the light of other research

(Duclos & Barasch, 2014; Earley, 1993; Hasler & Friedman, 2012; Jami & Walker, 2022),

showing that collectivist people exhibited lower performance when collaborating with

outgroup members compared to when they worked together with ingroup fellows.

Conversely, individualist people displayed consistent performance levels, regardless of

whether they were working with ingroup or outgroup members, with their optimal

performance being achieved when working independently. The present findings are not

related to collaboration goals but they may be considered as antecedent of interactions with

ingroup and outgroup members since IPD is manifested in social interactions. Specifically,

the observed pattern indicates that collectivist people (i.e. Chinese participants) choose a

larger IPD from outgroup than ingroup targets, whereas individualist people (i.e. Italian

participants) showed a consistent IPD preference, irrespective of whether that was chosen in

relation to ingroup or outgroup members. Besides the fact that Italians can be conceived as

less collectivist people than Chinese, results could also be related to the phenomenon of

migration and thus intergroup contact. In countries with low immigration rates, like China

(CCG, 2018), people may have fewer opportunities to encounter and communicate with

people from different countries. This limited exposure could lead them to adhere more closely

to their own cultural norms. Concerning the physical distance norms, Chinese people have

been guided to stay away from strangers and avoid contact with unfamiliar individuals since

childhood (Zhang, 2001). This may explain their preference for maintaining a greater distance

from unfamiliar others, especially from individuals of different groups. In addition, the

obtained findings are likely related to the ingroup favoritism tendency (Tam et al., 2007).

People often perceive their ingroup members as more similar and trustworthy (Brown, 2000;

Platow et al., 2012), thereby fostering a feeling of familiarity, intimacy, and psychological comfort. This feeling may lead to a reduced need for physical distance. By contrast, people may view outgroup members as dissimilar and potentially as competitors or even threats (Rothgerber, 1997). These perceptions can trigger a high level of psychological discomfort and alertness (Fini et al., 2020), hence being related to an increased interpersonal and intergroup distance to minimize potential conflicts or threats.

In contrast, Italy, as a major immigration destination (IOM, 2019), has attracted immigrant groups from around the world, including a consistent number of Chinese immigrants, who have become the third largest minority in Italy (EpiCentro, 2019; Ministero del Lavoro e delle Politiche Sociali 2018; Statistiche Tuttitalia 2022). Notably, data collection was conducted in Bologna where immigrants from China have steadily grown in the last decade (Minuz & Forconi, 2018; Statistiche Tuttitalia 2022). As a consequence of this migration, it is likely that Italian adolescents are frequently exposed to Chinese peers in schools, leading them to consider Chinese schoolmates as part of their peer groups in school due to constant intergroup contact with them. This consideration may potentially result in a relatively consistent attitude in terms of IPD with Italian fellows and Chinese individuals.

We also found that participants chose a greater IPD from an outgroup target approaching them from behind compared to when the target approached them from the front. These findings extend previous research indicating that individuals typically maintain a greater IPD when someone approaches them from their back (Adams & Zuckerman, 1991; Beck & Ollendick, 1976; Lloyd et al., 2009). This tendency is likely linked to the fact that approaching from behind diminishes the availability of visual cues and facial expressions,

thereby making it challenging to accurately assess the intentions or actions of the approaching individuals. The lack of direct visual perception can intensify feelings of uncertainty and unpredictability on the situation. Hence, this leads people to establish a larger physical distance to gain a sense of safety and control. People who are placed in a potentially threatening and uncomfortable context tend to exhibit an expanded IPD (Candini et al., 2017, 2019, 2020; Dosey & Meisels 1969; Lloyd, 2009). Notably, the present findings showed that this pattern is even more pronounced when someone is belonging to an outgroup. Indeed, when an outgroup member approaches from behind, it is likely that participants interpret it as potentially risky and threatening due to the limited ability to assess the strangers' motives, thereby prompting a desire to increase IPD as an adaptive response to this perceived threat. This distancing behavior can also be explained through the lens of "embodied cognition", which is a mechanism involving the integration of sensory input, emotional response, and motor action. This concept posits that cognitive processes are profoundly impacted by the interactions with the environment through our physical bodies (D'Angelo et al., 2017; de Vignemont, 2011; Paladino et al 2010; Schnall, 2011). In this case, individuals are likely to automatically evoke feelings of threat when approached from behind by an outgroup member, and thus, they regulate their physical space to reduce potential threats or enhance a sense of comfort.

Interestingly, when considering both the gender of participants and targets within Chinese and Italian cultural contexts, an intriguing result emerges: in Chinese contexts, we found that female participants maintained a greater IPD from male targets than male participants did, while this pattern was not highlighted in relation to with female targets.

These findings further refine previous research results, which indicated that individuals usually keep a larger IPD from males than from females (Beck & Ollendick, 1976; Lomranz et al., 1975). Importantly, our findings highlight that this tendency is particularly evident among Chinese female adolescents. This finding can be attributed to the influence of gender stereotypes. In the context of Chinese culture, there may be a stronger emphasis on traditional gender stereotypes, where males are commonly ascribed with more threatening characteristics, such as excessive dominance, aggression, intimidation, and control (Cheung, 1996; Eagly et al., 2000). Conversely, females often exhibit heightened interpersonal sensitivity towards potentially threatening and unfamiliar situations, possibly leading them to perceive themselves as more likely to be threatened and to experience uncomfortable circumstances (Ellemers, 2018; Harris & Miller, 2000; Zheng et al., 2022), especially when engaging with unfamiliar males. Consequently, this increased sense of vulnerability and perception of potential threats likely drive them to establish a greater physical boundary with males. On the other hand, within Chinese culture, females are often stereotypically perceived as being warm, affectionate, and approachable, potentially reducing the likelihood of evoking feelings of potential threat (Cheung, 1996; Eagly et al., 2000). Therefore, individuals, both male and female, may tend to maintain a consistent physical distance from female targets.

The absence of a similar pattern in Italian participants can be ascribed to the impact of cultural conception in moderating the contents of gender stereotypes (Cuddy et al., 2015). In individualistic countries like Italy, gender stereotypes tend to be more flexible, less rigid, and prone to change over time (Gibbons, 2000), allowing individuals greater autonomy to define their own gender roles and behaviors according to their personal preferences and desires. Our

findings might reflect this flexibility, showing that Italian individuals, regardless of their gender, do not display noticeable differences in interpersonal distance based on the gender of the person they are exposed to with.

Limitations and Future Directions

The current study has some limitations to be noted while interpreting the results. First, while extensive research has adequately demonstrated that China exhibits collectivist tendencies and Italy is associated with individualism (Chen et al., 2002; Durante et al., 2009; Prati et al., 2022; Semin & Rubini, 1990; Sun et al., 2023), this present study has not quantified these constructs. Thus, in order to enhance the robustness and generalizability of our findings, it's important for us to measure both individualism and collectivism in subsequent studies. Nevertheless it should also be noted that previous studies have attested that individualism collectivism conceptions are significantly different across Italy and China. (Germani et al., 2021; Piumatti et al., 2014, 2016). Secondly, future research could take advantage of face-to-face interactions or virtual reality scenarios where the experiment can mitigate potential biases stemming from by participants' awareness of being under observation, thus yielding a more realistic assessment of IPD regulation. Finally, given Italy's substantial population of Chinese immigrants, another direction for future research involves examining potential differences in interpersonal and intergroup distance preferences between native Italians and Chinese individuals residing in Italy, thus providing some insights for cross-culture and acculturation studies.

Conclusion

This study found that Chinese individuals maintained larger interpersonal distance

than Italians, especially when Chinese individuals were exposed to outgroup members as opposed to ingroup members. Additionally, the regulation of interpersonal distance is also influenced by the gender and direction of approach of the interactants. This suggests that the interplay between group membership and cultural conception plays a pivotal role in shaping individuals' preferences for interpersonal distance. The study not only contributes to the understanding of intergroup dynamics that influence social interactions among individuals from diverse cultural contexts, but it can also help in understanding how to facilitate more effective communication and foster positive intergroup relations.

Appendix

Results
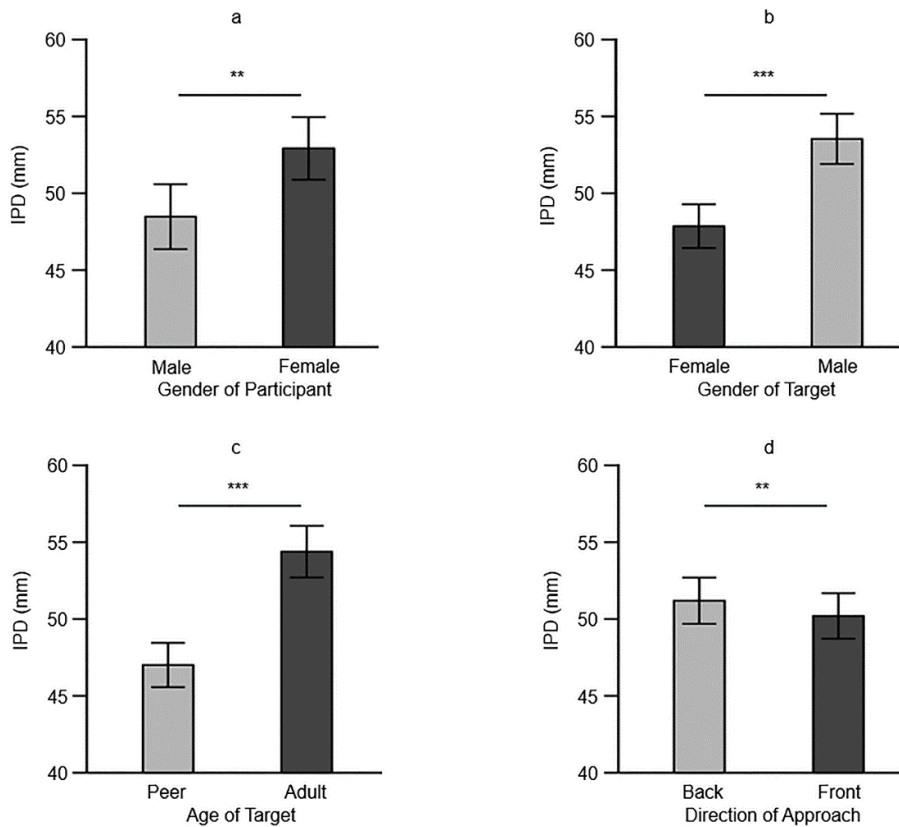
Gender, Age, and Direction of Approach on IPD

The ANOVA showed significant effects on IPD: Gender of Participant, $F(1, 232) = 8.91$, $p = .00$ ($\eta_p^2 = .04$): females preferred larger IPD ($M = 52.92$, $SEM = 1.03$) than males ($M = 48.47$, $SEM = 1.07$, see Figure A1a); Gender of Target, $F(1, 232) = 159.00$, $p = .00$, ($\eta_p^2 = .41$): participants maintained a greater IPD from male ($M = 53.53$, $SEM = 0.83$) than female targets ($M = 47.86$, $SEM = 0.72$, see Figure A1b); Age of Target, $F(1, 232) = 175.15$, $p = .00$ ($\eta_p^2 = .43$): participants chose larger IPD from adult ($M = 54.38$, $SEM = 0.85$) than peer targets ($M = 47.01$, $SEM = 0.73$, see Figure A1c); and Direction of Approach, $F(1, 232) = 11.63$, $p = .00$, ($\eta_p^2 = .05$): a greater IPD was found when the targets approached from the back ($M = 51.19$, $SEM = 0.76$) than frontally ($M = 50.20$, $SEM = 0.75$, see Figure A1d).

The significant Gender of Participant and Gender of Target interaction on IPD $F(1, 232) = 89.99$, $p = .001$, ($\eta_p^2 = .28$) was also further explained by the significant three-way interaction Gender of the Participant and Gender of Target and Age of Target, $F(1, 232) = 4.76$, $p = .03$ ($\eta_p^2 = .02$). Female participants preferred a larger IPD from male than from female targets, especially if the target is a peer (male: $M = 53.85$, $SEM = 1.13$ vs female: $M = 43.31$, $SEM = 1.04$, $p = .001$). Conversely, male participants chose similar IPD with peer male ($M = 45.75$, $SEM = 1.17$) and peer female targets ($M = 45.12$, $SEM = 1.08$, $p = 1.00$, see Figure A2). Interestingly, male participants preferred a greater IPD when being exposed to adult male targets ($M =$

52.60, *SEM* = 1.38) compared to adult female targets (*M* = 50.42, *SEM* = 1.18, *p*

= .03), whereas their preferred IPD with peer male and peer female targets exhibited

relatively consistent (peer male target: *M* = 45.75, *SEM* = 1.17; peer female target: *M*

= 45.12, *SEM* = 1.08, *p* = 1.00, see Figure A2).

Figure A1

Interpersonal Distance (IPD) as a function of Gender of Participant, Gender of

Target, Age of Target, and Direction of Approach

Note. Chosen IPD as a function of Gender of Participant (a), Gender of Target (b),

Age of Target (c), and Direction of Approach (d). Error bars indicate standard

deviation (SD). Asterisks reports significant differences.

Figure A2

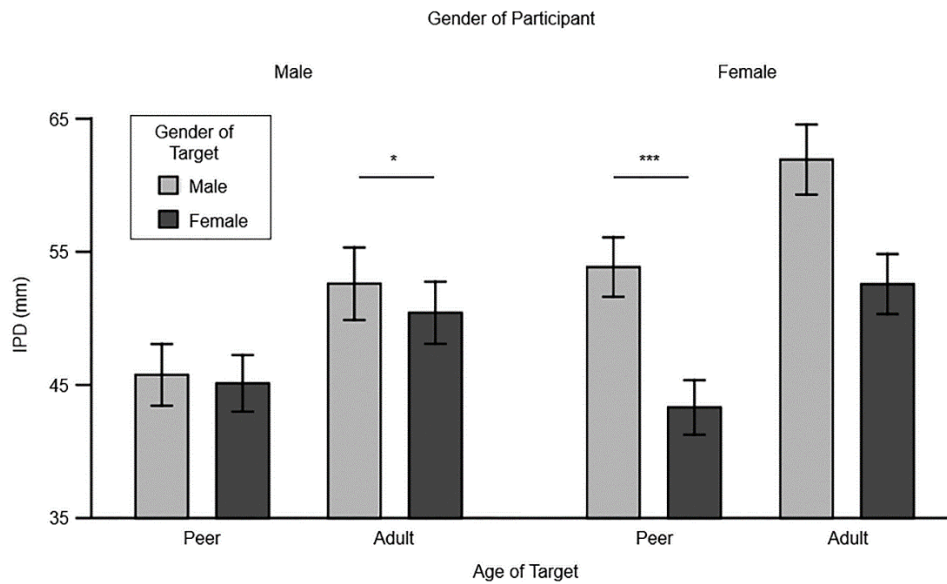*Interpersonal Distance (IPD) as a function of Gender of Participant, Gender of Target,*

and Age of Target

Note. Chosen IPD as a function of Gender of Participant, Gender of Target, and Age

of Target. Error bars indicate standard deviation (SD). Asterisks reports significant

differences.

CHAPTER 4

General Discussion

This dissertation, focusing on intragroup, intergroup, and cultural perspectives, aimed primarily to broaden existing literature by investigating the influence of social identification with significant social groups on adolescents' choice of IPD and their involvement in bullying and cyberbullying behaviors, as well as examining the impact of group membership and cultural conceptions on adolescents' preference for IPD. In the subsequent section, a summary of findings will be provided. Following that, the results of the dissertation will be discussed. Finally, theoretical and practical implications will be presented, along with the strengths, limitations, future directions, and conclusion.

Summary of Findings

The study reported in Chapter 2 of this dissertation highlighted the significant role of social identification in adolescents' engagement in social behaviors. This research revealed that one's social identification with significant social groups (i.e., classmates, friends, and family) influenced adolescents' choice of IPD: higher identification with peers, including classmates and friends, correlated with shorter IPD maintained from unknown individuals. The influence of social identification also extended to adolescents' involvement in both traditional bullying and cyberbullying behaviors. In traditional bullying, a significant association between a stronger sense of belonging to one's family and reduced engagement in perpetration behavior emerged. Concerning cyberbullying, similar trends were observed in terms of the impact of identification with classmates and family on victimization, where a stronger sense of belongingness to either classmates or family correlated with a reduced likelihood of

experiencing online victimization. Overall, the consistent significance of belonging to peer and family groups in influencing the choice of IPD and involvement in bullying behaviors underscored the crucial role of group belongingness in shaping social behaviors.

The study presented in Chapter 3 delved into various factors influencing adolescents' preferences for IPD, including group membership, cultural conceptions, gender, and direction of approach. Through a cross-cultural research approach, specifically examining the differences between Chinese (representing collectivism) and Italian (representing individualism) cultures, this study unveiled significant effects arising from the interplay between group membership and nationality on IPD preferences. Chinese individuals maintained a greater distance from outgroup members compared to ingroup members, while Italian individuals chose a relatively consistent distance from both groups. Gender dynamics further shaped preferences, particularly within the Chinese population. Female participants tended to choose a larger IPD with unfamiliar males compared to male participants, whereas such gender-based differences were less pronounced among Italian participants. Finally, an interaction between group membership and direction of approach emerged: both Chinese and Italian participants exhibited a larger distance with outgroup members who approached from behind compared to those approaching from the front. Overall, by adopting a social identity approach, these findings emphasize the importance of integrating social categorization (e.g., in-group and out-group categorization) with cultural perspectives (e.g., collectivism and individualism). This comprehensive

approach contributes to gaining a deeper understanding of how individuals from diverse cultural backgrounds can effectively engage in meaningful interpersonal exchange and intergroup interactions.

Social Identification, Interpersonal Distance and Bullying/Cyberbullying Behaviors

The empirical study reported in Chapter 2 indicates the pivotal role of social identification in shaping individuals' social behaviors (i.e., the choice of IPD), thus extending the functions of social identification (Deaux et al., 1999; Van Vugt & De Cremer, 1999). Deaux et al. (1999) employed a self-reporting method with a fill-in-the-blank format, revealing various functions of social identification across individual and intergroup levels. These functions encompass self-insight and understanding, downward social comparison, collective self-esteem, social interaction, and ingroup cooperation. Notably, the significance of these functions varies based on social identity, as evident among students where ingroup cooperation holds particular importance. Similarly, in the context of adolescence, many researchers found that social identification with peer groups not only fulfills individual needs, such as enhancing self-esteem, promoting self-understanding, and coping with developmental tasks (Benish-Weismanet et al., 2015; Palmonari et al., 1990; Tarrant et al., 2006), but also serves collective functions influencing individuals' cognitions and functioning within their community or society (i.e., social well-being, Albarello et al., 2021). The current empirical study, by considering interpersonal distance, has contributed to collecting evidence and expanding theorization regarding the functions of social

identifications (Deaux et al., 1999). Indeed, the results highlight a correlation wherein heightened social identification corresponds to a reduction of IPD towards unknown others.

Notably, the significance of this finding becomes particularly noteworthy when considering the methodological approach employed in the study. Past research examining the functions of social identification has predominantly relied on self-report measures and subjective perceptions (Benish-Weismanet et al., 2015; Deaux et al., 1999; Palmonari et al., 1990; Tarrant et al., 2006), regardless of single-item measure and multi-dimensional scales (Karataş et al., 2023; Postmes et al., 2013; Reysen et al., 2013). For example, Haslam et al. (2005) endeavored to examine the role of social identification in shielding individuals from adverse reactions. They utilized a two-item measure to assess social identification and identified a robust positive association between social identification and both social support and life satisfaction, along with a significant negative relationship between social identification and stress. In this sense, the behavioral measure used in the present study highlights its advantages by providing a relatively objective and concrete assessment of individuals' responses within social contexts. Simultaneously, this implementation enhances the robustness and reliability of the findings.

Moreover, by redirecting focus towards the positive influence of social identification, the empirical outcomes provide new insights into nurturing positive intragroup relationships. The study identified a negative association between social identification and involvement in bullying and cyberbullying. This is consistent with

previous research and emphasizes the pivotal role of belonging to family and peer

groups in protecting individuals from negative behaviors (Jones et al., 2009, 2011;

Newman et al., 2007; Turner et al., 2014). When individuals highly identify with their

family and peer groups, they experience stronger group belongingness, increased

psychological security, and greater social support (Kirchler et al., 1991; Palmonari et

al., 1991; Sani, 2012). This supportive network empowers individuals to face setbacks

and difficulties more confidently (Laursen & Mooney, 2008), fostering interpersonal

competence and problem-solving in social interactions (Galambos et al., 2003;

Laursen et al., 2006). As a result, there is a reduction in the likelihood of engaging in

perpetration and victimization across different bullying scenarios.

Notably, the positive impact of social identification extends beyond mitigating

bullying and cyberbullying, it encompasses a broader spectrum of negative

experiences. Indeed, when individuals feel a strong connection to a specific group,

they are less prone to engaging in such adverse behaviors. Even if they find

themselves involved in negative incidents, their strong group identification

encourages the adoption of positive interaction patterns and coping strategies

(Palmonari et al., 1991; Pombeni et al., 1990). This, in turn, contributes to improving

the quality of intragroup relations. In this sense, the findings presented in this study

indicate that high social identification with meaningful social groups can be proposed

as a promising approach to buffer negative relationships.

Group Membership and Cultural Conceptions on Interpersonal Distance

Regulation

The study reported in Chapter 3 revealed the pivotal role of group membership and cultural conceptions in shaping individuals' choice of IPD. The finding that Chinese participants maintained a greater IPD than Italian participants contributes significantly to the cross-cultural psychology literature. While previous research has highlighted cultural variations in proxemics (Hall, 1966; Sorokowska et al., 2017), this study offers empirical evidence supporting such differences, particularly between Eastern and Western cultural contexts, based on the conception of collectivism and individualism. This reinforces the notion that cultural norms and values play a pivotal role in shaping individuals' interpersonal and intergroup behaviors, shedding light on the complexity of cultural differences in social interactions. Moreover, the interplay between group membership and cultural conceptions shows a noteworthy tendency in the choice of IPD. Chinese participants demonstrated a distinct variation in their proximity preferences towards ingroup and outgroup members, while Italian participants maintained a relatively consistent distance from both groups. The observed tendency of Chinese participants to maintain a larger distance from outgroup members compared to ingroup members can be explained through the lens of social categorization theory. According to this theoretical framework, individuals categorize themselves and others into ingroups and outgroups based on salient social cues, such as nationality or ethnicity (Tajfel et al., 1979). They tend to exhibit favoritism towards ingroup members while perceiving outgroup members as less trustworthy or affiliative (Brewer, 1999). This ingroup favoritism in IPD preference among Chinese participants resonates with the phenomenon of "ingroup bias" in social identity

theory, which may stem from a desire to maintain ingroup cohesion and solidarity while minimizing contact with potentially threatening outgroup members. This underscores the pervasive influence of social categorization processes on proxemic behaviors and emphasizes the role of intergroup dynamics in shaping social interactions.

These results align with a widely acknowledged phenomenon in social psychology known as intergroup bias, which traditionally addresses prejudiced attitudes, discriminatory behaviors, and differential treatment towards members of different groups (Hewstone et al., 2002). Researchers commonly employ various well-established explicit measures to assess this phenomenon through conscious self-report methods (Crocetti et al., 2021). Considering that explicit measures may affect research assessments because of individuals' desire to balance their inclination to positively evaluate their own group and their wish to maintain a self-image of fair-mindedness, researchers developed a new assessment method involving implicit measures that tap unintentional bias (Hewstone et al., 2002), such as self-report assessment (Von Hippel et al. 1997), response-latency procedures following priming (e.g., the 'implicit association task' and its variants, e.g., Dovidio et al., 1997; Greenwald et al., 1998; Newheiser & Olson, 2012), and memory tasks (Sherman et al. 1998). These assessments primarily rely on cognitive and emotional measures, but there is relatively limited research on behavioral measurements (Goff et al., 2008). Therefore, in the present study, incorporating interpersonal distance as a behavioral measure enriches the assessments of intergroup bias, revealing the spatial distance

maintained by Chinese and Italian individuals with ingroup and outgroup members.

Moreover, by shifting focus towards the positive influence of mitigating such bias, the empirical results provide new perspectives on enhancing positive intergroup relationships. The study found that collectivist individuals preferred closer proximity to ingroup members (e.g., collectivist people) compared to outgroup members (e.g., individualist people). This observed bias may be intricately linked to the extent of individuals' exposure to others from different cultural backgrounds. Given that China has a low immigration rate (CCG, 2020), Chinese individuals exhibit relatively limited interaction with people from individualist societies, thereby engendering misconceptions and prejudicial attitudes. In this context, contact theory provides valuable insights for addressing this limitation, not only in mitigating the intergroup bias related to proximity, as revealed in this study, but also in broader areas such as violent conflict resolution (Ramiah & Hewstone, 2013). Strategies derived from this theory, such as promoting learning about the outgroup, reducing intergroup threat and anxiety, and employing empathy (Finlay & Stephan, 2000; Pettigrew & Tropp, 2008; Stephan & Finlay, 1999; Whitford & Emerson, 2019), could effectively address and potentially alter the observed preferences for proximity to one's own group. Overall, by increasing opportunities for cross-cultural exchanges, individuals can gain a deeper understanding of the values, beliefs and social customs of different cultures, thereby diminishing stereotypes and prejudices arising from a lack of direct contact. Such exchanges not only contribute individuals to understanding each other, but also promote cultural integration and sharing, leading to more open and tolerant

relationships between individuals from diverse cultures.

It is crucial to acknowledge that facilitating positive encounters between collectivists and individualists is based on the awareness of the existence of different cultural norms. Extensive research has highlighted the importance of sensitivity to cultural differences and norms in managing potential confusion, embarrassment, and even conflicts that may arise during intercultural and intergroup encounters (Bennett, 1998; Kimmel, 2006). Indeed, identifying and following the notions that collectivist individuals tend to display more favorable behaviors towards their ingroup members (Earley, 1993; Duclos & Barasch, 2014; Triandis et al., 1988a), whereas exhibiting more distant and reserved behaviors towards outgroup members contribute to mitigating the potential misunderstandings in interactions among individuals from collectivist backgrounds. On the other hand, recognizing the inclination of individualist people to exhibit relatively consistent behaviors when being exposed to both ingroup and outgroup members can assist other groups in better understanding and adapting to behavioral patterns prevalent in individualist contexts. Another interesting finding related to cultural conceptions is that in Chinese culture, female participants tended to maintain a greater distance from unfamiliar males compared to male participants, highlighting a more traditional gender stereotype in collectivist cultures. This pattern is less noticeable among Italian participants, reflecting a more flexible gender stereotype in individualist cultures. These cultural variations also imply the importance of identifying and respecting cultural norms, such as these gender stereotypes, in avoiding the potential barriers arising from intergroup

interactions.

Tanking together, it is possible to speculate that understanding and respecting the variations in social behaviors exhibited by individuals from diverse cultures towards members of different groups and fostering positive contact between these diverse groups, are valuable approaches to promote smooth and constructive intercultural communications, thereby further facilitating successful intergroup relations in contemporary societies.

Theoretical and Practical Implications

In terms of theoretical implications, this dissertation adopting a cross-fertilization approach makes a significant contribution to the field of social psychology by synthesizing and proposing a comprehensive theoretical model that elucidates the intricate mechanisms underlying the regulation of interpersonal distance. By integrating intragroup dynamics, intergroup relations, and cultural influences, this model offers a multifaceted perspective that explicates the role of social identification, group membership, and cultural conceptions in shaping proxemic behaviors during adolescence. This theoretical model not only contributes to advancing our understanding of proxemic behaviors, but also lays the groundwork for future investigations that delve deeper into the intricate dynamics among intragroup, intergroup, and cultural influences on broader social behaviors.

Notably, IPD preferences are intricately linked to the neural mechanisms underlying social cognition and emotional processing. Previous neuroimaging studies have demonstrated the role of frontal and temporo-parietal regions in interpersonal

distance regulation (Massaccesi et al., 2021; Perry et al., 2016; Holt et al., 2014), while subcortical structures, such as the amygdala, are implicated in processing social-emotional information related to others approaching (Adolph, 2010; Kennedy et al., 2009). Future research could employ advanced neuroimaging techniques, such as functional magnetic resonance imaging (fMRI), to investigate the neural substrates of IPD preference among individuals with varying levels of social identification and those from diverse cultural backgrounds. By elucidating the neural correlates of these behaviors, we can gain a deeper understanding of the cognitive and emotional processes involved in social interactions.

Regarding practical implications, unraveling factors that can promote intergroup relations is a priority in contemporary societies. The scientific insights presented in this dissertation suggest that social identification with meaningful groups in the context of intragroup dynamics, along with group membership and cultural conceptions associated with intergroup dynamics, can influence individuals' intergroup relations by impacting their choice of interpersonal distance. Along this line, the findings from this dissertation offer a pivotal guideline for tailoring and delivering evidence-based intervention programs aimed at reducing social issues (i.e., bullying and cyberbullying), intergroup biases, prejudice (Albarello et al., 2023), conflicts, and fostering positive intercultural interactions and intergroup relations.

Going further, a deeper understanding of neural mechanisms underlying the socio-emotional IPD regulation can help provide guidance for clinical interventions and psychological health issues. For instance, interventions such as neurofeedback

training targeting these neural mechanisms may be helpful in improving individuals'

social interaction, thereby enhancing their social adaptation and psychological well-

being (Kouijzer et al., 2010). Furthermore, understanding how social identity

influences neural responses can inform strategies for reducing social stigma and

promoting social inclusion.

The applied implications of this study extend to developmental psychology.

The findings concerning the relationships between social identification and

bullying/cyberbullying behaviors have significant implications for interventions

aimed at enhancing individuals' well-being and reducing involvement in negative

behaviors. Recognizing the influence of family and peer relationships on adolescents'

behavior, interventions should target both familial and peer contexts to foster positive

social identification and strengthen supportive relationships. Ultimately, this can lead

to the development of more effective interventions and policies that promote positive

outcomes for adolescents.

Strengths, Limitations, and Future Directions

The current dissertation has several strengths. First, it adopted an innovative

cross-fertilization approach, including social-psychological, neuroscience and

developmental psychology, to investigate the influence of social identification, group

membership, and cultural conceptions on individuals' proximity behavior, as well as

the impact of social identification on negative behaviors in adolescence. Second, the

current dissertation addressed the choice of interpersonal distance from intragroup

dynamics, intergroup relations, and cultural influences aspects, providing a more

comprehensive perspective to examine the factors influencing individuals' preferences for closeness during social interactions.

Notwithstanding the abovementioned strengths, this dissertation has a few limitations that should be addressed in future studies. The most important limitation concerns the cross-sectional design used in this research, which fails to capture the dynamic nature of changes in adolescents' social identification, group affiliation, involvement in bullying/cyberbullying behaviors, and choice of interpersonal distance over time and with experience. Relatedly, the cross-sectional design precludes the ability to make inferences about the directionality of these relations. Another limitation is the generalizability of these results due to the relatively homogenous sample. Participants were recruited from Italy and China, representing the cultural contexts of collectivism and individualism, respectively. However, there is some evidence that a specific society may exhibit tendencies of both collectivism and individualism (Piumatti et al., 2014, 2016). Therefore, to determine the extent to which the present findings generalize to different cultural contexts, future research should examine how ingroup and outgroup distinctions shape the chosen interpersonal distance in more specific contexts.

All the dynamic endeavors examined in this dissertation are the core aspects of adolescence because social identification is important for adolescents to adequately perform their developmental tasks as well as for them to achieve well-being (Albarello et al., 2021; Crocetti et al., 2023; Miller et al., 2015), bullying behavior is most frequent during this time period and is associated with several internalizing and

externalizing symptoms (Hemphill et al., 2015; Hysing et al., 2021), and the choice of interpersonal distance varies based on their experience (Candini et al., 2017). However, all endeavors are ongoing processes that might be experienced in different phases of life (Escart ń et al., 2013; Welsch et al., 2021). Thus, in future research, more knowledge could be provided on how these processes continue to develop across the full range of ages.

In addition, this current dissertation has primarily focused on adolescents' identification with their primary social contexts, encompassing peers and family. However, the interactions and consequent outcomes experienced by adolescents are also embedded in various ecological contexts, such as schools and communities (Duggins et al., 2016; Michalski et al., 2020). For example, a significant role is attributed to school belonging in mitigating internalizing and externalizing symptoms when confronted with instances of school bullying (Arslan, 2019, 2021; Osterman, 2000). Along this line, forthcoming research combining these multiple ecological systems could offer a comprehensive perspective to understand whether and how these immediate and more distal ecological systems influence the social behaviors of adolescents.

General Conclusion

Interpersonal distance plays a crucial role for adolescents in building and maintaining long-lasting and favorable interpersonal and intergroup relationships. In recognition of the gap in comprehending the multifaceted impact of intragroup, intergroup, and cultural dynamics on the regulation of interpersonal distance, the present dissertation gathered two research strands to understand how multiple factors impact this regulation. Chapter 2 offers new perspectives by demonstrating the effects of social identification with significant social groups (i.e., classmates, friends, family) on the choice of interpersonal distance. Furthermore, Chapter 2 also sheds light on the effects of social identification on the involvement in bullying/cyberbullying behaviors. Chapter 3 contributes novel empirical evidence elucidating the crucial effects of group membership and cultural conceptions on the regulation of interpersonal distance. Overall, this dissertation underscores the paramount importance of social identification, group affiliations, and cultural perspectives in guiding adolescents' choices regarding interpersonal distance during social interactions. By synthesizing these multifaceted influences, this dissertation provides an integrated resource to foster positive intergroup relations among adolescents. Moreover, this dissertation lays the groundwork for further investigation into the neural underpinnings of interpersonal distance preferences, considering variations in individuals' levels of social identification and cultural backgrounds. By elucidating the neural correlates of IPD preferences, researchers may uncover novel insights into the intricate cognitive and emotional mechanisms driving social interactions, thereby

guiding the development of targeted interventions aimed at fostering social cohesion.

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