International Journal of Arts and Social Science www.ijassjournal.com
ISSN: 2581-7922,
Volume 8 Issue 11, November 2025

Can Emotions Be Calculated? – An Analysis Based on the Phenomenology of Emotion

Abstract: In the field of Artificial Intelligence, the rapid development and application of affective computing has posed a serious challenge to affective phenomenology, which is mainly centred around the affective computing puzzle, the affective understanding puzzle, and the affective deception puzzle. A comprehensive response to the challenges posed by affective computing from the standpoint and approach of affective phenomenology becomes the theme of this study. In the process of responding to the challenges, the theoretical foundations of affective computing (cognitive science and psychology) are analysed and evaluated from the standpoint and approach of affective phenomenology, the gains and losses of affective computing research are evaluated, and it is considered whether the phenomenology of affect can open up a possible new vision and direction for affective computing?

Keywords: affective computing; phenomenology; emotional deception

I. Theoretical Foundations of Affective Computing

Computer scientists are increasingly aware that emotion is the grammar of human social life, and the recognition and expression of emotion is an important channel for information interaction and a core representation of human psychological and physiological activities. In a human-machine symbiotic society, enabling machines to have the ability to perceive, recognise, understand and express emotions has become an indispensable and important attribute of intelligent machines. Marvin Minsky, who pointed out that it is not whether an intelligent machine can have emotion, but whether a machine without emotion can achieve intelligence (*The Society of Mind*, 1985), specifically analysed the six dimensions of creating an emotional machine (*The Emotion of Machine*, 2016). Daniel Goleman, who adopted the concept of emotional intelligence proposed by John Mayer and Peter Salovery in 1990, summarised emotional intelligence as five dimensions of competence: the ability to recognise one's own emotions, the ability to manage emotions appropriately, the ability to be self-motivated, the ability to recognise the emotions of others, and the ability to manage relationships ability to manage relationships (*Emotional Intelligence: Why Emotional Intelligence is More Important than Intelligence*, 2010). Rosalind W. Picard, director of the MIT Media Lab, published *affective computing* in 1997, which she defined as computing that is related to, derived from, or able to influence emotions. Professor Wang Zhiliang of the University of Science and Technology Beijing proposed the concepts of 'artificial psychology' and 'artificial emotion', and he believes that the research of affective computing is to try to create a kind of computer that can sense, recognise and understand human emotions, and can make intelligent, sensitive, and effective decisions in response to human emotions. emotions and make intelligent, sensitive, and friendly responses to them. (*Artificial Emotion*, 2009)

Emotional robots/intelligent systems with emotional computing as the underlying technological logic are triggering profound changes in human social life, and the Massachusetts Institute of Technology (MIT) in the United States has proposed nearly 50 kinds of emotional computing application projects. Affective computing can effectively improve the level of social governance. Taking the biometrics field as an example, by monitoring the facial video streams of people in crowded areas such as airports, high-speed railway stations, exhibition centres, etc., affective computing can be used to screen individual aggressiveness and nervousness, and help the security personnel to discover potential unstable factors. Affective computing shows great application prospects in medical rehabilitation, talent assessment, public opinion monitoring, distance education, elderly escort, e-commerce evaluation, driving safety, financial risk assessment, and other fields. The Institute of Software Research of the Chinese Academy of Sciences and the China National Institute of Electronic Technology Standardisation

(CNIETS) have jointly led the development of the Information Technology-Affective Computing User Interface (*ISO/IEC 30150-1:2022 Information Technology-Affective Computing User Interface (AUI)). Information Technology-Affective Computing User Interface (AUI)-Part1:Model*) international standard was published by the International Organisation for Standardisation (ISO) in June 2022, which is the world's first international standard on emotional interaction. Relevant research teams and laboratories have achieved remarkable research results and applications in affective computing, and Zhiliang Wang (2009), Xuejing Gu and Yucheng Guo (2015), Xie Lun (2017), and Min Wu, Zhentao Liu, and Liumeng Chen (2018) focused on discussing and demonstrating the development results of affective computing in recent years.

Emotional consciousness and emotional behaviour analysis have been the subject of phenomenology. Phenomenologists such as Husserl, Scheler, and Heidegger have provided a wealth of relevant theoretical resources. Scheler incorporated his phenomenological analysis of emotion into his answer to the question "What is man?", seeking to discover the essence and meaning of various personal emotional feelings based on the "order of love," enabling people to live in accordance with the call of their hearts based on an understanding of the meaning of their emotions. Scheler believed that within the a priori order of love in the human heart, objective values and their objective hierarchical order are presented, and the meaning of life is precisely based on this objective hierarchical order of values. Heidegger pointed out that the emotions of the present state construct the openness of the world of Dasein in ontology; human existence is always an emotional existence, and emotion is a mode of being-in-the-world. He was the first to extract emotion from psychology and cognitive science and incorporate it into the ontological-existential analysis of human beings.

From the development trends of artificial intelligence and affective computing, post-phenomenological philosophers of technology have consistently paid attention to and participated in the research and development process. Don Ide, in discussing the relationship between humans, technology, and the world, specifically analyzed four types of relationships: embodiment relations, hermeneutic relations, alterity relations, and background relations. Dreyfus, starting from Heidegger's fundamental ontological position, proposed that artificial intelligence research should not only consider rationalist cognitive methods and computation, but also the "embodiment" relationship between humans and the world. This means that artificial intelligence must be immersively embedded in the world like a human being, thus initiating a Heideggerian direction in artificial intelligence research. The Dreyfus brothers, in their 1986 book *Mind Beyond Machine*s, proposed a five-stage model of skill acquisition (beginner, advanced beginner, competent, proficient, and expert stages). In their 2000 book *On the Internet,* they added a master stage. The Dreyfus model incorporates a situational element, defining an expert as someone who can elicit appropriate emotional responses through the body and unconscious intuition within a particular domain. They argue that intelligence does not depend on theories about the world and therefore cannot be acquired or modeled through rules within computational systems.

There has also been an early focus on the phenomenology of emotion in the national academy. Following the position of Husserl's phenomenology of consciousness, Professor Ni Liangkang distinguishes emotions as intentional and non-intentional emotions, and he analyses the order of the heart from the perspective of Husserl's and Scheler's phenomenology, carrying out a kind of phenomenological teleological research, or the phenomenological research of moral consciousness (*The Order of the Heart: Possibilities of a Phenomenological Teleological Research*, 2010). Professor Leung Ka-wing discusses the theory of emotion in Heidegger's Being and Time, and he re-defines and translates the key terms of the theory of emotion in Heidegger's Being and Time: Befindlichkeit (Sensationality), Sichbefinden (Self-feeling); Stimmung (Mood), Gestimmtheit (Sentimentality) (M*oods and the World: The Affective Theory of Being and Time*, 2019). Regarding Scheler's theory of emotion, many scholars have analysed and discussed it from multiple perspectives, such as emotional innateness, emotional intuitionism, and emotional ethics, etc. Professor Zhang Zhiping's *The Nature and Meaning of Emotion: An Introduction to Scheler's Phenomenology of Emotion* (2006), which was published on the basis of his doctoral dissertation, is the earliest scholarly monograph on Scheler's emotional phenomenology to have been studied holistically by the Chinese academia. Professor Zhang Wei discusses the foundational relationship between ‘love’ and ‘sympathy’ at the level of innate value order and moral practice, the theory of personality generation as the order of love, and the phenomenology of shame in Scheler's phenomenology of shame, both in the sense of shame of the body and shame of the soul. can give rise to a phenomenological, innate ethics of shyness, among other

things (*Qualitative Innate and Personhood Generation - A Reconstruction of Scheler's Phenomenology* of *Qualitative Value Ethics*, 2014). Regarding the discussion of the phenomenology of emotions in the philosophy of AI, Professor Yingjin Xu focuses on the question of the intentionality of generic AI and phenomenology, the relationship between artificial emotions and phenomenology, and the challenges and inspirations of continental phenomenology for the study of artificial emotions (*Fifteen Lectures on the Philosophy of Artificial Intelligence*, 2021).

II. The Problem of Emotion in the Phenomenology of Emotion

By sorting out and analysing the history of the development of the phenomenology of emotion, we will find that the problem of emotion has always been the basic problem of philosophy. Greek philosophy aims at the pursuit of peace and harmony of the soul, while emotion signals the soul's unrest and disharmony. Since Plato and Aristotle, passion has been regarded as an element of discord in the soul (ψυχή), a disease or strife of the mind. Descartes argued that emotion is an action of the body that works as long as movement does not cease in the heart, blood, or spirit. Spinoza constructed a 'mechanics of human nature' in which emotions can be completely restrained through the cognition of human reason, and the ability to restrain them is a triumph of reason and a manifestation of freedom. It can be seen that in the rationalist tradition of Western philosophy, emotion is a destabilising factor of the soul that needs to be treated and overcome.

The phenomenology of emotion is the first time that Western philosophy has faced the problem of emotion affirmatively. Husserl discusses the problem of emotional intention in the phenomenology of consciousness; Scheler discusses the problem of emotion in the phenomenology of value, where moral value is based on emotion, and emotion is embedded in moral value. For example, shame is the affirmative sense of value, resentment is the negative sense of value, and love and sympathy are the dominant emotional forces in the innate value order; Heidegger, on the other hand, regarded emotion as the main ontological element of Dasein's being-in-the-world, believing that human existence has always been an existence accompanied by emotion. Scheler believed that "innate feelings" are the foundation of all value experience; value belongs to the innate and substantial realm, to the emotional aspect of the spirit. He defined the innate in a phenomenological sense as "what is given," presenting itself through direct intuition. In the "non-logical aspect" of spiritual life—that is, its feelings, preferences, love, and hate—there exists an "innate and substantial" realm, where "our entire spiritual life (not just objective cognition and thinking in the sense of existence) possesses 'pure' (based on its essential content and independent of the facts of human organization) behavior and laws of behavior." Even in the realm of spiritual emotions (feelings, preferences, love, hate, and desires), there is a primordial, innate meaning, a meaning not borrowed from 'thought'. Scheler's phenomenology of emotion reveals the "logic" or "order of the mind" of emotional experience itself. Heidegger named emotion and feeling the "presentational condition" (Befindlichkeit) of Dasein's "Being-in-the-world-being," and provided a detailed ontological-existential analysis of it. He argued that Dasein's being-in-the-world existence is always accompanied by emotion; understanding is emotional understanding, and depravity is also emotional depravity. Emotion is fundamentally an existential phenomenon, not a psychological one. Different presentational conditions reveal different existential states of Dasein. "Fear" reveals the everyday being-in-the-world existence of Dasein, that is, Dasein's inauthentic existence. "Awe" (Angst), on the other hand, reveals Dasein's authentic existence. Emotion, as one of the existential structures of Dasein, has an initiating function: (1) Emotion opens Dasein as a thrown state; in emotion, Dasein is brought before its being as it is. (2) Emotion opens up the whole of Dasein's being-in-the-world and first makes it possible to move toward... (3) Emotion opens up things within the world; Dasein, with concern (Besorgen) and a holistic perspective (Umsichtig), gives the encountered things within the world the character of being touched (Betroffenwerden).

III. The Challenge and Response of Affective Computing

While a traditional AI is a machine or software system that can sense its surroundings and operate autonomously to fulfil the purposes of the designer and the user, an emotionally capable AI will be more credible, accurate, effective and attractive in human-computer interaction. The key technical aspects of affective computing are emotion recognition and emotion expression, and the core is modelling, which is currently dominated by

discrete models, dimensional models, cognitive evaluation models and machine learning emotion recognition models. The challenges brought to the phenomenology of emotion are: firstly, the difficulty of emotion computation. Second, emotion understanding and 'empathy' problem. Third, emotion expression and emotion deception.

First, is emotion computable? In the early stage of AI research, when symbolism was dominant, computer and cognitive scientists did not pay attention to emotion. Nowadays, with the development of AI, connectionism and behaviourism are dominant, and more and more cognitive science and neurobiology studies show that cognition and emotion are inseparable, and emotion not only participates in cognitive activities, but also plays a role in decision-making, perception, creation, etc., which is a way of knowing in itself. It is a way of knowing in its own right. Since Picard proposed the concept of affective computing in 1997, emotion recognition has made great strides, and the role of emotion in human-computer interaction has received more and more attention, but the question that haunts phenomenology remains, can emotion be computed? The answer to this question involves emotion definition and emotion understanding.

Second, emotion understanding and 'empathy'. According to Scherer, there are four types of emotional experiences between people: emotional empathy, sympathy, psychological contagion, and emotional identification. Obviously, human emotional understanding and empathy are two completely different processes from the emotional understanding and empathy simulated by emotional computing systems, which makes it a difficult question whether moral values based on emotions are applicable to emotional computing systems and emotional intelligences, and the uncertainty and incommensurability of the emotional understanding between different cultures, languages, and communities, and how emotional understanding occurs between emotional computing systems with different corpora is an even more difficult question. How emotion understanding occurs between emotion computing systems of different corpora is even more of a difficult problem.

Third, emotion expression and emotion deception. Social emotion expression is inherently strategic, and the ability to simulate social emotions in human-computer interaction is also bound to face problems such as emotion deception and emotion manipulation. One is the ethical problems caused by artificial intelligences and emotional computing systems using human emotional weaknesses to deceive or manipulate human emotions, and the other is that although advanced emotion recognition systems have been able to effectively gain insights into physiological changes brought about by deceptive activities such as nervousness, fear, and excitement, the emotional expressions and emotional deceptions of highly trained secret agents, psychologists, and actors are an impossible corpus to populate for an emotion recognition system. is an impossible corpus-filling problem.

In order to deal with the above challenges, the development of the phenomenology of emotion proposes the phenomenological analysis of emotion based on 'events'. Whether emotional intelligence is based on 'events' or on emotion psychology and emotion cognition theory is completely different. The 'event' does not come from and point to a specific entity or object, but comes from and points to the whole event situation, i.e., the realm or the world. We propose an event-based phenomenology of emotion, in which 'affective events' require that affective computation must take into account the environment, the worldly, embodied nature of practical activities. Emotion is meaningless outside of a specific context, and affective events enable affective computation to advance from the syntactic stage to the semantic stage, making a computer system or a robot more like an emotional human being. Taking the event-based phenomenology of emotion as a horizon, the science of artificial intelligence is a new type of experimental science, which, although essentially mathematical, relies on devices such as networks, information memories, and central processors; every new programme compiled and every new machine built is an experiment, a question posed to the natural world, the world of human life, which is explored empirically in order to form new understandings and interpretations.

(1) The affective computing model must be based on the use of events as triggers to generate emotions. Whether or not a certain consequence of a specific event is consistent with one's own wishes/goals triggers happiness emotions (happy or sad), evaluation of the possible consequences of an event triggers emotions based on the outlook (hopefulness, fearfulness, relief, fearfulness of coming true, relief, disappointment), and emotions towards the fate of others (happy for it, resentful, gloating, sympathetic) are also generated when evaluating whether or not the consequences of the event are consistent with other people's goals. whether they are consistent with the goals of others, emotions about the fate of others are also generated (happy for, resentful of, gloating

over, sympathetic to).

(2) Event-based redefinition of emotion and emotional understanding. How does the phenomenology of emotion confront the human lifeworld that AI is involved in constructing? In such a human-technology symbiosis world, is the phenomenology of emotion still able to answer and define what is pleasure and what is pain? Based on Boden's rebuttal of Searle's 'Chinese house', we distinguish between first-order and second-order understanding. Emotion robots can also understand pleasure or pain, but the two understandings are different. A similar situation occurs between a toothache sufferer and a dentist's understanding of a toothache, and the additional difficulty relates to two factors: a) behavioural responses to the same event are different for different individuals in different affective contexts, and b) emotions have individual sensitivity variability.

Artificial Intelligence and Affective Computing have profoundly changed the human life world, in order to be able to grasp, understand and explain this new life world, this topic distinguishes between two kinds of understanding (first-order understanding and second-order understanding), and three life worlds (the world of common sense, the world of concepts, and the world of the source-primary phenomena) as a prerequisite for discussion. Affective computing, which constructs the conceptual world and uses artificial language, belongs to second-order understanding; affective phenomenology, which defines emotions in the world of source-primary phenomena and provides explanations, belongs to first-order understanding. Human-technology interaction and symbiosis constitute the world of common sense, linking humans and AIs through natural language. The phenomenology of emotion's response to the challenge of affective computation occurs in the world of common sense, where the question of the computability or non-computability of emotions is only meaningful in the world of common sense. Similarly, the foundational role of the phenomenology of emotion for affective computing can only occur in the world of common sense, where its goal is to provide affective robots with a usable and reliable representation of common sense knowledge and natural language, and thus is independent of the kind of process that characterises human affective activity.

IV. Summary

First, the phenomenological basis of emotion for affective computing. Emotional intelligence is a simulation of human emotions, but this does not mean that the emotional processes of the two have to be identical; rather, it means that emotional intelligences effectively realise the goals achieved by human emotional activity. Human beings are emotional animals, and emotional intelligences achieve intelligence by simulating human feelings; they simulate emotional phenomena, emotional events, rather than the order and disorder of the human heart. Thus, the phenomenology of emotion represented by Scheler and Heidegger constitutes the philosophical foundation of affective computing.

Second, the future development direction of affective computing. With the iterative development of artificial intelligence and the emergence of the global brain, will embedded cognition make human cognition intelligent and exist in the form of 'human-technology symbiosis'? Can affective computing effectively participate in emotional stimulation and emotional assistance in the biological, neuroscientific, and medical sense, so that an emotional intelligence can become a moral intelligence? Affective computing, with its theoretical foundation in the phenomenology of emotion, will allow AIs to possess knowledge, beliefs, intentions, responsibilities, values, and emotional capacities in addition to autonomous, social, reactive, and spontaneous capacities.

Third, computer systems possess the conditions and foundations for emotions. Artificial intelligence has been machine-driven since its inception, and whether it is a way for machines to mimic the workings of the human brain or a unique way to create another kind of intelligence, it is an attempt by humans to make the machines themselves possess intelligence. In this process, human beings are outside the machine, once the design of the programme, human beings basically no longer intervene in the operation of the machine itself. In the future, once a computer system generates intentionality and free will, then it will gradually possess autonomous emotions. When we extend emotional beliefs to a wider range of intelligences, there is no fundamental difference between a computer and a human being in this sense. An artificial intelligence possesses certain emotions or beliefs or desires, which it uses to predict how it will act next from a certain position of intention. The emotional system of a computer system can be updated by adding, modifying and deleting propositions in the database, which can be

done by a human being, but it can also be done by the machine itself through machine learning, by interacting with the operating environment and the data, so as to realise the 'self-modification', and then the automatic execution of the algorithms, which is in this sense realised. Autonomous emotion regulation and display.

Fourth, educating computer systems about death. The "existence" of artificial intelligence in the sense of "Dasein" transcends the connotation of an entity in the sense of "existence." The core of "Dasein" lies in the act of being; without the connotation and meaning of existence, only time remains. Dasein is temporal, and it is precisely this temporality of Dasein that makes time truly temporal, and it opens up "world time," revealing a continuous world, from which history naturally arises. Human development and change are historically traceable, and so is the development of artificial intelligence. When a person is an individual, they are mortal and finite; when humanity is a collective entity, the relativity of life and death becomes blurred, and humanity becomes transcendent and eternal. Unlike the human body, when an artificial intelligence entity exists as "Dasein," it is an independent individual that begins to learn and evolve on its own. The existence of artificial intelligence does not depend on a physical body, and the information, data, and everything else it carries will not disappear with the disappearance of the physical body. The definition of the material subjectivity of AI is fuzzy, it can be a subject or something else. Because of its extremely strong interactive transferability, even if a single subject disappears, other subjects can continue to pass on everything about it just in addition to the external material content. Thus the AI transcends the individual human being and has a future, a past and a present, so that life is death and death is life.