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The structure and evolution of social psychology: a co-citation network analysis

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ABSTRACT

The present study examined the thematic composition and temporal evolution of social psychology through a co-citation network analysis of 80,350 articles published from 1970 through 2022. Six primary thematic clusters were identified: a broad “Classic Social Psychology” cluster most prominent in the 1970s and 1980s; “Traits & Affect” and “Social Cognition” clusters most influential in the 1990s; and “The Self,” “Intergroup Relations,” and “Big Five” clusters emerging after 2000. A small seventh cluster dedicated to COVID-19 and conspiracy theories emerged around 2021. These trends fit a narrative of generational shifts within distinct social and personality psychology traditions.

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Knowing a field’s history is essential to understanding its present and guiding its future. Social psychology is no exception to this truism. The field has undergone rapid growth and no shortage of growing pains. Critics have diagnosed a series of crises involving its supposed positivism, excessive focus on experimentation, impracticality and social irrelevance, political disengagement, dominance by North American researchers, and reproducibility problems, among other failings (e.g., Berkman & Wilson, 2021; Elms, 1975; Gergen, 1973; Open Science Collaboration, 2012). A thorough investigation of past and present trends in the field is necessary to chart how it has progressed and evolved, and what its main divisions have been.

That investigation could take a narrative approach. Farr (1996) presents an overview of trends in early social psychology until the mid-1950s and chapters in successive editions of the *Handbook of social psychology* (Jones, 1985; Ross et al., 2010) have identified the field’s key themes, dynamics, influences, and topics. Ross et al. (2010), for example, identified three fundamental themes (the normative influence of groups, the centrality of subjective meaning, and emphasis on non-obvious experimental demonstrations) and three basic content areas (group processes; attitudes, opinions, and beliefs; and social perception) that persisted from the 1930s to the 2000s. Other writers offer historical analyses that highlight specific issues, such as Cartwright’s (1979) exploration of the split between psychological and sociological perspectives on the field.

An alternative approach is to investigate historical trends in social psychology quantitatively. Some investigators have studied broad changes, such as the steep rise in the volume of publications and journals and the internationalization of the research community (Kruglanski et al., 2017). Others have restricted their focus to specific subfields or world regions. Allik (2013), for example, revealed a reduction in the proportion of articles by US authors in 2000s personality psychology – understood here as a field within social psychology, broadly conceived – and Haslam and Kashima (2010) documented changes in the proportional contribution of Asian nations to social psychology publications from 1970 to 2008.

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Numerous studies have examined changes within specific journals, most commonly the *Journal of Personality and Social Psychology* (JPSP). Fried et al. (1973) and Mark et al. (1976) reported a rise in field studies in JPSP, and decades apart Reis and Stiller (1992), Quinones-Vidal et al. (2004), and Kruglanski et al. (2017) observed that articles were becoming longer and including more studies, a trend also apparent in the *European Journal of Social Psychology* (EJSP) (van Leeuwen, 2013). Cikara et al. (2012) noted the stability of the gender imbalance among JPSP authors. Shifts in topic content were also apparent. West et al. (1992) found that JPSP articles addressing personality processes rose at the expense of articles on interpersonal relations and group processes over a 20-year period, whereas Webster (2007) demonstrated increasing attention to evolutionary, neuroscientific, and psychophysiological concepts, and to stereotyping and prejudice, judgment and decision making, and motivation and emotion. In the *Journal of Cross-Cultural Psychology*, Cretchley et al. (2010) revealed long-term trends toward the study of values and acculturation and away from child development, implying the journal's increasing centrality within social psychology.

Most quantitative studies of changes in the topics covered by social psychology journals have concentrated on specific content themes rather than attempting to map topics in a comprehensive and systematic manner. The three exceptions help to identify topics that Jones (1985) memorably dubbed “bandwagons” and “sinking ships:” topics on the rise or in decline. Fisch and Daniel (1982) examined the titles of 1,059 articles published between 1971 and 1980 in the *Journal of Experimental Social Psychology*, *EJSP*, or *Zeitschrift für Sozialpsychologie* and classified them into 21 pre-defined content domains. Articles on attribution theory rose over the decade whereas those on cooperation and conflict and the “risky shift” declined. More recently, Rizzoli et al. (2019) conducted lexicometric analyses of abstracts from 2,559 *EJSP* articles published between 1971 and 2016, extracted 16 content clusters, and observed their trajectories. Some clusters rose (e.g., an intergroup relations cluster marked by expressions such as “intergroup contact,” “inter-group attitude,” “threat,” and “racial”), others fell (e.g., an aggression cluster including “aggression,” “aggressive,” “male,” and “shock”), and some rose and then fell (e.g., a cognitive processes cluster marked by “stereotype,” “name-letter effect,” and “cognitive representation”).

More recently still, Rizzoli et al. (2023) employed similar lexically based methods to cluster all 10,222 JPSP articles published from 1965 through 2021. They extracted keywords from the titles of these articles and generated thirteen-, nine-, and six-cluster solutions. At the coarsest level, these groupings were 1) a declining cluster identified by “compliance,” “conformity,” “dissonance,” and neo-behaviorist terms; 2) a declining cluster that included “attitudes,” “behavior,” “aggression,” “causal attribution,” and “locus of control;” 3) a cluster including terms such as “memory,” “decision-making,” “social judgment,” “social comparison,” and “trait” that peaked in the 1980s and 1990s before trending down; 4) a cluster that rose to a plateau in the 2000s and included terms related to social cognition as well as social identity and intergroup relations; 5) a temporally stable cluster composed of generic research terms such as “experiment,” “control,” “predict,” “correlation,” and “influence;” and 6) a rising cluster including “regulatory fit,” “Big Five,” “trait,” “narcissism,” “romantic relationships,” “implicit methods,” “outgroup,” and “cultural variation.” The nine- and thirteen-cluster solutions subdivided these coarse clusters.

Rizzoli et al. (2023) work is the most comprehensive analysis of the topic structure and evolution of social psychology to date. It combines sophisticated methodology with a long study period (57 years) and a very large article sample. It also has some limitations. First, the focus on a single, albeit prominent, journal makes it risky to generalize findings to the discipline as a whole. Second, although lexical analysis of article titles is a valid basis for inferring clusters, it may generate some clusters that do not correspond to topic content (e.g., the generic fifth cluster). Analysis of other article-relevant information might generate distinct clusters. For example, the research an article cites may be as informative about its topic content as the wording of its title.

Clusters within a research field can be identified using an array of indicators and approaches, such as title, keywords, and citation patterns. Citation patterns, in particular, often provide a higher level of

granularity than approaches based on word usage and meanings (Haghani, 2023). Citation network analysis has emerged as the dominant approach to mapping science, offering diverse methods for describing the structure and evolution of fields of study based on the knowledge foundations their publications refer to. Citation-based methods may study simple citation counts and how they change, or reveal more complex patterns by determining clusters or networks of publications that tend to cite the same research (bibliographic coupling) or that tend to be cited together (co-citation).) Diverse forms of citation network analysis can clarify how fields are structured, which works or researchers are most central, and how new trends and themes emerge over time, using sophisticated quantitative methods based on network science on very large datasets (Boyack & Klavans, 2010; McLaren & Bruner, 2022).

When the focus of research is on characterizing the evolution of a field, a key component of our analysis, document co-citation analysis has a unique advantage. This method not only reveals how studies are interconnected but also how these connections evolve over time. A field's contemporary publications can be understood as constituting a research front that rests on an intellectual base of earlier publications. The networks of influential early works that tend to be cited together by contemporary works represent that base. Over time, the research front will tend to evolve and cite new networks. Pivotal new publications will appear, and abrupt bursts of citations will announce the emergence of new trends or topics. As Chen (2006), a proponent of this approach argues, a research specialty can be conceptualized as “a time-variant mapping between its research front and its intellectual base” (p. 361).

The present research adopted this approach by carrying out a co-citation network analysis (Trujillo & Long, 2018) of a comprehensive sample of social psychology articles over a 53-year period (1970–2022). By including articles from all 36 journals identified by Web of Science as falling within the “Psychology, Social” field, it overcomes the limitations of studies restricted to single journals and contains an unprecedented volume of published items (80,350 articles). Chen's (2004) pioneering Document Co-citation Analysis (DCA) methodology was used to identify network-based topical clusters within the article sample. Since its development, researchers have used DCA to identify intellectual trends and turning points in a range of fields (e.g., Haghani et al., 2023; Tavakoli et al., 2023). In essence, the DCA method identifies clusters of publications (i.e., “cited articles”) in the reference lists of a sample of publications (i.e., “citing articles”) based on co-citation patterns. Each cluster is conceptualized as a distinct knowledge foundation or intellectual base for the sample of citing articles and can include publications outside that sample. The dominant themes and methodological approaches of a cluster can be identified by its most highly cited articles and by common descriptors in the titles of its citing articles. Properties of each cluster such as its size (i.e., number of cited articles) and the distribution of the publication years of its cited and citing articles allow inferences about its popularity and historical evolution. The DCA methodology also locates bursts of citations for highly influential publications to reveal temporal trends in the influence of each cluster. We aimed to characterize the main structural divisions or subfields within social psychology and the evolution of these topic clusters over time in a way that would shed light on the field's recent history. This aim was purely descriptive: to document the patterns detected by a powerful analysis of a very large dataset rather than to test any predictions about the nature or drivers of the field's evolution.

Method

Article sample and analysis

DCA analysis was conducted with a sample of all 80,350 articles published 1970–2022 inclusive in the 36 journals that the Web of Science database lists as belonging to the field of “Psychology, Social.” This includes journals with some focus on personality (i.e., *Asian Journal of Social Psychology*, *Basic and Applied Social Psychology*, *British Journal of Social Psychology*, *Cyberpsychology Behavior and Social Networking*, *European Journal of Personality*, *European*

Journal of Social Psychology, *European Review of Social Psychology*, *Group Dynamics-Theory Research and Practice*, *Group Processes & Intergroup Relations*, *International Journal of Social Psychology*, *International Review of Social Psychology*, *Journal for the Theory of Social Behaviour*, *Journal of Applied Social Psychology*, *Journal of Community & Applied Social Psychology*, *Journal of Cross-Cultural Psychology*, *Journal of Experimental Social Psychology*, *Journal of Individual Differences*, *Journal of Loss & Trauma*, *Journal of Nonverbal Behavior*, *Journal of Personality*, *Journal of Personality and Social Psychology*, *Journal of Research in Personality*, *Journal of Psychosocial Oncology*, *Journal of Social Psychology*, *Personality and Individual Differences*, *Personality and Social Psychology Bulletin*, *Personality and Social Psychology Review*, *Psychology of Men & Masculinities*, *Self and Identity*, *Social and Personality Psychology Compass*, *Social Behavior and Personality*, *Social Cognition*, *Social Influence*, *Social Psychological and Personality Science*, *Social Psychology*, *Social Psychology Quarterly*). Citing articles published before 1970 were excluded because the number of annual publications becomes very low (e.g., only four of the 36 journals existed pre-1970). The bibliographic information of this article set was exported and stored in the form of text files. This included the title, year of publication, and full reference lists of each article. By examining the reference lists of the articles (i.e., the 80,350 citing articles), the DCA employs a k -means clustering algorithm to identify groups of references (i.e., the cited references) that are often jointly cited. Each cluster represents the knowledge foundation of a specific theme or broad topic in the field, one or more of which may underpin individual citing articles.

The DCA analysis was conducted using CiteSpace version 6.1.R6, aligning with the methodology proposed by Chen (2004). It was performed with time slices of one-year intervals for the 1970 to 2022 period. The look-back years (maximum age of cited articles relative to their citing article) were set to 50, to comprehensively capture the historical context. The parameter k for the g-index (Egghe, 2006) calculation used to restrict the network to the most relevant cited articles) was set at $k = 100$, a relatively large number that provides a high level of granularity within each cluster (higher values of k increase the number of cited articles retained in the network). All other parameters were maintained at their default settings. The resulting network comprised $N = 11,261$ nodes (i.e., cited articles in the network) and $E = 368,829$ links (i.e., co-citation connections between nodes), resulting in a moderate network density of $D = 0.0058$ (i.e., 0.58% of all possible links among nodes were actual links).

Once the clusters were identified, the following attributes of each cluster were extracted: 1) its size (i.e., the number of cited references it contains), 2) the temporal distribution (i.e., mean, median and range) of publication year of the cited references, representing the age of the cluster's knowledge foundation, and 3) the coverage of each citing article, representing the number of the cited references of the cluster that have appeared in the reference list of each citing article. Citing articles with higher coverage are considered more relevant to the cluster. The overall number of times that each cited reference appeared in the reference lists of the citing articles was also recorded. This "local citation count" represents the total citations to each reference from within the field of social psychology over the 53-year study period, to be differentiated from each reference's global citation count, which also includes citations from outside the field.

To provide an objective and algorithmic determination of the themes that each cluster represents, nouns and noun phrases were extracted from the titles of the citing articles of each cluster. The most frequently recurring examples were identified, with greater weight given for those extracted from high-coverage, and therefore more cluster-relevant, citing articles. The top nouns and noun phrases representing each cluster were determined by this method and used as a guide for labeling each cluster, alongside inspection of their most influential references.

The temporal component in the analysis focused on cluster-level trends, notably the time period over which each cluster was most active (i.e., the distribution of publication years of its citing and cited articles). However, bursts (sudden spikes) in the local citations of specific articles within each cluster were also determined using Chen's (2004) methodology, which employs Kleinberg's (2003) burst detection algorithm, and these are reported in the supplementary materials as a further aid to interpreting when each cluster was most active.

Transparency and openness

Our sample is the complete population of articles in the specified years and journals without exclusions. Data were analyzed using CiteSpace software (Chen, 2004). This study's analysis was not preregistered.

Results

Characterizing the clusters

The co-citation network analysis yielded nine topic clusters. Six clusters were very large, collectively containing 11,082 (98.6%) of the 11,240 articles allocated to any cluster. The two smallest clusters, containing 30 and 3 articles respectively, were excluded from further analysis, but the next largest (125 articles) was retained for analysis despite being much smaller than the primary six (all >1,000 articles). In recognition of its smaller size, this marginal cluster receives less thorough interpretation below. The thematic contents of the seven final clusters were interpreted by examining (a) the top noun and noun phrase descriptors extracted from titles of articles citing articles in each cluster and (b) the cited articles with the greatest local citation count, which represent intellectual milestones or lodestones, and (c) the cited articles with the strongest citation bursts, which represent publications that were especially influential in the cluster period. The supplementary materials table (see Appendix 1) summarizes this information about each cluster, including documenting the count and mean publication year of its articles, and articles with especially strong citation bursts, and it documents that the “silhouette scores” for all clusters exceed the standard benchmark (0.7) for strong cluster homogeneity or cohesiveness. The complete output of the analysis is provided in Appendix 2. The table also identifies articles within the cluster with the greatest broad (cross-cluster) citation impact on social psychology (“centrality”), based on being co-cited with articles in other clusters. The following paragraphs provide descriptions of the seven clusters listed in decreasing order by size.

Cluster 1 (Classic Social Psychology). This cluster was the largest, containing 2,888 cited publications, and also the oldest. The median publication date of the citing articles was 1980, with most activity between 1975 and 1985, and the median publication date of the cited articles was 1971. The most strongly associated descriptors in the titles of articles citing publications in the cluster were “causal attribution,” “interpersonal attraction,” “risky shift,” “helping behavior,” and “intrinsic motivation.” The cluster's most locally cited publications include famous articles and books published from the 1950s through the 1970s by pioneers such as Bandura, Bem, Byrne, Festinger, Heider, and Kelley. The most influential publications in the early years of the cluster, determined by the strength of their citation bursts, were works by Heider (1958) on interpersonal relationships (the cluster's strongest burst overall), Festinger on social comparison processes, Adorno and colleagues on the authoritarian personality, Osgood and colleagues on the semantic differential, and Rotter on locus of control. Publications by E. E. Jones and Davis on attribution processes and by Abramson and colleagues on learned helplessness had bursts commencing later in the 1970s. One statistical text by Winer also experienced a citation burst.

Key topics within the cluster therefore included attribution theory, interpersonal liking, cognitive dissonance, social comparison, the risky shift in groups, the semantic differential, authoritarianism, stigma, and self-efficacy, among others. These topics are diverse by the standards of the field's present-day specialization, cross-cutting group, interpersonal, and intrapersonal processes as well as individual differences. The cluster is therefore best defined historically as the relatively early stages of modern social psychology from which later specialist subfields differentiated.

Cluster 2 (Intergroup Relations). This second-largest cluster of citing articles had a median publication year of 2016, with the greatest activity between 2010 and 2019, and the median date of its cited articles was 2001. The titles of articles in the cluster commonly contained the descriptors “collective action,” “intergroup contact,” “social dominance orientation,” “system justification,” and “intergroup relation.” The cluster's most cited publications included major

theoretical and empirical works by Brewer, Crocker, S. Fiske, Jost, Pratto, Sidanius, and especially Tajfel and Turner, reflecting a substantial contribution from European social psychologists. In decreasing order, the strongest citation bursts for substantive contributions included works by Pettigrew and Tropp (2006) on contact theory, Graham and colleagues on the politics of moral foundations, Fiske and colleagues on stereotype content, van Zomeren and colleagues on social identity and collective action, and Leach and colleagues on group identification. Several methodological publications – on mediation and moderated mediation analysis by authors including Preacher, Hayes, and Muller, and on MTurk as a data collection platform by Burmeister and colleagues – also showed strong bursts, with Hayes (2022) the cluster's strongest overall.

The key topics in Cluster 2 therefore included social identity, social dominance, inter-group contact, minimal groups, political psychology, and the stereotype content model. Its central theme is therefore one of intergroup relations and group-based identities.

Cluster 3 (The Self). This cluster's median citing article publication year was 2010, with greatest intensity between 2004 and 2015, and its median cited publication appeared in 1997. Common title descriptors included “mortality salience,” “social exclusion,” “cultural difference,” “terror management,” and “regulatory focus.” Authors of the cluster's most cited publications included Baumeister, Brown, Deci, Higgins, Hofstede, Kitayama, Leary, Markus, Rosenberg, Ryan, Steele, Taylor, and Triandis. Prominent early citation bursts were found for publications on positive illusions and self-serving biases by Taylor and Brown (1988), on the self-concept by Rosenberg, on social comparison by Wills, and on self-regulation by Carver and Scheier, respectively. Work on self-construal by Trope and Liberman had a substantially later burst. Statistical publications by Aiken and West (1991; multiple regression), Sobel (mediation analysis), and Raudenbush (hierarchical linear models) also featured among the cluster's strongest citation bursts, with the first of these the strongest overall for the cluster.

Major topics in the cluster therefore included self-esteem, the need to belong, self-serving biases, independent versus interdependent self-construals, self-affirmation, comparing self to others, individualism versus collectivism and other cultural dimensions, and intrinsic motivation and self-determination. The common thread in these topics is a focus on the self-concept and its individual and cultural processes, variations, and impacts. The focus of the cluster is therefore more intrapersonal and interpersonal in focus than the intergroup emphasis of the previous cluster, with a special emphasis on processes implicating the self.

Cluster 4 (Traits & Affect). The median publication year of this cluster's citing article was 1996, with an interquartile range of 1991 to 2003, and the median cited article was published in 1983. Descriptors extracted from the titles of its articles included “social support,” “5-factor model,” “type-A behavior (pattern),” and “coping style.” The cluster's most cited substantive publications were written by Carver, Diener, Folkman, Lazarus, H. and S. Eysenck, Mischel, and Watson. Several of the most cited publications were methodological in focus, such as Baron and Kenny on mediation analysis, Bentler on structural equation modeling, and Nunnally on psychometrics. Several of the strongest citation bursts in the cluster were also methodological, including Baron and Kenny (1986), the strongest burst overall, Cronbach on reliability, and Cohen and Cohen on regression analysis. Substantive publications with strong bursts addressed Eysenck's personality dimensions (Eysenck & Eysenck, 1975), Rotter on locus of control, Mischel on the situationist critique of traits, Fenigstein and colleagues on private versus public self-consciousness, and Bandura on social learning theory.

The main topics explored in the cluster were therefore the structure of positive and negative affect, basic dimensions of personality and coping, the nature and predictive potency of traits, life satisfaction, empathy, and self-monitoring. Cluster 4 is therefore dominated by personality psychology and studies of affect variations.

Cluster 5 (Big Five). This cluster had a median citing article date of 2016, with greatest activity from 2011 to 2019, and the median cited publication appeared in 2003. The most strongly associated title descriptors were “dark triad (trait),” “personality trait,” “emotional

intelligence,” and “personality development.” The most cited substantive publications in the cluster were written by personality psychologists including Buss, Costa, Digman, Goldberg, Gosling, John, McCrae, Roberts, Paulhus, and Srivastava, and the most influential methodological publications by Bentler, Cohen, Hu, Kenny, and L. and B. Muthén. The strongest citation bursts among substantive publications were on the Dark Triad by Paulhus and Williams (2002), and the Big Five by Gosling and colleagues and John and Srivastava. In addition, more methodological and meta-scientific publications on structural equation modeling (Hu & Bentler, 1999), the R statistics package, researcher degrees of freedom (Simmons et al.), and WEIRD societies (Henrich and colleagues), as well as the DSM-5, also experienced strong citation bursts.

A large proportion of the most influential substantive publications in this cluster were about the structure, nature, or measurement of the Big Five personality factors, or employed the Big Five model as a framework for examining personality development and change. Other key publications examined additional traits such as narcissism and the dark triad, and statistical methods for evaluating covariance structure of individual difference variables. Therefore, whereas Cluster 4 represented a generation of personality research in which the Big Five had not yet emerged as a primary descriptive framework, Cluster 5 represents a new generation of research in which that structural framework predominates.

Cluster 6 (Social Cognition). This cluster’s citing articles had a median publication year of 2000, concentrated around 1993 to 2008, and its median cited publication was dated 1989. Its top title descriptors were “social judgment,” “planned behavior,” “stereotype activation,” “explicit attitude,” and “personality trait.” Authors of the most cited publications include leading authorities on attitudes and attitude-behavior relations (Ajzen, Chaikin, Eagly, Fishbein), social information processing (S. Fiske, Higgins, Markus, Neuberg), implicit processes (Banaji, Fazio, Greenwald), and cognitive heuristics and biases (Kahneman, Nisbett, Wilson, Tversky). The strongest citation bursts in the cluster, the earliest commencing in the late 1970s and early 1980s, were for publications by Heider (1958) on balance theory, Nisbett and Ross on inference processes, Allport on prejudice, two editions of Fiske and Taylor’s social cognition textbook, Markus on self-schemas, and Fishbein and Ajzen on the theory of reasoned action. Somewhat weaker citation bursts to publications on implicit attitudes, automatic processes and priming arose in the late 1990s and early 2000s.

The central concerns of this cluster revolve around the cognitive dimensions of social phenomena as they relate to attitudes and behavior. This cluster therefore represents the core topics of the psychology of social cognition.

Cluster 7 (COVID-19 & Conspiracies). With a median citing article year of 2021 and a median cited publication of 2019, this very small cluster contains recent publications focused on conspiracy theories and the pandemic. Citing title descriptors included “conspiracy theories” (and “conspiracy theorist”), “conspiracy belief,” “COVID-19 pandemic,” and “national narcissism.” Most cited publications in the cluster included recent articles led by van Bavel, Brooks, Douglas, Imhoff, and Jolley, but also included older publications by Carver and Park on coping and meaning-making, respectively. These publications primarily addressed conspiracy thinking in general and in relation to vaccination, as well as responses to the pandemic and quarantine. This very small cluster was too young to have any identified citation bursts.

The temporal ordering of the six primary clusters, excluding the very small Cluster 7, is summarized in Figure 1, which present the distribution of publication years of the cited and citing publications for each cluster. The two panels show the same temporal ordering of clusters but with a cited-to-citing lag averaging 12.3 years between median publication dates (range 9–15 years).

Figure 2 presents a visualization of all seven clusters, each dot representing one cited reference and cluster proximity reflecting overall similarity of co-citation patterns. This spatial representation of the relations among the clusters reveals a temporal dimension from left to right. The left-most cluster (Classic Social Psychology: median citing article publication year 1980) precedes the Traits and Affect (1996) and Social Cognition (2000) clusters, which are followed by The Self (2010), Intergroup

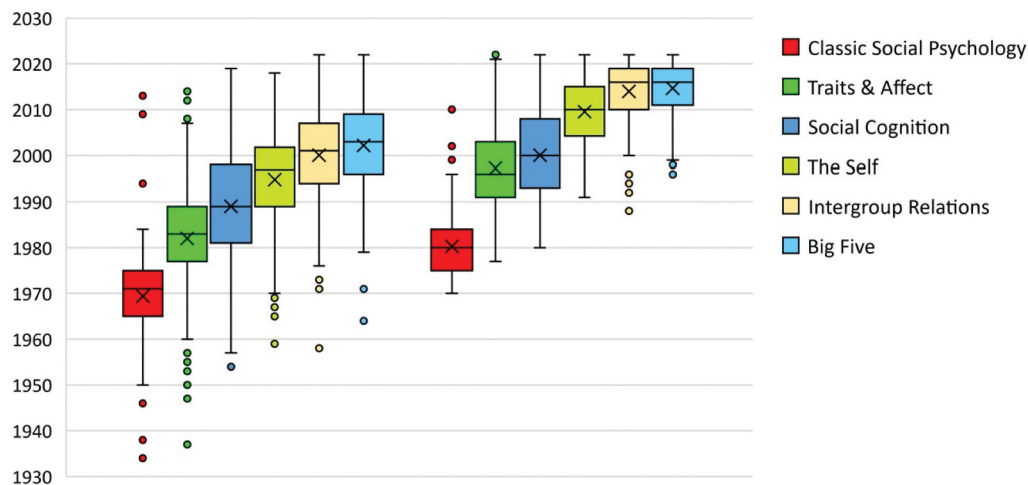


Figure 1. Box and Whisker Plot of the Age of the Cited Articles (left panel) and Citing Articles (right panel) for the Six Primary Clusters.

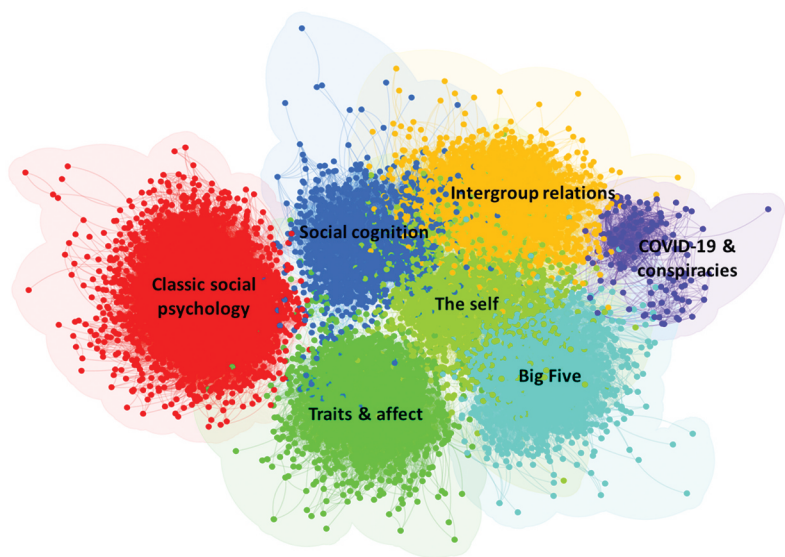


Figure 2. Spatial Visualization of the Seven Co-citation Network Clusters.

Relations (2016), and Big Five (2016), with the fledgling COVID-19 and Conspiracies cluster (2021) last. The Traits and Affect cluster is adjacent to the Big Five cluster at the bottom of the figure, representing a concatenation of personality research, and the Social Cognition and Intergroup Relations clusters are similarly adjacent at the top, representing a progression of core social psychology research. The Self cluster is intermediate between the core personality and social psychology clusters, with significant interpenetration of the Big Five, Social Cognition, and Intergroup Relations clusters.

Discussion

Our co-citation network analysis identified six large article clusters and one small, recently emerging cluster dominated by research on the COVID-19 pandemic. The clusters were dense and small in

number by the norms of the DCA methodology, as an analysis of a similarly sized urban planning literature (Haghani et al., 2023) generated 18 clusters. This suggests that social psychology has cohered to an unusually strong degree around a few primary themes or subfields. This conclusion contradicts the common view that social psychology is fragmented, at least at the level of its knowledge foundations.

The composition of the clusters was readily interpretable both thematically and historically. With the exception of the “Classic Social Psychology” cluster, whose focus was diffused across intergroup, interpersonal, and intra-individual levels of analysis, each cluster had a clearly identifiable set of content foci. Those foci were aligned with core topics in social and personality psychology and exemplified by well-known influential publications. Characterization of the clusters was also aided by the close temporal alignment of their key publications, despite publication year not being a basis for the cluster solution. Within each cluster the most influential publications tended to be published within a decadal range and the time when they were most influential tended to occur in a defined period of similar duration. Moreover, the timing of the clusters is consistent with a progression of new research topics, with lines of social cognition and trait and affect structure research emerging from the less differentiated “parent” cluster of classic social psychology and being succeeded by clusters associated with intergroup relations, the self, and the Big Five personality factors.

In some respects, this progression seems generational. New clusters emerged from the one most closely related to them approximately every 15 years, and their key papers experience periods of peak influence of similar length. In addition, each cluster’s citing articles tended to cite publications that appeared 12 years earlier, on average. There are also apparent generational lineages of personality and core social psychology clusters through the study period, with The Self cluster as a possible hybrid. The existence of these sequences – from Social Cognition to Intergroup Relations, and from Trait and Affect structure to the Big Five – suggests that as a new cluster emerges, becomes “hot” and grows, an earlier one tends to go into relative decline.

The six primary clusters obtained in the present study show some resemblance to those found in other attempts to map the structure and evolution of social psychology. Rizzoli et al. (2023) analysis of *JPSP* article titles is especially relevant, as it also yielded six clusters whereas the earlier analysis of *EJSP* article abstracts (Rizzoli et al., 2019) yielded 16. Rizzoli et al.’s (2023) first cluster, which included “compliance,” “conformity,” “dissonance,” and neo-behaviorist terms and declined through their study period, appears to correspond well to our “Classic Social Psychology” cluster, which included early work by Festinger and others from the 1950s to 1970s. However, their second cluster (“attitudes,” “behavior,” “aggression,” “causal attribution,” and “locus of control”) includes keywords that align both with the “Classic Social Psychology” (e.g., “causal attribution”) and the later “Social cognition” (e.g., “attitude,” “behavior”) clusters. Rizzoli et al.’s (2023) third cluster (“memory,” “decision-making,” “social judgment,” “social comparison,” and “trait”) corresponds well to our “Social cognition” cluster, and like that cluster it reached its zenith in the 1990s and then declined.

However, Rizzoli et al.’s (2023) fourth cluster, which peaks in the 2000s, combines some social cognition-related terms (e.g., “stereotype” and “bias”) with intergroup keywords (e.g., “intergroup,” “identity”), and thus overlaps our “Social Cognition” and “Intergroup Relations” clusters. Rizzoli et al.’s (2023) fifth cluster is primarily generic rather than topical, and their sixth, which rises in the 2010s, is a disparate collection of personality trait, relationship, and group-related terms and does not correspond well to any of our clusters.

The correspondence between our six-cluster solution and Rizzoli et al. (2023) is evidently only moderate, the latter notably including no personality- or self-focused clusters. Nevertheless, there are several points of consistency: the fading away of “classic” early work on attribution, conformity, and dissonance; the rise and decline of social cognition research; and the relatively recent rise of intergroup relations research. The final two patterns were also observed in Rizzoli et al.’s (2019) analysis of *EJSP* abstracts, the last one arguably reflecting the growing global impact of the European social identity tradition.

Although our analysis has the virtue of being derived from a substantially larger and more diverse sample of publications than Rizzoli et al.'s (2023) *JPSP* analysis, we believe the two clusterings have complementary value. They rest on very different types of data – Rizzoli et al.'s language use (common expressions in article titles) versus our bibliographic referencing (co-citation patterns) – and also diverge in how cluster content is interpreted. Rizzoli and colleagues' interpretive approach emphasizes the keywords most strongly associated with each cluster, whereas ours emphasizes the key references that are most influential as a knowledge foundation within it. Our approach may produce cluster interpretations that are more influenced by “founder effects” by highlighting the (generally earlier) highly cited articles that established a new research field or approach.

Among the strengths of the present study are its unprecedentedly large sample of publications and its derivation of recognizable, historically meaningful topic clusters that support a credible narrative of the field's evolution. However, the work also has limitations. The study did not include citing articles published prior to 1970 – although its cited publications included some from as far back as the 1930s – so it could not thoroughly explore social psychology's earlier history. The “classic social psychology” of the 1950s to 1970s, for example, itself rested on an earlier body of classics. The fact that our set of journals included those covering personality psychology under Web of Science's broad “Psychology, Social” grouping means that our clusters do not exclusively capture social psychology in a narrow sense but also includes research on personality and individual differences. However, many of the field's most well-known journals encompass both social and personality psychology and the distinction may be eroding. The labeling of our clusters may be imprecise and arguable in some cases given the diversity of research topics covered under each one. The Big Five cluster, for example, included articles on other individual difference dimensions and models (e.g., dark triad, emotional intelligence, narcissism), which may challenge the adequacy of the current label. Finally, although our analysis implies that clusters are generationally distinct or discontinuous, there must be gradual transition processes between temporally displaced research subfields that an analysis based on discrete clusters cannot fully describe.

The present analysis offers a comprehensive but economical mapping of social psychology research that illuminates its recent history. Further research could explore the dynamics and drivers of the changes we have identified, consider the merits of finer-grained clustering within our broad clusters, and examine whether or how the categorical shifts in social psychology's main topics co-exist with historical continuities in the fundamental concerns of the field (Ross et al., 2010).

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Data availability statement

Data are available on request. A comprehensive spreadsheet of the data analysis is available at <https://osf.io/4zkw6>

Open scholarship



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