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THE ROLE OF EMOTION IN SOCIOLOGICAL RESEARCH AND THEORY. THE SENTIMENT ANALYSIS APPROACH

di

*Liana M. Daher, Gabriele Caruso**

1. *Introduction*

The internet has emerged as a fundamental component of social behaviour, providing new and increased opportunities for communication and action for both people and groups. Its ongoing expansion has made available a vast amount of information such as posts, stories, comments and reviews, that are employed by users of various platforms to communicate and create shared meanings. By conceiving it as a “discursive space”¹, researchers can gain a cognitive tool to improve their understanding of how online informational processes contribute to the construction of social reality, shaping individual perceptions through the generation of social knowledge. When users read and collect opinions online, they tend to form, change or reinforce their opinions on social issues. This phenomenon influences their personal behaviour but also operates in shaping group actions and influencing political and economic spheres², acting similarly to Habermas’s public sphere, although in a more complex and fragmented way³. However, online discourses rarely consist of only mere facts and objective statements. They are rich in opinions that describe attitudes, judgments, and emotions regarding a specific topic or issue.

This emotional dimension is particularly relevant in the classics of sociology, as well as those of other thinkers of the 19th century; the founding fathers of Sociology incorporated emotions into their theories in a spontaneous and natural manner, addressing the subject of emotions, emphasising their in-

* Although this contribution represents the result of joint reflection by the authors, Liana M. Daher edited the introductory paragraph and the conclusive remarks, while Gabriele Caruso edited paragraphs 2 and 3.

¹ Maciag, 2018.

² Karamibekr and Ghorbani, 2012.

³ Rasmussen, 2014.

tersubjective nature and the connections to social action. Then, due to the success and the hegemony of the positivist and cognitive paradigms emotions almost disappeared from both social theory and research. Recently new approaches opened to a rereading of emotions and sentiment⁴ in social sciences, with particular attention to empirical research. The sociology of emotions has made, in fact, greater advances in the development of theoretical perspectives on social emotional processes and in carrying out relevant fieldworks, stressing the issue of the quality of empirical research⁵.

According to Collins, emotions can be studied at micro-meso and macro levels considering how much emotional, symbolic, and value-oriented behaviours are determined by the dynamics of interaction rituals⁶. The theory of interaction ritual chains moves, in fact, from microlevel processes to macro ones, passing through the meso level, i.e., the social group⁷. These levels dynamic should be taken into consideration in those fieldworks that investigate emotions in social relationship.

By drawing on classical theory, contemporary sociology of emotions, and computational methodologies, this paper explores how the study of emotions can be advanced through reflexive and methodologically pluralist approaches. It emphasises Sentiment Analysis (SA), as a powerful means of making visible not simply the emotional dimensions of digital discourse but also providing new angles of observation on the relationship between feeling and action, integrating them in ways that clarify the complex, multilayered role of emotions in social life and showing how such a methodological innovation contributes to revitalise the sociology of emotions.

This paper aims to stress the theoretical importance of a sociological perspective on emotions, and to explore how it can be enriched by SA, a tool originally developed for linguistic purposes, which may enhance the sociological understanding of the link between emotions and actions. It combines natural language processing (NLP)⁸, artificial intelligence, and text mining to

⁴ The definition of the term emotion should include several emotional states such as feelings, affects, moods, and sentiments, expressed in a positive or negative way. Emotions can be viewed as culturally outlined categories of feelings or affects, as well as sentiments can be analysed as “socially constructed patterns of sensations, expressive gestures, and cultural meanings organized around a relationship to a social object”. Sentiments, in fact, highlight the presence of relatively enduring social relationships as affect agents.

⁵ Bericat, 2016

⁶ Collins 1993.

⁷ Collins 1981.

⁸ It is an interdisciplinary branch of artificial intelligence and computer science, closely related to computational linguistics and centred around processing data encoded in natural language. See: Guida and Mauri, 1986.

enable the evaluation of textual opinions that encompass judgments, evaluations, affective statements, beliefs, or wishes⁹. This tool's basic function is to categorise a text's polarity as negative or positive, using a domain-specific methodology. As a result, the polarity of a term is dependent on the context in which it is employed. SA and other computational research methods have experienced an unprecedented boom across the social sciences thanks to the rapid expansion of available data and analytic software. Although some gaps and mismatches between text analysis and social research exist and therefore it is often needed to combine different tools leveraging the advantages of computational processing¹⁰, there are also several encouraging insights on the usefulness of this tool to analyse emotion in online and social media contexts, bearing in mind that online interactions and discourse are worth analysing since they contribute to shape offline individual and group actions. In other terms, online and offline life constitute two continuous dimensions¹¹, also tied by the social construction of emotions.

This work, starting from a theoretical overview of some key concepts connected to the role of emotions in sociological studies, examines NLP and computational text analysis technologies to address the following questions: How does SA improve the sociological understanding of the relationship between feelings and behaviour? At what level (micro/meso or macro) is NLP more valuable in sociological research? It should be possible to extend the use of the technique in offline contexts, and could it be considered one of the alternative techniques in a mixed methods approach? In general, this paper aims at understanding how linguistic analysis can enhance the sociological comprehension of the relationship between emotions and actions discussing the epistemological advantage, strengths and limitations of these new tools within a mixed methods approach.

2. Theoretical Perspectives on Emotions and Sentiments

The issue of emotions' place within sociological discourse is not new. The hegemony of rationality on the emotional sphere began to decline in the 1980s, when the Sociology of Emotions was established¹². Nevertheless, some classical sociologists pointed out the role of emotions and feelings in the formation of society and in shaping the actions of individual and collective actors.

⁹ Karamibekr & Ghorbani, 2012.

¹⁰ Baden *et al.*, 2022.

¹¹ Anderson, 2013.

¹² TenHouten, 2006; Barbieri, 2019; Opromolla & Volpi, 2024.

The following theoretical path explores how emotions have been conceptualised in sociological thought across multiple levels of analysis: from macro-level institutional dynamics and collective rituals, to meso-level norms regulating social interactions, and finally to the micro-level of subjectivity and the self.

Although Durkheim's work does not directly address emotions, he highlighted their role in ensuring social cohesion. His concept of "collective effervescence" is described as a necessary condition to generate and maintain society through the strengthening of social bonds, identifying emotions as social objects linked to specific groups' definitions of the situation and consequent permitted feeling rules¹³. In "*The Elementary Forms of Religious Life*", Durkheim delved into the relationship between social and emotional life, arguing that religion, understood as a symbolic system of social representations, provides the foundation for collective unity. "Emotional self-control" is mandated by norms embedded in a religious system, and deviations from this system of rights and duties provokes strong collective reactions. Hence, when normative expectations are not met, ignoring shared values, the community is likely to react by showing strong negative emotions toward the guilty individuals¹⁴. Aware of the theoretical perspective introduced by Comte¹⁵, the sociologist viewed celebrations and ceremonies as essential means to unite individuals, allowing them to manifest their individual affectivity through rituals of sociability¹⁶.

Therefore, they are not merely individual states but social forces that integrate people into a community. When bodies gather, emotions become contagious, and Durkheim's "collective effervescence", a term he used to picture the idea of social force in its emergence, captures this intense emotional charge that leads to heighten solidarity and transcend the self¹⁷. However, while this concept offers insight into the emotional dynamics of social life, religion appears to play an ambivalent role, both enabling and controlling emotional expressions¹⁸. Marcel Mauss, further emphasised this obligatory dimension of emotions conceived as an integral part of social and ritual inter-

¹³ Fisher & Chon, 1989.

¹⁴ Durkheim, 1912.

¹⁵ Comte, while stressing on the necessity to develop a study of human nature structured similarly to the approach used for natural sciences, was fully aware of the relevancy of the emotionality dimension in sociological explanations, as it guarantees social order created by the pooling of affects which are generators of social solidarity. See: Kemper, 1990.

¹⁶ Plé, 2000.

¹⁷ Lyon & Barbalet, 1994; Shilling, 2016.

¹⁸ Fisher & Chon, 1989; Shilling, 2016.

actions, acting as a language which must be expressed according to specific cultural norms to solidify bonds between individuals¹⁹. So, a certain proportional relation can be detected in Durkheim's theoretical studies. In fact, the "social" imposes itself on the "individual" as well as "reason" imposes itself on the "emotions".

On an opposite paradigmatic perspective, building on Goffman's "display rules" regarded as "feeling rules", Hochschild's work *The Managed Heart. Commercialization of Human Feeling* emphasises how emotions are socially constructed and regulated in everyday life. Through the lens of Goffman's "dramaturgical" approach, it is highlighted that the management of emotions in group context is extremely important for individuals²⁰. Thus, while Durkheim considered social causation of emotions to be mostly linked to a condition of arousal that needs to be suppressed and redirected, Hochschild shows how individual emotions have become commodities²¹ that have to be displayed and sold, emphasising how the constraints imposed by the marketplace on emotional expression may ultimately lead to a sense of alienation²². This concept was adapted from Marx, who considered emotions as "adaptive mechanisms" that signal social contradiction and class struggle. Alienation generates emotional responses, such as anger, grief, and rage, that are not mere social products but transformative forces within social life²³. Therefore, alienation may take the form of a drive to action, resulting from the expression of one's emotions arisen in relation to given socio-historical contexts²⁴.

Simmel also linked the manifestation of emotions to the socio-historical context. Nevertheless, he adopted a different approach, viewing conflict, rooted in competitive dynamics such as envy and jealousy, as a form of "positive opposition" that plays a fundamental role in shaping social relations. In other terms, according to Coser, conflict solidifies group identity and boundaries, while stimulates emotional dynamics of reciprocal antagonisms to preserve group cohesion, confining hostilities within established borders²⁵. Additionally, by drawing a parallel between Marx's, Durkheim's and Mead's

¹⁹ Marcel Mauss, 1921.

²⁰ Hochschild, 1979; 1983.

²¹ Through her study on airline stewardesses, she illustrated how emotional expressions are commodified, as workers must display predefined emotions like calmness or sympathy to meet job expectations. These workers, like actors, perform emotions under professional scripts to ensure the success of their work and of the company employing them. See: Hochschild, 1983.

²² Fisher & Chon, 1989.

²³ Weyher, 2012.

²⁴ Scribano & Cena 2016.

²⁵ Coser, 1956.

thoughts on deviant behaviour, he underlined how criminals arouse the moral and aesthetic actors' sentiments contributing to create a sense of solidarity within a given community, calling for the mobilisation of energies against the sources of social disease and leading to the deployment of previously inactive defence mechanisms²⁶. As pointed out by Wallace and Wolf, his theory was influenced by Weber's conflictualism, characterised by a greater complexity compared to Marxism and by a vision of power and antagonism as enduring features of social life²⁷.

Other scholars have explored how emotions shape not only interpersonal and normative dynamics, but also collective action and social movements. Pulcini emphasised that emotional bonds among members reinforce cohesion and facilitate mobilisation, thereby contributing to the development of a group identity²⁸. In this regard, Collins introduced the concept of "emotional energy" to make explicit the link between emotions and collective action. Notably, emotional transformation within groups can generate collective structures of solidarity; for instance, initial feelings of anger may evolve into indignation, fostering a shared sense of injustice and a common willingness to act²⁹.

While Durkheim and Marx differ in their conceptions of the emotional dimension, both attribute to it a structural role within society. In contrast, Weber argued that the proper domain of sociological inquiry is the ordered conduct of individuals, and thus he viewed "affectional action", understood as social action driven by passions and emotions, as inapt to explain social order, being instead associated with its changes. Although his work includes four ideal types of social (goal-rational action, value-rational action, affective action, and traditional action), his focus lies primarily on the first two, which he conceives as inherently rational and in opposition to emotions, seen as spontaneous, impulsive forces that risk diverting social actors from their intended goals³⁰. Yet Weber acknowledged the subversive power of emotions in escaping the rationalisation of life, suggesting that charisma, whose emotional component is evident, may challenge this process, while historically succumbing to it³¹.

In Simmel's "*blasé* metropolitan man", the reference to the individual emotional dimension appears substantial³². He noted how individuals, over-

²⁶ Coser, 1966.

²⁷ Wallace & Wolf, 1995.

²⁸ Pulcini, 1997.

²⁹ Collins, 1990.

³⁰ Von Scheve, 2014.

³¹ Iagulli, 2021.

³² Simmel, 1900; 1903.

whelmed by the sensory and social complexity of the modern city, transform rationality into a shield to preserve emotional distance³³. This echoes Weber's rationalisation since, according to Simmel, the metropolitan man finds himself "less and less able to measure up to an encroaching objective culture [...] the individual has been reduced to a negligible quantity, a speck of dust opposite a vast organization of things and forces that gradually rids him or her of all advances"³⁴. However, while he conceives these individuals as a calculating subject with feeble emotional reactions, they are not necessarily atheistic. Indeed, as a response to the crisis of the modernity, the emotional dimension may re-emerge in an intense and multifaceted relationship with God³⁵. A similar emotional detachment is also found in Benjamin's "*flâneur*", who navigates the city as a disengaged observer able to exert control over urban space and the city inhabitants with whom they are likely to come into contact³⁶. Modernity, marked by competition, efficiency, and individualism, reveals a deep tension between personal fulfilment and collective belonging. Urban life offers new opportunities for sociability and expression, but also pressures individuals into hyper-rational, emotionally restrained roles³⁷. This dynamic partially also resonates with Hochschild's emotional commodification³⁸.

Building on Simmel's and Weber's socio-historical analyses, Elias described the Western "civilisation" process as the historical institutionalisation of certain ways of living characterised by powerful barriers, both psychological and institutional, as well as by social standards of self-inhibition against the uncontrolled manifestation of feelings and emotions³⁹. The emergence of the "court society" marked a pivotal moment, introducing internalised emotional discipline that became central to modern subjectivity⁴⁰. However, while Elias's perspective critically emphasises the juxtaposition between emotions and reason, Elster highlighted that these two dimensions intertwine. In "*Sour Grapes*", inspired by the Aesop's fable "*The Fox and the Grapes*", he argued that unfulfilled desires produce frustration, which is managed through rational reinterpretation, leading to "adaptive preference formation"⁴¹. In order to

³³ Iagulli, 2017.

³⁴ Simmel, 1903, 12.

³⁵ Ferrara & Rosati, 2005.

³⁶ Boutin, 2012.

³⁷ Lo Verde, 2014; Ruggieri, 2021.

³⁸ Hochschild, 1983.

³⁹ Elias, 1969.

⁴⁰ Iagulli, 2017.

⁴¹ Elster, 1983; McLendon, 2013.

alleviate such psychological discomfort, the subject resets his preferences, removing the condition of frustration: “driven by hunger, the fox tried to pick grapes from a tall vine, jumping with all his might, but it could not touch them; then walking away it said: ‘it is not ripe yet; I don’t want to pick it un-ripe’”⁴². This concept aligns with Simon’s “bounded rationality” that underlines how individuals possess only incomplete knowledge of action alternatives and limited understanding of the potential consequences of their actions. As a result, decisions are not based on exhaustive data alone, but also on social representations shaped by personal preferences as well as on emotionally salient information deemed satisfactory⁴³.

Drawing on Simmel, Turnaturi emphasised the bi-directional and dialectical nature of the relation between emotion and reason, underlining how emotions are both outcomes of social interactions and active conditions that enable and shape sociability. Consequently, the encounter with *Alter* becomes both affectively charged and affect-generating⁴⁴. On this relationship, Luhmann stressed the importance of the emotional dimension of trust. He identified the pervading feelings of fear and trust as drivers of social relations, as one of the main consequences of the recognition of contingency growing in full modernity. Mediating social relations, trust is not opposed to rationality, but constitutes an emotionally based rational strategy that bridges the gap between the present and the future⁴⁵.

Emotions and sentiments guide judgment, perception, and action through culturally embedded belief systems⁴⁶. Accordingly, SA can be valuable in uncovering the emotional substratum of social behaviour, revealing the latent affective dimensions that precede reflection, contributing to the construction of shared meaning⁴⁷. This methodological attention to emotions marks a broader epistemological shift.

⁴² Solimano, 2005, 238-239. Translated from the original language: “spinta dalla fame la volpe cercava di prendere l’uva da un’alta vite, saltando con tutte le sue forze, ma non riuscì a toccarla; allora andandosene disse: ‘Non è ancora matura; non voglio coglierla acerba’”.

⁴³ Simon, 1957; Russo, 2015.

⁴⁴ Turnaturi, 1994.

⁴⁵ Luhmann, 1979; Engdahl and Lidskog, 2014

⁴⁶ Santambrogio, 2021.

⁴⁷ Bruni, 2021.

3. Computational Approaches to Emotions in Textual Data

3.1 From textual analysis to sentiment analysis

The mass communication research on press and political propaganda, carried out in the 1930s and 1940s, is largely responsible for modern quantitative text analysis development in sociology⁴⁸. Although rooted in early 20th-century sociological inquiry, such as Speed's pioneering newspaper analysis⁴⁹ and Weber's proposal for a systematic study of the press⁵⁰, automated text analysis has undergone major transformations in the digital era⁵¹. Drawing on these existing methodological traditions, contemporary developments in NLP and computational sociology have enabled the integration of both quantitative and qualitative approaches, allowing for the extraction of emotional patterns from corpora of textual data, contributing to closing the gap between quantitative and qualitative approaches to text analysis⁵².

There are many different text mining⁵³ techniques suitable for social science analysis, especially since social media platforms have become sources of information and viewpoints in the age of digital connectivity⁵⁴. Among them, SA emerges as a stimulating technique for unveiling latent emotional dimensions embedded in textual communication. By classifying linguistic expressions as positive, negative, or neutral, it offers a scalable way to capture the affective tone of texts, especially within social media environments, where massive amounts of emotional and polarised data are constantly produced⁵⁵. Thus, within this framework, SA appears as a valuable tool not only in commercial applications for brand reputation assessment or market analysis, but also in sociological research concerned with opinion dynamics and symbolic boundaries⁵⁶, enabling the extraction of insightful information, meanwhile reducing the possibility of errors on large datasets⁵⁷.

From a methodological perspective, SA techniques are generally divided into five main approaches. Rule-based methods rely on predefined sets of linguistic rules constructed by experts in the field relevant to the texts' contents.

⁴⁸ Krippendorff, 2004.

⁴⁹ Speed, 1893.

⁵⁰ Weber, 1910.

⁵¹ Macanovic, 2022.

⁵² Wiedemann, 2016.

⁵³ It is the process of deriving high-quality structured information from unstructured texts. See: Hotho *et al.*, 2005.

⁵⁴ Anderson, 2013.

⁵⁵ Gupta *et al.*, 2017; Shah *et al.*, 2024.

⁵⁶ Kennedy, 2012.

While they may ensure high accuracy in restricted contexts, they require extensive manual input and are difficult to adapt across domains⁵⁸. Lexicon-based methods operate through “affective lexicons”, dictionaries associating words with tonal polarity (positive, negative, neutral) and weight coefficients, allowing for interpretable sentiment classification⁵⁹. Supervised machine learning techniques train models on labelled datasets to classify new texts, generally achieving high performance but requiring substantial resources for domain adaptation. Unsupervised techniques, which attempt to infer sentiment structures from unlabelled corpora, are less commonly used due to their lower accuracy and interpretability, though they are useful in contexts where labelled data are unavailable⁶⁰. Lastly, hybrid methods combine diverse components of the aforementioned approaches to balance flexibility, accuracy, and transparency. Among these, Emotional Text Mining (ETM) emerges as a relevant model for sociological research, integrating Lexicon-based Analysis, Supervised Classification, and Factorial Correspondence Analysis with the researcher’s hermeneutical interpretation. Rooted in the tradition of socio-semantic analysis, this method allows for the mapping of emotional expressions within broader symbolic frameworks and cultural narratives. Taking into account the discursive structure of the text, it is adaptable to a variety of domains⁶¹, thereby bridging computational techniques and interpretive sociological inquiry.

3.2 Structuring emotion in textual data

To fully grasp how SA functions within sociological inquiry, it is essential to examine how opinions, the primary object of this approach, are structured and classified in computational models. The term opinion encompasses a wide set of concepts, including appraisal, evaluation, attitude, as well as information about the opinion’s target and the opinion holder. More specifically, the term sentiment refers to the underlying positive or negative affect implied by the opinion⁶². It is crucial to emphasise that every opinion is directed toward a target or entity. However, a chunk of text usually contains multiple sentences and multiple targets, thus, it is necessary to determine which sentiment refers to which component, as syntactic relations influence the associa-

⁵⁷ Rathee *et al.*, 2018.

⁵⁸ Vilares *et al.*, 2017.

⁵⁹ Taboada *et al.*, 2011.

⁶⁰ Rahimi *et al.*, 2019.

⁶¹ La Rocca *et al.*, 2023.

⁶² Liu, 2017.

tion between sentiment-bearing terms (e.g., amazing, bad) and their respective referents⁶³. Entities can be hierarchically structured into subcomponents and opinions may pertain to the whole or to specific parts⁶⁴. For instance, if the target is a social movement, the opinions expressed may pertain to its leadership structure, protest strategies or ideological framing. Opinions are generally categorised as regular, referring directly or indirectly to an entity, or comparative, involving evaluations between entities. Furthermore, opinions can be subjective or fact-implied. Within the latter category, a distinction can be made between those based on personal experience and those based on external data or reports⁶⁵. Additional distinctions include first-person vs non-first-person opinions, depending on whether the opinion holder is the speaker, and meta-opinions, which express evaluations about others' opinions.

The affective dimension of opinions is characterised by three features: type, polarity, and intensity. Sentiment types are divided into rational, based on logical evaluation, and emotional, based on non-tangible psychological responses. The latter are generally more intense, stereotypically more recognisable, and thus easier to detect⁶⁶. Polarity alone, whether positive, negative, or neutral, is not sufficient to capture the full expressive nuance of a sentiment and it is necessary to assess intensity, which reflects the degree or strength of the emotional stance. This is typically conveyed through lexical choices (e.g., “excellent” vs. “good”) and further modulated by linguistic devices such as intensifiers and attenuators, like “extremely” or “slightly”⁶⁷.

These distinctions not only are computationally significant but also carry interpretive value in decoding how social meanings are emotionally framed in discourse. In the analysis of discourse, especially in the context of social movements or political mobilisation, it becomes crucial to identify what aspects of a phenomenon elicit emotional responses, and to what degree⁶⁸. Mapping sentiment intensity contribute to reveal which elements of social life are emotionally “charged” and thus more likely to mobilise collective action or foster identification⁶⁹. Moreover, tracing how different actors express evaluative judgments, whether based on personal experience, factual reporting, or second-order opinions, may allow researchers to uncover power dy-

⁶³ Qiu *et al.*, 2011.

⁶⁴ Liu, 2017.

⁶⁵ Jindal & Liu, 2006; Zhang & Liu, 2011.

⁶⁶ Chaudhuri, 2006.

⁶⁷ Liu, 2017.

⁶⁸ Pratesi, 2023.

⁶⁹ Alberici & Milesi, 2013.

namics, symbolic boundaries, and competing moral narratives within the social field⁷⁰.

It becomes evident that sentiment classification must go beyond polarity, addressing the contextual variability of linguistic expressions. Sentiment lemmas range from absolute (awesome, awful) to relative (increased), and even implicit (amusement parks), requiring inferential understanding. Many sentiment lexicons still rely on absolute polarity, limiting the contextual sensitivity of SA⁷¹. To address this, resources, such as word association lexicons⁷², have been developed to capture implicit and context-dependent emotional expression. However, as highlighted by the ETM approach, lexicons alone are not sufficient and the researcher's interpretive capacity remains crucial for uncovering affective meanings embedded within co-occurrence patterns and broader discursive structures⁷³.

From a technical standpoint, sentiment analysis workflows, regardless of the approach, require a series of preprocessing steps to enhance data quality and analytical consistency. These include lemmatization⁷⁴, removal of *stop-words*⁷⁵, standardisation of case, and exclusion of punctuation, digits, or duplicate entries⁷⁶. Such operations are foundational for transforming unstructured text into structured data, enabling effective feature extraction. However, far from being merely routine computational steps, these processes contribute to defining the semantic boundaries of the corpus, determining what is rendered visible in the analysis⁷⁷. Therefore, even these highly technical phases of data cleaning play a key role in shaping the analytical space within which emotional meaning is interpreted. This emphasises how SA does not represent a neutral measurement tool, but a structured interpretive act, where technical choices have direct epistemological consequences on the inquiry.

Yet the challenges lie not only in lexical ambiguity, but also in the discursive complexity of text and social phenomena. The inherent ambiguity of natural language and the fragmented nature of individual opinions pose a longstanding methodological challenge in sociology, particularly in relation

⁷⁰ Kennedy, 2012; Baden *et al.*, 2022.

⁷¹ Liu, 2010; 2022; Joshi, *et al.*, 2017.

⁷² Mohammad & Turney, 2010.

⁷³ La Rocca *et al.*, 2023.

⁷⁴ It consists in the reduction of words to their base forms or roots, facilitating uniform lexical analysis and lowering the feature set's dimensionality. See: Barnaghi, *et al.*, 2016.

⁷⁵ They are high-frequency grammatical and textual elements that lack of semantic specificity. See: *ibidem*.

⁷⁶ Yuan *et al.*, 2016; Shah *et al.*, 2024.

⁷⁷ Gupta *et al.*, 2017.

to the evaluation of public opinion, an issue further complicated by the rise of the Internet and the exponential increase of textual data⁷⁸. Moreover, emotional meanings are rarely conveyed in isolation. Instead, they are embedded within broader semantic fields, metaphorical constructs, and culturally situated affective grammars⁷⁹. To reduce the risk of ambiguity, other text mining techniques such as Lexical Correspondence Analysis (LCA), can be valuable. By mapping co-occurrence patterns and clustering semantically proximal terms, it may facilitate a more situated reading of emotional expressions and target reference, especially in short and symbolically dense texts⁸⁰, such as those produced by activist campaigns. Furthermore, LCA can be used to identify a “lexicon of sentiment”⁸¹, which can confirm and strengthen the sentiment analysis outcomes. Moreover, as shown in a recent methodological contribution on ETM, cluster analysis and factorial correspondence analysis could serve as epistemological operations to identify latent structures of symbolic-affective meaning⁸².

As far as Emotion Detection is concerned, the matter is more nuanced. While SA offers a general overview of emotional polarities in textual data, Emotion Detection seeks to identify and classify the specific emotions being expressed⁸³. This distinction is crucial because emotions, unlike broader categories such as affect or mood, are discrete emergent mental states that often arise in response to specific stimuli⁸⁴. As such, emotion detection may offer a more accurate understanding of evaluative and expressive language. This deeper interpretive capacity is structured around emotion models, typically grouped into two categories. Discrete models, like Ekman’s⁸⁵, identify a finite set of primary emotions (sadness, happiness, anger, fear, disgust, and surprise), while dimensional models, like Plutchik’s “wheel of emotions”⁸⁶, are organised along continuous axes to allow for the emergence of secondary or blended emotional states. These models, particularly the second group, enhance analytical depth, enabling researchers to move beyond simple positive-negative dichotomies toward a more complex mapping of emotional items⁸⁷.

⁷⁸ Kochuieva *et al.*, 2021.

⁷⁹ Shah *et al.*, 2024.

⁸⁰ Glynn, 2014.

⁸¹ Melville *et al.*, 2009.

⁸² La Rocca *et al.*, 2023.

⁸³ Sailunaz & Alhaji, 2019; Hung & Alias, 2023.

⁸⁴ Chiarello, 2017.

⁸⁵ Ekman, 1992.

⁸⁶ Plutchik, 1982.

⁸⁷ Hung & Alias, 2023.

3.3 Methodological tensions between computation and interpretation

As the analysis of emotions in textual data continues to evolve, it becomes necessary to compare the strengths and limitations of different computational approaches. These methods bring to light a broader methodological issue concerning the reconciliation of scale and interpretive subtlety. On the one hand, NLP tools allow researchers to process and analyse vast quantities of data. On the other, emotions are multidimensional phenomena that resist reduction to mere polarity, simultaneously encompassing cognitive, physiological, and symbolic dimensions. This tension between computational scale and interpretive depth invites a rethinking of the classic opposition between quantitative and qualitative methodologies. Rather than reinforcing this divide, the integration of tools like SA or ETM support a dialectical synthesis, combining algorithmic processing and sociological interpretation. The goal is not to assign definitive emotional labels, but to trace affective tensions as they are articulated within specific discursive and symbolic frameworks. Indeed, sentiment is not simply detected but co-constructed through interpretive dynamics.

To clarify how these tensions are operationalised, the following comparative overview summarises the four main methods discussed above.

Tab. 1 - Comparative Overview of Computational Text Analysis Methods for Emotions.

Methodology	Strengths	Limitations	Best Use Contexts
Sentiment Analysis	High scalability; polarity detection; integration with social media APIs	Oversimplifies emotional nuance; limited sensitivity to context and cultural variation	Trend tracking; public opinion monitoring; campaign evaluation
Emotion Detection	Identifies specific emotional states; supports both discrete and dimensional models	Requires complex training data and emotion models; emotion labels may not generalise across cultures	Mapping affective profiles in discourse; analysing emotional climates in communities
Lexical Correspondence Analysis	Reveals co-occurrence structures; suitable for symbolic and short texts	Less automated; requires researcher interpretation; limited performance on noisy data	Discursive and symbolic analysis; context-specific language; small corpus studies
Emotional Text Mining	Combines SA with qualitative insight; adaptable to socio-semantic analysis; supports triangulation	Demands high expertise; pre-processing and clustering require interpretive judgment	Deep analysis of social discourse, cultural narratives, online collective emotions

As the comparative overview shows, while none of these approaches is methodologically exhaustive, each offers specific analytical affordances which can significantly enrich the inquiry into emotional discourse, if combined with a reflexive awareness of their epistemological assumptions.

Yet the integration of such tools into sociological research demands a critical epistemological awareness. Three key limitations persist in current computational approaches: the ambiguity between linguistic surface and social meaning, the tension between formalisation and interpretive flexibility, and the limited integration of substantive domain knowledge into algorithmic modelling.

SA classifiers may reflect underlying algorithmic biases, flatten emotional expression into narrow categories, and misinterpret sarcasm, metaphor, and culturally specific discourse. More broadly, the semantic reductionism inherent in automated classification systems can obscure contextual meaning. Consequently, the deployment of SA should be understood as a technologically mediated interpretive act.

Conclusive remarks

The theoretical perspectives on emotions in Sociology outlined above has sought to demonstrate that emotions, long marginalised within the dominant positivist and rationalist paradigms of sociology, are now being restored to the centre of sociological inquiry through both theoretical reflection and methodological innovation. As has been shown, the founding fathers of Sociology did not ignore the emotional dimension of social action: the collective effervescence (Durkheim), the affective action (Weber), the alienation seen as an emotional as well as material phenomenon (Marx), the impact of feelings in social relationships (Simmel) prove the centrality of emotions in the constitution of social life. The following generations of sociologists – seduced by the promise of positivist objectivity and the epistemological authority of cognitive models – marginalised emotions, often treating them as subjective residues incompatible with the pursuit of scientific rigor. Moreover, in more recent times, some contemporary authors – such as Hochschild, Elster, Turnaturi, Simon, and Collins –, called into question one of the foundations of sociology, namely, the idea of a purely rational social actor guided by a utilitarian and instrumental logic against which emotions play only a residual role⁸⁸. As shown above, emotions are not reducible to personal states

⁸⁸ Pulcini, 1997.

but appear instead as collective, relational, and structurally embedded phenomena. They are shaped by cultural “feeling rules” (Hochschild), they develop in interaction rituals (Collins), and they can activate collective actions (Pulcini). Understanding these dynamics requires methodological tools able to investigate both the micro and macro-levels, passing across the meso and relational level.

The rise and spread of sociology of emotions led to the recognition of emotions as crucial components of social order, social and collective action, highlighting how emotions work in making closer or contraposing individuals, aligning individuals and collectivities and mediating the relationship between psychological and social components⁸⁹. Thus, emotions become a relevant factor in understanding social network dynamics and social influence processes, as well as social change⁹⁰. In this framework, the practice of computational tools, such as SA and related techniques, represents a critical chance to enlarge empirical and theoretical perspectives in sociology by making analytically visible and interpreting emotions in the digital discourses that increasingly mediate social life and social relationships.

The analysis of emotions through computational text mining and NLP methods represents a turning point in sociological methods. SA, emotional text mining, lexical correspondence analysis, and emotion detection provide distinct but complementary avenues for tracking the affective underpinnings of discourse, they are able to easily accommodate the flows of textual data produced in digital contexts.

Computational methods scale efficiently to the level of millions of posts, comments, and reviews, thereby providing a macro-level standpoint on collective emotional climates while also enabling nuanced analyses of how sentiment is distributed across social groups, issues, and temporal cycles. This capacity aligns with Collins’ notion of interaction ritual chains, in which micro-level affective exchanges accumulate into meso- and macro-level solidarities, antagonisms, and mobilisations⁹¹. SA, in its capacity to map emotional flows across scales in an open real-world environment without external interferences, thus emerges not as a replacement but as a key complement to interpretive and qualitative approaches. Within this interpretive framework, the adoption of computational social sciences methods, as ETM, should be viewed as a valuable methodological contribution to the comprehension of how the media discourse contributes to the social construction and crystalli-

⁸⁹ Ahmed, 2010; Szulich-Kałuża, 2023.

⁹⁰ Bisio *et al.*, 2016; Pratesi 2023.

⁹¹ Collins, 2004.

sation of emotional landscapes. Moreover, SA supports researchers in tracking changes over time, comparing emotional climates across contexts, and relating them to offline dynamics. In this way, it emerges as more than a technical tool: its epistemological meaning lies in enabling sociology to empirically reconnect emotions and actions. As shown in the paper, it can help to reveal how emotions influence opinion formation, group cohesion, and social mobilisation, providing a real-time insight into ongoing social debates, protests, or crises. Therefore, SA symbolises a great opportunity for epistemological reorientation toward the recognition of emotions as constitutive elements of social reality.

However, its adoption within sociology requires critical epistemological caution. Language is not a transparent medium: ambiguity, irony, metaphor, and cultural specificity should be carefully pointed out. Automated classification reduces complex discursive phenomena to polarity scores of positive, negative, or neutral, risking flattening the multidimensional richness of emotional life. Moreover, sentiment lexicons may reproduce cultural biases when applied to other languages and communities, thereby introducing distortions rather than clarifying meanings. As has been argued, SA is never a neutral measurement, but a structured interpretive act mediated by methodological choices. This emphasises the necessity of maintaining methodological reflexivity and resisting the temptation to treat computational outputs as self-sufficient indicators of social reality, also considering how machine learning models may act as “black boxes,” restricting interpretability and undermining sociological reflexivity. The above limitations suggest to not use SA as a definitive measurement but as one of the interpretive lenses in sociological research, triangulating with other non-standardised methods.

The integration of computational techniques into sociological inquiry – in combination with classical methodologies – should be best understood as a dialectical process rather than a unidirectional transfer of tools from computer science to sociology. SA provides sociology with unprecedented analytic leverage to identify affective trends, symbolic boundaries, and mobilising emotions across digital arenas. Sociology provides SA with the theoretical depth and interpretive sensitivity necessary to avoid reductionism. Thus, it should be situated within the interpretive frameworks of sociology, insofar as emotions are always embedded in cultural scripts, institutional contexts, and power relations, that cannot be reduced to mere polarity scores. This epistemological perspective calls for the development of hybrid and mixed methodologies, in which SA and ETM complement classical methods.

If reason and emotion are not antithetical but dialectically intertwined because emotions are both shaping and being shaped by rational strategies of

action⁹², SA could be considered not just a new methodological tool but an epistemological shift toward the recognition of feelings as key elements of human social rationality.

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⁹² Turnaturi 1994; Luhmann 2018.

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ABSTRACT

This paper aims to highlight the potential of computational text analysis tools, particularly sentiment analysis, in contributing to the ongoing sociological discourse on emotions. Starting from a theoretical overview of the role of the emotional dimension in some relevant classical and contemporary sociological theories, this article seeks to contribute to the field of the sociology of emotions, which is gaining renewed relevance, by providing a stimulating suggestion regarding an interdisciplinary methodology that can be used to investigate emotional display in an online context.

Sentiment analysis is the main method presented in this paper, along with Lexical Correspondence Analysis, Emotional Text Mining and Emotion Detection, to assess and categorise opinions and emotions conveyed through text. These methods, rooted in natural language processing and text mining, allow the categorisation of online discussions on various topics, particularly regarding social issues. While posing some methodological challenges, these approaches offer promising opportunities for developing a more integrated understanding of emotions in digital social life.

Questo articolo si propone di mettere in luce le potenzialità degli strumenti di analisi computazionale del testo, con particolare attenzione alla *sentiment analysis*, nel contribuire al dibattito sociologico contemporaneo sulle emozioni. Muovendo da una rassegna teorica del ruolo della dimensione emotiva in alcune tra le principali teorie sociologiche, sia classiche sia contemporanee, il contributo si inserisce nel campo della sociologia delle emozioni, oggi oggetto di una rinnovata attenzione, offrendo una proposta metodologica interdisciplinare volta a indagare le espressioni emotive nei contesti digitali.

La *sentiment analysis* costituisce il metodo principale discusso nell'articolo, affiancata dalla *Lexical Correspondence Analysis*, dall'*Emotional Text Mining* e dall'*Emotion Detection*, utilizzate per valutare e categorizzare opinioni ed emozioni espresse nei

testi. Radicati nel *natural language processing* e nelle tecniche di *text mining*, questi approcci consentono di analizzare le discussioni online su una vasta gamma di temi, in particolare quelli legati a questioni sociali. Pur presentando alcune sfide metodologiche, tali strumenti offrono prospettive promettenti per sviluppare una comprensione più articolata e integrata delle emozioni nella vita sociale digitale.