Visualization of Intergroup Relations Research: A Bibliometric Analysis Based on CiteSpace

Shujing Yao[1,2], Azlina Mohd Khir[1]*, Aini Azeqa Ma'rof[1] and Wan Munira Wan Jaafar[1]

[1]*Department of Social and Development Sciences, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia*
[2]*Wulingshan K-12 Educational Research Center, Huaihua University, Huaihua, Hunan Province 418008, China*

ABSTRACT

This study conducted a bibliometric analysis of intergroup relations literature using CiteSpace 6.3.R1 to examine 2,774 articles from the Web of Science Core Collection (2014–2024). Bibliometric methods like keyword co-occurrence, co-citation, and cluster analysis were used to identify trends, hotspots, and emerging themes. The findings reveal a general trend of increasing publication volume, with the United States, the United Kingdom, and the Netherlands identified as the most active contributors. Key research topics include "prejudice," "intergroup contact," and "identity," while emerging themes such as "racial attitudes," "group threat," "social change," and "adolescence" indicate the dynamic evolution of the field. This study highlights the dual characteristics of foundational and applied research in intergroup relations, emphasizing its interdisciplinary potential and practical relevance. By mapping the knowledge structure of the field, the findings provide valuable insights for scholars and policymakers to address pressing societal challenges, such as reducing prejudice, fostering social inclusion, and mitigating intergroup conflicts. Additionally, this study underscores the importance of interdisciplinary approaches and cross-sectoral collaboration in advancing intergroup relations research, offering a roadmap for its future development.

Keywords: Bibliometric analysis, CiteSpace, intergroup relations, knowledge graph visualization

INTRODUCTION

The domain of intergroup relations has been a fundamental area of inquiry within various disciplines, notably social psychology, political psychology, and organizational behavior. Grounded in the seminal work of Turner et al. (1987), social psychologists

have theorized that individuals acquire a unique social identity by distinguishing between 'us' (the ingroup) and 'them' (the outgroup), which informs the interactions with outgroup members and diverges from those guided by personal identity (Turner et al., 1979). These self-categorization and social identification mechanisms constitute the framework of modern intergroup relations research, which extends beyond the confines of intrapersonal and interpersonal psychological constructs to a broader, group-level psychological elucidation of individual behavior. Current research in the social psychology of intergroup relations is profoundly shaped by foundational theories such as the contact hypothesis (Allport, 1954), realistic conflict theory (Campbell, 1965), and the social identity approach (Turner et al., 1979; Turner & Oakes, 1986). Through amalgamating and advancing these theoretical perspectives, empirical investigations strive to decode the psychological undercurrents that inform intergroup attitudes and behaviors. Contemporary research has progressively forged connections with practical interventions aimed at curtailing gender, racial, and religious prejudices, tackling societal inequities, and quelling violent intergroup conflicts (Halperin & Schori-Eyal, 2020; Kteily & Mcclanahan, 2020; Zezelj et al., 2019), indicating the field's significant strides toward social amelioration.

The exploration of intergroup relations is vital for addressing tangible societal challenges. Detrimental intergroup dynamics frequently correlate with grave social issues, including inequality, discrimination, and social exclusion, as well as pervasive animosity, conflict, and even extreme violence among diverse social groups and nation-states (Abrams & Killen, 2014; Greenwald & Pettigrew, 2014; Mäs & Dijkstra, 2014; Sirin et al., 2017). Western societies, in particular, have been historically afflicted by such intergroup-related adversities. Consequently, an in-depth comprehension of intergroup relations research is instrumental in illuminating the mechanisms underlying prevalent group-based conflicts and proffering strategic insights into ameliorating intergroup dynamics, thus mitigating related social dilemmas. Based on the theoretical foundation of social psychology, research on intergroup relations has exhibited a multidisciplinary trend in recent years, contributing empirical findings to various fields such as immigration and religion studies in sociology (Matera et al., 2020; Sarigil, 2018), ethnic conflict and international relations research in political science (Chayinska et al., 2017; Zeitzoff, 2018), organizational and business relationship studies in management (Arikan et al., 2020; Roberson, 2019), as well as inequality and social intervention research in social policy (Edmiston, 2018; Vezzali et al., 2019). These interdisciplinary endeavors have yielded a wealth of empirical research findings. A thorough synthesis and analytical summary of these research outputs enables scholars to assimilate the extant research landscape comprehensively and extrapolate

the trajectory of its progression, pinpoint lacunae within extant inquiries, and articulate prospective research vectors. Such scholarly endeavors are pivotal in fusing interdisciplinary paradigms and in crafting an all-encompassing theoretical edifice for intergroup relations, which, in turn, facilitates the formulation of informed policy interventions targeting societal quandaries such as intergroup prejudice, systemic discrimination, and strife.

Since the late twentieth century, studies on intergroup relations have largely concentrated on the interplay between specific variables without capturing the full scope of the field. This study adopts a bibliometric approach to analyze the corpus of foreign-language literature collated in the Web of Science Core Collection, aiming to present a comprehensive portrait of intergroup relations research. Bibliometric analysis applies mathematical and statistical methodologies to characterize the quantitative evolution, distribution, and structural patterns of scholarly documents (Guler et al., 2016). CiteSpace, a prominent visualization tool, is employed to manifest the outcomes of bibliometric studies via knowledge maps, facilitating a coherent understanding of complex data (Li & Chen, 2016). The present research elucidates several pivotal inquiries: (1) What are the trends in publication and citation frequencies in intergroup relations literature over the past decade? (2) What are the predominant research trajectories within the domain of intergroup relations? (3) Which pivotal publications serve as nodal points

in the intergroup relations literature? (4) What emergent themes at the cutting edge of intergroup relations research exhibit potent growth trajectories? Addressing these questions, this paper aids readers in grasping a more vivid depiction of the current research milieu in the domain of intergroup relations. The main objectives of this study are to systematically review and summarize the existing body of research in intergroup relations, thereby providing a comprehensive understanding of the current research landscape. This study aims to reveal the key research areas, trace the development and evolution of intergroup relations research, and identify emerging trends. Furthermore, it seeks to summarize and predict the overall trajectory of the field, uncover research gaps, and propose future research directions. By doing so, the study hopes to offer new perspectives and insights for advancing intergroup relations research, contributing to the further development of this field.

However, this study faces several challenges and limitations. First, the analysis is based solely on literature retrieved from the Web of Science Core Collection, which, while comprehensive, may exclude relevant studies from non-indexed journals or in languages other than English, potentially limiting the generalizability of the findings. Additionally, the rapidly evolving nature of intergroup relations research, particularly in response to global sociopolitical events, may mean that new trends emerging after the study's cutoff period (early 2024) are not captured.

MATERIALS AND METHODS

Data Source

Data for this study were sourced from the Web of Science Core Collection. The Web of Science Core Collection is a widely recognized and authoritative academic database that covers multiple disciplines, ensuring the academic rigor and reliability of the data. The primary reasons for selecting this database are its broad coverage and standardized data, which help ensure the reliability and reproducibility of the study's findings. Additionally, Web of Science provides detailed citation indexing, which facilitates bibliometric analysis and knowledge mapping using CiteSpace, allowing us to reveal trends and research frontiers in the field. Based on the comparison of the literature obtained through different search strategies, including the use of varied keywords, a database selection was made to ensure comprehensive data collection. The search term was determined to be TS = ("intergroup relation" OR "intergroup relations"). This set of search terms covers both the singular and plural forms of the term "intergroup relation," accurately reflecting the research outcomes in the field of intergroup relations and ensuring the most relevant data for the study topic. The literature search spanned from 2014 to 2024, with the retrieval and download date being April 7, 2024; hence, data for 2024 only includes documents published before April. The focus was exclusively on peer-reviewed journal articles, selecting only those classified as "article." This search yielded 2,774 relevant documents.

No duplicates were found upon importing the data into CiteSpace for deduplication, confirming all 2,774 documents as unique and pertinent to the study. These documents were then exported and saved in TXT format to serve as the data sample for this analysis.

Research Method

Research Tools

The bibliometric analysis tool employed in this study is CiteSpace 6.3.R1 and the built-in analysis features of Web of Science. CiteSpace, a software developed in Java, facilitates the visualization of knowledge maps for specific domains, enabling the detection of evolving research trends (Y. Chen et al., 2015). This tool is particularly useful for scholars aiming to comprehend and keep abreast of the dynamics within their field. The visual maps generated by CiteSpace primarily consist of nodes and links: nodes represent elements such as authors, institutions, and countries, while the links between two nodes indicate collaborations, co-occurrences, or co-citations. This study utilizes CiteSpace to perform a bibliometric analysis of the literature data downloaded, supplemented by analyses from the Web of Science, to derive the research findings. All tables included in the manuscript were created using Microsoft Word.

Parameter Configuration and Interface Adjustment

In the visualization analysis of authors, keywords, and cited references, the time slicing was set to one year, selecting the

top 30 for analysis in each slice. The clustering within the document utilized noun-based terminology from keywords and the Latent Semantic Indexing (LSI) algorithm, with network pruning executed via Pathfinder and pruning the merged network. The visualization settings were adjusted to "Cluster view-static, show merged network" for display. Initially, the bibliometric approach was employed to present the annual publication volume and citation frequency of intergroup relations research over the past decade, analyzing the trends over this period to gauge the development and research trajectory of the intergroup relations field in recent years. Subsequently, in the scientific knowledge map analysis, CiteSpace visualization tools were used to conduct frequency analysis and co-occurrence network visualization for two types of nodes: cited references (for clustering analysis of research directions and analysis of key nodal documents) and keywords (for analysis of the evolution of research hotspots). This methodological framework provides a comprehensive overview, enabling a deep understanding of the dynamics and progress in the field of intergroup relations.

RESULTS

Publication Count and Citation Frequency Analysis

The annual volume of published papers is often deemed a critical metric for assessing the evolution and current state of research fields. This study analyzes 2,774 intergroup relations articles to uncover publication trends and citation dynamics from 2014 to 2024, thereby elucidating the growth and maturation of literature in this domain. Figure 1 depicts the citation
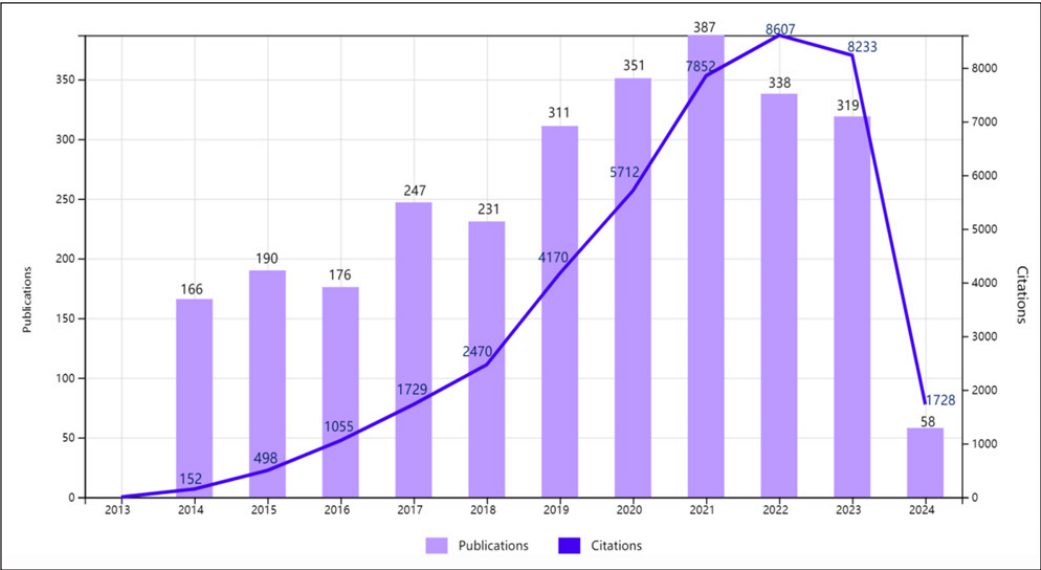

Figure 1. Annual statistics of publication volume and citation frequency

count representing the total annual citations accrued by these works. Over the examined decade, the number of publications initially rose, then modestly declined, while citations increased steadily before eventually tapering off, owing in part to incomplete data for 2024, which only extends through April, necessitating a tentative analysis for that year.

The publication trajectory can be divided into four distinct phases: a period of gradual growth (2014–2015), followed by steady growth (2016–2017), a sharp increase (2018–2021), and finally, a phase of stabilization and decline (2022-2024). Citations during this period increased more than fiftyfold, with the 2,774 documents collectively cited 42,206 times, particularly during 2022. This significant rise in citations, especially post-COVID-19, highlights the growing academic interest in intergroup relations as researchers seek to address the implications of global pandemics on social dynamics.

Main Country of Study

From 2014 to 2024, the top five countries contributing to intergroup relations research were the United States, the United Kingdom, the Netherlands, Germany, and Canada, all of which are immigrant-rich nations. These countries have a long-standing governmental focus on intergroup relations between immigrants and local populations. Notably, the United States led the field with 1,077 publications, accounting for approximately 38.81% of the total, as shown in Figure 2.

Co-author Analysis

Using the co-authorship network graph to present the collaborative relationships among researchers in the field of intergroup relations (see Figure 3), the chosen time
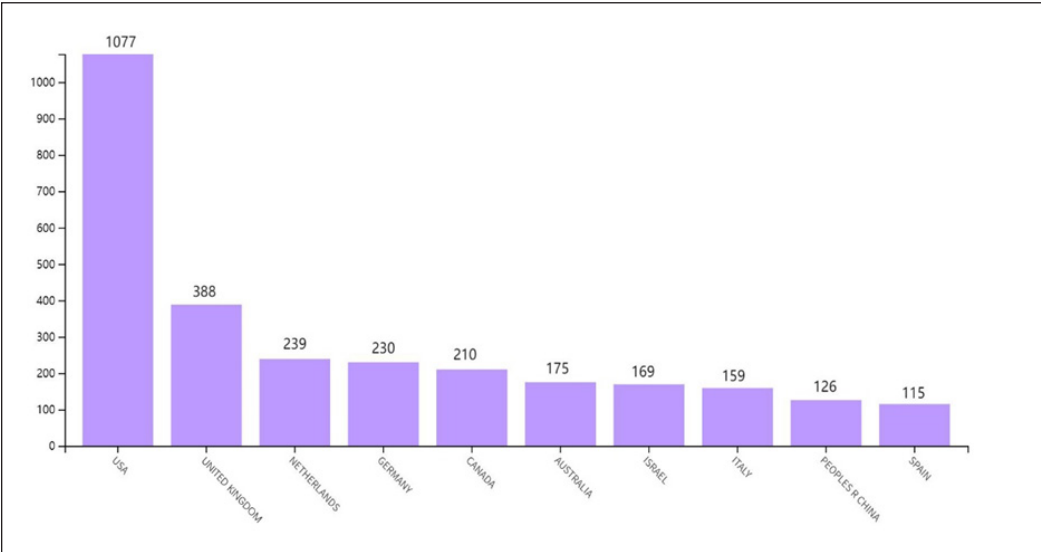

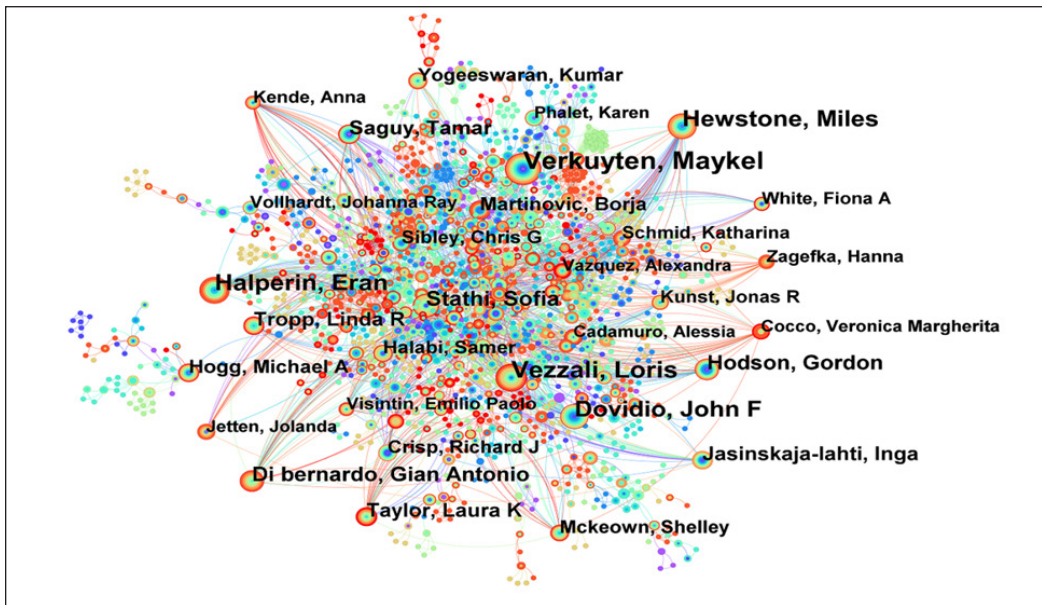*Figure 2.* Distribution of literature by country

Figure 3. Co-authorship network map

span covers the period from 2014 to 2024, with annual intervals serving as the time slices. The node type selected is "author," and the "Selection Criteria" section is set to "Thresholds," which facilitates the creation of an intergroup relations co-author network map. In this visualization, each node represents an author; the size of the node corresponds to the number of publications by the author, with larger nodes indicating higher publication counts. The thickness of the connections between nodes is positively correlated with the strength of the collaborations among authors. The distribution of co-authors in the field of intergroup relations exhibits a pattern of "central concentration with partial dispersion." The core collaborative relationships are relatively stable, yet distinct groups and individual researchers conduct their studies independently. The most

prominent node in the map centers around the research team led by Maykel Verkuyten (Figure 3), which has published 51 papers. Maykel Verkuyten is an emeritus professor in Interdisciplinary Social Science at Utrecht University and the former academic director of the European Research Centre on Migration and Ethnic Relations. His main research interest is in ethnic identity and interethnic relations, and he focuses on the nature of ethnic, religious and national identities and their interrelationships.

Major Clusters of Research Directions

This study utilized CiteSpace to conduct a co-citation analysis of sampled literature over the period from 2014 to 2024, with annual time slices. The node type was set to "Reference," the threshold criteria selected the top 30% of the most cited references per slice, up to a maximum of
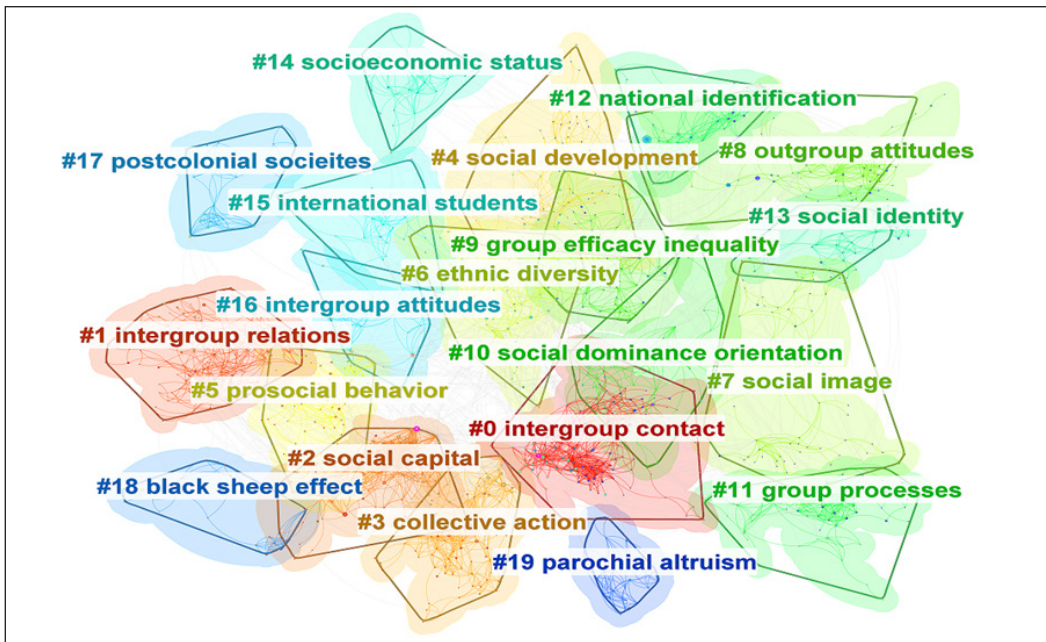
Figure 4. Co-citation network cluster map

100 references. To simplify the network and highlight its main features, we employed the "Pathfinder" algorithm and "Pruning the Merged Network" strategy, while other parameters were kept at their default settings. The resulting co-citation network map for intergroup relations research is depicted in Figure 4.

The final co-citation network cluster map generated 19 clusters, with a Modularity Q value of 0.7751 (>0.3), indicating a very clear cluster structure; the Mean Silhouette score was 0.8831 (>0.7), confirming the clusters are efficiently and convincingly delineated (C. Chen et al., 2010). Due to space limitations, this paper only summarizes the top seven major clusters, each containing more than 50 nodes, which represent the principal research directions in the field of intergroup relations from 2014 to 2024. Each node within these clusters had

a Silhouette score exceeding 0.8, reflecting excellent internal homogeneity (C. Chen et al., 2010). Detailed information on the number of nodes, Silhouette scores, and labels for these seven clusters is provided in Table 1.

The seven clusters identified are "intergroup contact," "intergroup relations," "social capital," "collective action," "social development," "prosocial behavior," and "ethnic diversity." "Intergroup contact" is a classic perspective within intergroup relations, based on Allport's (1954) contact hypothesis, focusing on how interactions between different groups can reduce prejudice and enhance the quality of intergroup relations. The theory of social capital examines how networks of social relationships, trust, and reciprocity can serve as valuable resources in social interactions (Bourdieu, 1986). Collective action theory

Table 1
Main clusters of co-cited references

Cluster ID	Size	Silhouette	Cluster Labels
0	132	0.843	intergroup contact
1	123	0.841	intergroup relations
2	123	0.812	social capital
3	82	0.848	collective action
4	75	0.861	social development
5	72	0.889	prosocial behavior
6	71	0.835	ethnic diversity

explores coordinated efforts by group members to achieve common goals, often associated with social movements, political protests, or community-driven collective endeavors (Olson, 1965). This cluster may investigate how such actions are formed and how they transform intergroup relations and societal structures. Social development encompasses efforts to enhance societal welfare, reduce inequality, and support social change. Prosocial behavior examines how individuals and groups engage in actions beneficial to others or society at large, including cooperation, helping, and other forms of positive social interaction, with studies likely focusing on encouraging such behaviors to strengthen intergroup harmony. Ethnic diversity primarily connects to multiculturalism and inclusive policy theories, focusing on inter-ethnic communications and interactions and managing diversity to foster societal well-being and cohesion.

Key Node Reference Analysis

We identified six documents with centrality scores above 0.1 in the co-citation network map. These nodes also exhibited relatively high citation frequencies, ranging from a minimum of 13 to 39 citations. In CiteSpace, such highly central nodes are defined as pivotal points (C. Chen, 2004), which control the transition of the literature domain from one period to another. In this study, these key nodes functioned as "bridges"— they served as connectors among references with varying research themes, forming co-citation links with multiple articles. They also acted as bridges in the field of intergroup relations, encapsulating key thematic trends of a particular period and guiding the development of research foci across different periods. This analysis underscores their role in shaping the trajectory of intergroup relations research, reflecting pivotal themes that have garnered substantial scholarly attention.

The six key node references listed in Table 2 can broadly be categorized into two types based on their research content: theoretical extensions and studies addressing specific social issues.

First, theoretical extensions are where five of the six key node references presented in Table 2 are devoted to extending existing theories. One approach to theoretical expansion involves identifying applicable

Table 2

List of key nodes with centrality above 0.1

No.	First Author	Publish Year	Centrality	Citation Count	Title
1	McKeown S	2017	0.2	22	The "contact hypothesis": Critical reflections and future directions
2	Reimer NK	2017	0.16	39	Intergroup Contact and Social Change: Implications of Negative and Positive Contact for Collective Action in Advantaged and Disadvantaged Groups
3	Pettigrew TF	2017	0.16	16	The Single Factor Fallacy: Implications of Missing Critical Variables from an Analysis of Intergroup Contact Theory
4	Christ O	2014	0.12	28	Contextual effect of positive intergroup contact on outgroup prejudice
5	Major B	2018	0.1	20	The threat of increasing diversity: Why many White Americans supported Trump in the 2016 presidential election
6	Dixon J	2020	0.1	13	Parallel lives: Intergroup contact, threat, and the segregation of everyday activity spaces

scenarios for theories. For instance, Reimer et al. (2017) explore the impacts of the relationships among intergroup contact, collective action, and social change. Christ et al. (2014) assessed the evidence for a contextual effect of positive intergroup contact, demonstrating that the impact of intergroup contact across different social contexts (the between-level effect) on outgroup prejudice exceeds that of individual-level contact within those contexts (the within-level effect).

Another strategy for expanding theoretical frameworks includes introducing new predictive variables or methodologies. Pettigrew and Hewstone (2017) discussed the implications of omitting critical variables from analyses, such as segregation and the effects of negative and positive contact, extended contact, and scenarios where the outgroup is in the majority. Dixon et al. (2020) adopted a complementary approach by considering segregation as a result of individuals' movements over time within everyday life spaces.

Second, studies addressing specific social issues. Major et al. (2018) found the importance of changing racial demographics and White ethnic identification in voter preferences and how social psychological theory can illuminate voter preferences.

The analysis reveals that the content of these key node documents largely comprises foundational theories, as well as extensions and integrations of these theories. This underscores their role as "bridges" connecting different periods and research themes, which are pivotal given their high centrality within the network. Additionally, there has been a burgeoning

interest in studies that address specific social issues. Beyond laboratory settings, researchers have shifted their focus to the intergroup relations among specific social groups, such as immigrants, gender groups, and stigmatized communities. These key documents have laid a solid theoretical and methodological foundation for the growing body of intergroup relations literature, particularly for studies validating foundational theories within specific policy contexts. The themes explored in these studies have gradually become focal points in the field of intergroup relations, providing direction for subsequent research. This strategic foundation enriches our understanding and guides future inquiries into complex social dynamics, underscoring the utility of foundational theories in addressing real-world issues.

Research Hotspots and Emerging Frontiers Analysis

Analysis of Research Hotspots and Evolution

Research hotspots refer to themes that have garnered significant attention from a closely related and substantial group of documents over a specific period. Analyzing these hotspots is beneficial for researchers within the field to grasp which themes have been heavily focused on during certain times and to understand how different research perspectives have evolved and changed. In this study, we identify research hotspots in the field of intergroup relations by analyzing the frequency of keywords. These keywords often serve as concise representations of

research themes, encapsulating the essence of literature. In CiteSpace, the settings remain unchanged, with "Keyword" selected as the node type. We opt for the "Time Zone" view to observe the temporal evolution of research hotspots, resulting in the keyword co-occurrence network time zone map displayed in Figure 5.

Figure 5 reveals that the keywords with the highest frequency of occurrence (indicated by larger node sizes) are predominantly clustered around 2014; meanwhile, the emergence of new keywords significantly decreased starting in 2019. Predominantly, keywords that appeared more than 50 times first emerged in 2014, and the keyword nodes from 2014 are densely connected with those from subsequent years. This pattern suggests that the research themes explored in 2014 and earlier were likely foundational and broad, serving as a groundwork for subsequent studies. Subsequent research themes and perspectives are extensively linked to 2014, demonstrating the accumulation and evolution of research topics and academic discourse over time. From this analysis, it is evident that core themes such as "prejudice," "intergroup contact," and "identity" have maintained a relatively high co-occurrence frequency and research interest over the years. These enduring topics revolve around key concepts and theoretical constructs within the field of intergroup relations, providing a framework for exploring social identity, social dynamics, and the processes of prejudice formation and reduction.
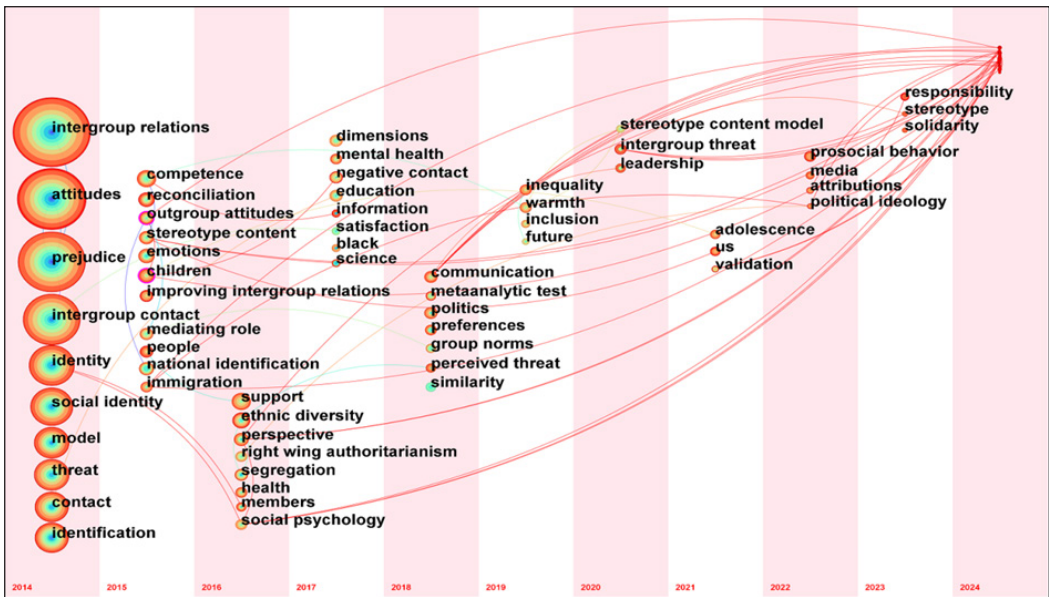
Figure 5. Time zone map of keyword co-occurrence network

Table 3

High-frequency keywords that first emerged in each respective year

Time	High-frequency keywords (Frequency)		
2014	intergroup relations (903)	attitudes (671)	prejudice (657)
	intergroup contact (471)	identity (317)	social identity (288)
2015	Competence (62)	reconciliation (60)	stereotype content (56)
	outgroup attitudes (56)	emotions (55)	children (52)
2016	Support (69)	ethnic diversity (49)	perspective (45)
	right wing authoritarianism (37)	segregation (31)	health (30)
2017	Dimensions (35)	mental health (27)	negative contact (25)
	Education (25)	information (14)	satisfaction (14)
2018	communication (43)	politics (27)	metaanalytic test (26)
	preferences (24)	group norms (19)	perceived threat (18)
2019	inequality (31)	warmth (29)	inclusion (14)
	future (9)	emotional needs (5)	israeli (5)
2020	intergroup threat (16)	leadership (14)	stereotype content model (10)
	racial bias (8)	networks (6)	engagement (5)
2021	us (18)	adolescence (16)	validation (9)
	acculturation preferences (8)	indirect contact (6)	muslims (6)
2022	prosocial behavior (23)	media (10)	attributions (8)
	political ideology (7)	care (5)	roles (5)
2023	responsibility (9)	stereotype (6)	solidarity (5)
	attribution (5)	procedural justice (5)	association test (5)
2024	peace (3)	news (3)	parochial altruism (3)
	self efficacy (3)	crisis (2)	emotion (2)

Table 3 consolidates the high-frequency keywords that first emerged each year in the intergroup relations literature from 2014 to 2024, allowing for a chronological analysis of research hotspots in studying intergroup relations across different stages. From 2014 to 2016, an intense academic interest in foundational aspects of intergroup dynamics is evident, with terms like "intergroup relations," "intergroup contact," and "competence" indicating a robust engagement with theories of group interaction and social identity. During this initial period, the research emphasis on basic cognitive and affective processes within group contexts is palpable.

In the subsequent interval from 2017 to 2019, a discernible shift toward applied and structural aspects of intergroup relations emerges. This is marked by an increase in the prevalence of terms such as "education," "communication," and "inequality." The transitional nature of these years reflects a burgeoning scholarly dialogue around the social determinants of intergroup attitudes and the role of institutional structures in mediating these relations.

The year 2020 signifies a critical juncture, underscored by the prominence of "intergroup threat" and "racial bias," likely mirroring the global sociopolitical climate and heightened race-based tensions. Entering 2021 and 2022, the keywords "us," "media," and "prosocial behavior" signal a broader, more integrative phase of research. The presence of "media" underscores the exploration of the influence of mass and social media on group processes. At the same time, "prosocial behavior" indicates a turn toward positive social actions and responsibilities within and between groups.

The final phase, comprising 2023 and 2024, is characterized by forward-looking and resolution-oriented terms such as "peace" and "self-efficacy." These suggest an anticipatory focus on conflict resolution and individual agency within group dynamics and societal change.

The chronological clustering of these keywords and the scholarly narratives they represent echo the progression of societal concerns from foundational intergroup understandings to a more nuanced interrogation of structural influences and, eventually, to proactive resolutions and individual empowerment within group settings. This evolution reflects the adaptive nature of academic inquiry as it responds to the shifting socio-cultural and political landscapes.

Analysis of Emerging Research Fronts

In bibliometrics, "burst terms" refer to a keyword that suddenly increases in frequency during a specific period, with higher burst strengths indicating cutting-edge research topics. Utilizing CiteSpace software, the top 25 keywords with the strongest citation bursts were identified. Analysis of these burst terms revealed key concepts such as "racial attitudes," "group threat," "intergroup contact theory," "social change," "group norms," "values," "inclusion," and "adolescence" as the frontiers of relations research (Table 4). These results suggest that the focal themes

Table 4
Top 25 keywords with the strongest citation bursts

Keywords	Year	Strength	Begin	End	2014 - 2024
racial attitudes	2014	6.15	2014	2016	
united states	2014	5.99	2014	2019	
group threat	2014	4.84	2014	2016	
motivation	2014	4.06	2014	2019	
hypothesis	2014	3.99	2014	2016	
ethnic identity	2014	3.61	2014	2017	
students	2015	4.95	2015	2018	
intergroup contact theory	2015	4.14	2015	2017	
competition	2015	3.65	2015	2018	
guilt	2015	3.49	2015	2018	
determinants	2016	5.81	2016	2018	
social change	2016	5.3	2016	2019	
perspectives	2016	3.57	2016	2018	
satisfaction	2017	4.56	2017	2020	
values	2014	4.44	2017	2020	
reduce prejudice	2014	6.23	2018	2020	
group norms	2018	4.42	2018	2020	
meta-analytic test	2018	3.86	2018	2020	
dimensions	2017	4.11	2019	2022	
warmth	2019	3.96	2019	2022	
inclusion	2019	3.58	2019	2022	
future	2019	3.49	2019	2021	
adolescence	2021	5.14	2021	2024	
us	2021	4.87	2021	2024	
people	2015	4.56	2021	2024	

in intergroup relations research have transitioned from specific analyses of racial and ethnic issues to broader examinations of underlying determinants in social theories and individual behaviors. The dynamic evolution of these themes reflects an adaptive response to ongoing societal issues.

Additionally, Table 4 provides insights into the lifecycle and intensity of these burst terms. Typically, the lifecycle of a burst term spans 2–3 years before it fades or is replaced by other keywords. Most terms in Table 4 have a lifecycle of 3–4 years, while two terms that burst in 2014, "United States" and "motivation," persisted for 6 years, indicating the sustained relevance of the United States as a research setting or case study. This prolonged focus may relate to sociopolitical events in the U.S. during this period, such as racial tensions, immigration

policy debates, and other societal shifts, all forming crucial elements of intergroup relations research. The enduring presence of "motivation" as a keyword underscores its foundational role in understanding individual and group behaviors. This long-term emphasis likely reflects scholars' interest in exploring various types of motivation—personal, group, and how they drive changes in group behaviors and attitudes.

DISCUSSION

This paper provides a statistical and analytical overview of the literature on intergroup relations from 2014 to 2024, focusing on publication and citation volumes, main research directions, key nodal documents, and the evolution of research hotspots. The findings are as follows.

Firstly, the overall landscape of publication and citation in the field of intergroup relations has been marked by a consistent growth in attention. Although the volume of publications has experienced both increases and periods of stabilization over the last decade, the trend is generally upward. Notably, the citation volume has surged more than fiftyfold in ten years, indicating an escalating scholarly interest in this research area.

Secondly, a co-citation analysis reveals that intergroup relations research has established a comprehensive foundational theory and research framework. Cluster analysis identifies several core research directions within the field, including "intergroup contact," "social capital,"

"collective action," "social development," "prosocial behavior," and "ethnic diversity." There is considerable overlap among these areas, with most nodal documents further developing and integrating existing research directions. Further analysis of key nodal documents shows that these primarily involve foundational theories and their expansion and integration. These pivotal nodal documents act as "bridges," facilitating the transition from one phase of theoretical development to another in the trajectory of intergroup relations theory.

Finally, analysis of the keyword co-occurrence network temporal map and the high-frequency keywords across different time zones reveals that the main research Hotspots are "prejudice," "intergroup contact," and "identity." These topics evolve from theoretical foundations to practical issues and basic models to interdisciplinary and cross-domain explorations. Increasingly, these research foci reflect real-life human issues and pressing social problems, with interdisciplinary efforts enhancing the applicability of intergroup relations theories in diverse contexts. This trend exemplifies the shift in contemporary social psychology towards an interventionist approach (Halperin & Schori-Eyal, 2020). Analysis of burst terms shows that the research frontiers in intergroup relations are influenced by broad social trends, policy discussions, and theoretical advancements, focusing on "racial attitudes," "group threat," "intergroup contact theory," "social change," "group norms," "values," "inclusion," and "adolescence." These burst terms reflect

the wide-ranging impacts on the field of intergroup relations and underscore the driving force of dynamic societal changes on scholarly inquiry. They also highlight the critical role of social science in fostering a more harmonious and just society. In an era of rapid development fraught with numerous societal issues, such as racial and immigration biases fueled by globalization, social inequalities driven by economic growth, and regional tensions and conflicts sparked by hegemonism and religious expansion, there is an increasing demand for effective interventions. This requires researchers in intergroup relations not only to reveal social phenomena and aid in understanding psychological processes within intergroup relations but also to develop evidence-based interventions and provide well-founded recommendations for addressing social problems.

The findings of this study are consistent with several key theories in the field of intergroup relations. In particular, the results support Allport's Contact Hypothesis (1954), which posits that increased intergroup contact can effectively reduce prejudice. This study's emphasis on "intergroup contact" as a major research focus reinforces the continued relevance of this theory in contemporary scholarship. Additionally, the study underscores the significance of Tajfel's Social Identity Theory (1979), as themes of "identity" and "group norms" remain central to understanding intergroup dynamics.

Moreover, this study identifies emerging areas that extend beyond traditional theoretical frameworks. While classic theories primarily focus on direct interpersonal contact, contemporary social issues, such as globalization, immigration, and growing social inequalities, are giving rise to new forms of intergroup interaction. These developments suggest that existing theoretical models may need to be revised to better account for the complexities of modern social dynamics, including the impact of broader societal forces on intergroup behaviors and attitudes.

By comparing the results of this study with established theories, it is evident that while traditional frameworks like the Contact Hypothesis and Social Identity Theory remain valuable, they may require expansion to incorporate the influence of global social trends on intergroup relations. In doing so, this study offers a deeper understanding of how contemporary societal changes shape group interactions and presents promising avenues for future theoretical development.

CONCLUSION

The present study utilizes CiteSpace software to conduct a bibliometric analysis of 2,774 articles on intergroup relations published between 2014 and 2024. This analysis provided key insights into the field's development, major research directions, and emerging trends. Based on the results obtained, the following conclusions can be drawn.

Publication and citation trends reflect growing scholarly attention. The annual publication volume demonstrates an upward

trend, with a significant increase in citation frequency over the decade. This growth underscores the escalating importance of intergroup relations research in response to global social and political challenges, such as immigration, racial inequalities, and social polarization. The United States, the United Kingdom, and the Netherlands remain dominant contributors, reflecting their active academic and policy-related engagement in these issues.

Core research themes indicate foundational and evolving focuses. The results identified "intergroup contact," "social capital," "collective action," and "prosocial behavior" as foundational areas that continue to shape the field. These themes highlight the field's emphasis on understanding how social dynamics can foster or hinder intergroup harmony. Emerging areas such as "ethnic diversity" and "social development" suggest a growing interdisciplinary interest in addressing real-world societal challenges.

Research hotspots reveal dynamic societal relevance. High-frequency keywords such as "prejudice," "identity," and "intergroup contact" remain central to the literature, reflecting sustained interest in foundational theories like the Contact Hypothesis and Social Identity Theory. Additionally, emerging hotspots such as "racial attitudes," "group threat," and "social change" reflect a shift toward addressing contemporary issues, particularly those related to globalization, digital transformation, and evolving societal values.

The findings emphasize the dual nature of intergroup relations research, balancing theoretical exploration with practical applications. This duality is crucial for addressing societal challenges such as reducing prejudice, fostering inclusion, and mitigating conflicts. Future research should build on these findings by integrating advanced methodologies, leveraging digital platforms, and exploring intersectional perspectives to address the complexities of modern intergroup dynamics.

In conclusion, this study provides a comprehensive overview of intergroup relations research, emphasizing its interdisciplinary potential and practical relevance. Identifying key research areas and emerging frontiers offers a roadmap for advancing theoretical understanding and informing evidence-based policies to promote societal cohesion and equity.

Implications of the Study

The findings of this study offer several significant implications for both theoretical advancements and practical applications in the field of intergroup relations. Firstly, the consistent increase in publication volume and citation frequency underscores the growing academic interest and the recognized importance of intergroup relations research. This trend highlights the necessity for continued exploration and refinement of theories related to intergroup dynamics, including social identity theory, contact hypothesis, and realistic conflict theory.

Secondly, the identification of core research clusters such as "intergroup contact," "social capital," "collective action," "social development," "prosocial behavior," and "ethnic diversity" suggests a multifaceted approach to understanding intergroup relations. These clusters emphasize the need for interdisciplinary research integrating insights from psychology, sociology, political science, and other fields to develop a comprehensive understanding of intergroup dynamics.

Thirdly, the evolving research hotspots, particularly the shift towards applied and structural aspects of intergroup relations, indicate a growing recognition of the practical implications of this research. This shift underscores the importance of developing policies and interventions that address the social determinants of intergroup attitudes and behaviors, such as education, communication, and inequality. Policymakers and practitioners can leverage these insights to design and implement strategies to reduce prejudice, promote social inclusion, and enhance intergroup harmony.

Recommendations for Future Research

Reflecting on the past decade, research in intergroup relations has made notable strides, theoretically and practically. However, looking forward, there remains substantial potential and ample opportunities for further advancement in this field. We posit that future investigations into intergroup relations could deepen along at least three dimensions.

Firstly, there lies promise in the integration of intergroup relations research with social network analysis. Notably, the term "network" only surfaced as a prominent keyword in intergroup relations literature as recently as 2020. Despite scholars' efforts to elucidate individual variances and situational determinants shaping intergroup relations, a critical gap persists regarding the influence of social network dynamics among ingroup members, be it intergroup or intragroup, on their attitudes and behaviors. Granovetter (1985) underscored the necessity of considering individuals' embeddedness within social structures when forecasting social behaviors, particularly within group milieus. Exploring such network embeddedness could thus represent a significant progression of the contact hypothesis. The digital era has redefined the landscape of intergroup communication, with social media platforms emerging as significant arenas for group interactions. The dual-edged sword of these platforms warrants careful scholarly attention—on the one hand, they propagate misinformation and create polarizing echo chambers; on the other, they hold potential as conduits for empathy and cross-group understanding (Bail et al., 2018). Future studies should dissect these digital phenomena to unpack their implications for intergroup processes.

Secondly, in the burgeoning field of intergroup relations, the complexities of our global society necessitate a nuanced exploration of diverse group dynamics. As the societal fabric becomes increasingly variegated, research must pivot to understand

the interplay of policies, social norms, and personal convictions in shaping intergroup attitudes and behaviors within multicultural contexts (Verkuyten, 2018). Probing the influence of such factors offers a roadmap for navigating the challenges and seizing the opportunities presented by pluralism. Additionally, the lens of intersectionality is indispensable in dissecting the layered experiences of individuals situated at the nexus of multiple group memberships. This framework is particularly salient in parsing the compounded experiences of advantage or marginalization and how these intersections potentiate unique intergroup dynamics (Crenshaw, 2017). Shields (2014) emphasizes the critical need to integrate intersectional analyses in understanding power dynamics within intergroup relations.

Thirdly, the potential of digital platforms as both a challenge and an opportunity for intergroup relations warrants further investigation. Social media has transformed the landscape of intergroup communication, creating polarizing echo chambers and opportunities for cross-group understanding. Future research should examine the dual-edged nature of digital platforms, exploring how they can be harnessed to foster empathy and positive intergroup interactions while mitigating the spread of misinformation and polarization.

An interdisciplinary approach is imperative to advance a comprehensive understanding of these intricate social phenomena. This approach should blend perspectives from sociology, political science, and communication studies, utilizing a suite of methodologies that include longitudinal research, experimental paradigms, and big data analytics. Such a multifaceted strategy will enhance our grasp of intergroup relations, fostering theoretical innovation and practical applications that contribute to reducing conflict and enhancing societal cohesion.

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REFERENCES

Abrams, D., & Killen, M. (2014). Social exclusion of children: Developmental origins of prejudice. *Journal of Social Issues, 70*(1), 1-11. https://doi.org/101111/josi.12043

Allport, G. W. (1954). *The nature of prejudice*. Perseus Books.

Arikan, I., Arikan, A. M., & Shenkar, O. (2020). Nation-dyadic history and cross-border corporate deals: Role of conflict, trade, generational distance, and professional education. *Strategic Management Journal, 41*(3), 422-466. https://doi.org/10.1002/smj.3046

Bail, C. A., Argyle, L. P., Brown, T. W., Bumpus, J. P., Chen, H., Hunzaker, M. B. F., Lee, J., Mann, M., Merhout, F., & Volfovsky, A. (2018). Exposure to opposing views on social media can increase political polarization. *Proceedings of the National Academy of Sciences, 115*(37), 9216-9221. https://doi.org/10.1073/pnas.1804840115

Bourdieu, P. (1986). The forms of capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). Greenwood.

Campbell, D. T. (1965). *Ethnocentric and other altruistic motives*. University of Nebraska Press.

Chayinska, M., Minescu, A., & McGarty, C. (2017). Political solidarity through action (and inaction): How international relations changed intracultural perceptions in Ukraine. *Group Processes & Intergroup Relations, 20*(3), 396-408. https://doi.org/10.1177/1368430216682354

Chen, C. (2004). Searching for intellectual turning points: Progressive knowledge domain visualization. *Proceedings of the National Academy of Sciences, 101*(1), 5303-5310. https://doi.org/10.1073/pnas.0307513100

Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multiple-perspective cocitation analysis. *Journal of the American Society for Information Science and Technology, 61*(7), 1386-1409. https://doi.org/10.1002/asi.21309

Chen, Y., Chen, C., Liu, Z., Hu, Z., & Wang, X. (2015). The methodology function of CiteSpace knowledge mapping. *Studies in Science of Science, 33*(2), 242-253. https://doi.org/10.16192/j.cnki.1003-2053.2015.02.009

Christ, O., Schmid, K., Lolliot, S., Swart, H., Stolle, D., Tausch, N., Al Ramiah, A., Wagner, U., Vertovec, S., & Hewstone, M. (2014). Contextual effect of positive intergroup contact on outgroup prejudice. *Proceedings of the National Academy of Sciences, 111*(11), 3996-4000. https://doi.org/10.1073/pnas.1320901111

Crenshaw, K. (2017). *On intersectionality: Essential writings*. The New Press.

Dixon, J., Tredoux, C., Davies, G., Huck, J., Hocking, B., Sturgeon, B., Whyatt, D., Jarman, N., & Bryan, D. (2020). Parallel lives: Intergroup contact, threat, and the segregation of everyday activity spaces. *Journal of Personality and Social Psychology, 118*(3), 457-480. https://doi.org/10.1037/pspi0000191

Edmiston, D. (2018). The poor "sociological imagination"of the rich: Explaining attitudinal divergence towards welfare, inequality, and redistribution. *Social Policy & Administration,* *52*(3-4), 690-709. https://doi.org/10.1111/spol.12366

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology, 91*(3), 481-510. https://doi.org/10.1086/228311

Greenwald, A. G., & Pettigrew, T. F. (2014). With malice toward none and charity for some: Ingroup favoritism enables discrimination. *American Psychologist, 69*(7), 669-684. https://doi.org/10.1037/a0036056

Guler, A. T., Waaijer, C., & Palmblad, M. (2016). Scientific workflows for bibliometrics. *Scientometrics, 107*(2), 385-398. https://doi.org/10/1007/s11192-016-1885-6

Halperin, E., & Schori-Eyal, N. (2020). Towards a new framework of personalized psychological interventions to improve intergroup relations and promote peace. *Social and Personality Psychology Compass, 14*(5), 255-270. https://doi.org/10.1111/spc3.12527

Kteily, N. S., & McClanahan, K. J. (2020). Incorporating insights about intergroup power and dominance to help increase harmony and equality between groups in conflict. *Current Opinion in Psychology, 33*, 80-85. https://doi.org/10.1016/j.copsyc.2019.06.030

Li, J., & Chen, C. (2016). *Citespace: Scientific text mining and visualization*. Capital University of Economics and Business Press.

Major, B., Blodorn, A., & Major Blascovich, G. (2018). The threat of increasing diversity: Why many White Americans support Trump in the 2016 presidential election. *Group Processes & Intergroup Relations, 21*(6), 931-940. https://doi.org/10.1177/1368430216677304

Mäs, M., & Dijkstra, J. (2014). Do intergroup conflicts necessarily result from outgroup hate? *PLOS ONE, 9*(6), Article e97848. https://doi.org/10.1371/journal.pone.0097848

Matera, C., Picchiarini, A., Olsson, M., & Brown, R. (2020). Does religion matter? Italians' responses towards Muslim and Christian Arab immigrants as a function of their acculturation preferences. *International Journal of Intercultural Relations, 75*, 1-9. https://doi.org/10.1016/j.ijintrel.2019.12.002

McKeown, S., & Dixon, J. (2017). The "contact hypothesis": Critical reflections and future directions. *Social and Personality Psychology Compass, 11*(1), Article e12295. https://doi.org/10.1111/spc3.12295

Olson, M. (1965). *The logic of collective action*. Harvard University Press.

Pettigrew, T. F., & Hewstone, M. (2017). The single factor fallacy: Implications of missing critical variables from an analysis of intergroup contact theory. *Social Issues and Policy Review, 11*(1), 8-37. https://doi.org/10.1111/sipr.12026

Reimer, N. K., Becker, J. C., Benz, A., Christ, O., Dhont, K., Klocke, U., Neji, S., Rychlowska, M., Schmid, K., & Hewstone, M. (2017). "Intergroup contact and social change: Implications of negative and positive contact for collective action in advantaged and disadvantaged groups": Erratum. *Personality and Social Psychology Bulletin, 43*(6), 901-902. https://doi.org/10.1177/0146167217703392

Roberson, Q. M. (2019). Diversity in the workplace: A review, synthesis, and future research agenda. *Annual Review of Organizational Psychology and Organizational Behavior, 6*, 69-88. https://doi.org/10.1146/annurev-orgpsych-012218-015243

Sarigil, Z. (2018). Ethnic and religious prejudices in the Turkish social landscape. *European Sociological Review, 34*(6), 711-727. https://doi.org/10.1093/esr/jcy036

Shields, S. A. (2014). Gender: An intersectionality perspective. *Sex Roles, 59*(5), 301-311. https://doi.org/10.1007/s11199-008-9501-8

Sirin A., Minayeva T., Yurkovskaya T., Kuznetsov O., Smagin V., Fedotov Yu. Russian Federation (European Part). In H. Joosten, F. Tanneberger, & A. Moen (Eds.), *Mires and peatlands of Europe* (pp. 589-616). Stuttgart.

Turner, J. C., Brown, R. J., & Tajfel, H. (1979). Social comparison and group interest in ingroup favouritism. *European Journal of Social Psychology, 9*(2), 187-204. https://doi.org/10.1002/ejsp.2420090207

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.

Turner, J. C., & Oakes, P. J. (1986). The significance of the social identity concept for social psychology with reference to individualism, interactionism and social influence. *British Journal of Social Psychology, 25*(3), 237-252. https://doi.org/10.1111/j.2044-8309.1986.tb00732.x

Verkuyten, M. (2018). The social psychology of ethnic identity. *European Review of Social Psychology, 29*(1), 62-104. https://doi.org/10.4324/9780203338704

Vezzali, L., Di Bernardo, G. A., Stathi, S., Visintin, E. P., & Hewstone, M. (2019). Using intercultural videos of direct contact to implement vicarious contact: A school-based intervention that improves intergroup attitudes. *Group Processes & Intergroup Relations, 22*(7), 1059-1076. https://doi.org/10.1177/1368430218809885

Zeitzoff, T. (2018). Does social media influence conflict? Evidence from the 2012 Gaza conflict. *Journal of Conflict Resolution, 62*(1), 29-63. https://doi.org/10.1177/0022002716650925

Zezelj, I., Milošević-Đorđević, J., Van Niekerk, J., & Pavlović, Z. (2019). How to address the caveat of avoiding direct contact: Reducing prejudice towards gay and lesbian people in five Balkan countries. *The Journal of Social Psychology, 160*(2), 190-203. https://doi.org/10.1080/00224545.2019.1611531