Virtual Affective Consciousness and Raw Social AI

Wuming Pan & Ying Yang
Sichuan University, Chengdu, Sichuan Province, China

ABSTRACT: In this paper, we attempt to philosophically eliminate the conceptual problems in developing affective artificial agents, and put forward an industry and research direction called Raw Social AI. We first provide a set of laws for mind understanding, and then suggest an ontology of affect so that we can unify the representation and construction view with embodied view. We address the problem of qualia supply. We discuss how to implement the initiative of affective agents and suggests that initiative be the cue of utility of affective agents. We advocate that the initiative of affective agents must be realized as social services. Using AI to record and summarize people's emotional reactions in the real or virtual world is called raw social AI. In such a popular metaverse scenario, it is necessary for us to establish the infrastructure of Raw Social AI and conduct numerous experimental studies.

1 INTRODUCTION

There is an increasing interest in understanding, designing, and evaluating on exploiting emotions and affect in sociotechnical systems, as reflected in the latest field guide book [Jeon, 2017, a] and recent papers appearing in the professional affective computing journal [IEEE, 2018]. There is a lot of needs to develop affective artificial agents [Scheutz, 2012]. Microsoft has provided emotional computing services through the Azure cloud, which is to recognize human emotions through the facial expressions of people in pictures and videos [Microsoft, 2018]. Emotion and affect recognition through facial expressions, gestures, speeches, and cognitive processes makes it possible to construct emotions as important user input to system [Hudlicka, 2017]. Affective elements also allow for a more holistic view to understanding the human–machine system [Jeon, 2017, b]. The goal of affective computing is to design a computer system that can recognize and express affect, that can have emotions and use them in making decisions [Picard, 2010].

However, there are several obvious hurdles to developing affective agents. Scheutz [Scheutz, 2012] has summarized them as conceptual challenges, architectural and implementation challenges and evaluation challenges. Although there are already several theories of computational affective modeling [Reisenzein, et al. 2013], e.g., discrete or categorical theories, dimensional theories, and componential theories, one cannot completely agree on the cognitive concepts about affect there. For example, one cannot clearly differentiate the concepts emotion, affect, mood and feeling, hence it is more difficult to design affective agents to correctly express them. Though affective control mechanisms of agents can benefit agents' performance, there is lacking rsearches in relating affective control mechanisms with agents' work and implementing their utility. Sometimes, these problems lead to an embodied view of emotion and affect, together with other cognition problem [Shapiro, 2014; Borghi et al., 2014].
In this paper, we attempt to philosophically eliminate the confusion in developing affective artificial agents. We suggest that consensus on intrapsychic cognitive concepts about emotion and affect is impossible. Furthermore, there is no necessary for us to develop affective agents on that consensus.

AR is the next generation computing platform. Emotional preference is the key to actual decision-making [Cozolino, 2006]. The term metaverse comes from the buzzwords of novels and movies and refers to various virtual experiences, environments, and assets online. This word implies the next development direction of the Internet. Virtual reality and augmented reality are the main technologies of metaverse. Metaverse allows people to work and socialize in the virtual world, for example, using digital avatars to participate in work meetings to construct some important experiences. Using AI to record and summarize people's emotional reactions in the real or virtual world is raw social AI.

We first provide a set of laws for mind understanding, which are the laws of undetectability, initiative, deferent names and fakeness. Then, by this code for mind under-standing, we suggest an ontology of affect so that we can unify the representation and construction view with embodied view.

Finally, we address the problem of affective qualia supply, then we discuss how to implement the initiative of affective agents and suggests that initiative be the cue of utility of affective agents. We point that the affective agents cannot have initiative unless the initiative is provided as services.

2 THE CODE FOR MIND REPRESENTATION

There are still some philosophical issues in AI, e.g. consciousness and meaning, but AI researchers do not have to leave these philosophical questions to philosophers. As far as philosophical AI issues are concerned, past thinkers are as profound as contemporary scholars, and AI researchers should be as professional as philosophers. There are four laws for mind understanding and representation.

2.1 *The Law of Undetectability*

Some philosophers think that mind has qualitative conscious states, which is called qualia. Following Searle [Searle, 2004, p84–85], qualia are the inner experiences which cannot have a functionalism account, as argued in the old thought experiment spectrum inversion. We use the law of Undetectability to name the hypothesis that the inner states and experiences in one's mind cannot be directly detected. By this law, I think that modern science cannot judge that what the relations and structures of qualia in mind are, and even what the inner states are.

Note the neural mechanisms research [Aday et al., 2017] cannot falsify this law. We cannot detect the qualia of color by examining the neural system in the brain, as argued in spectrum inversion.

Hence the observations about mind of any great ancient thinkers are as valuable as the descriptions given by modern philosophers, psychologists and scientists. I will then refer some Chinese ancient thinkers' discourses in this paper.

2.2 *The Law of Initiative*

Some people think that without determinism, the exploration of decision-making models will be meaningless [David, 2019]. Though one can receive requirements and commands from others, the mind initiate thinking and body behavior by itself. Sometimes, ones' mind can be significantly affected by other peoples or things, but we should think the minds hold its initiative except suffering illness. Chinese ancient thinker Xun Zi (荀子, 313 BC - 238 BC) wrote:

"（心者）出令而无所受令，自禁也，自使也，自夺也，自取也，自行也，自止也。"

These sentences are copied from the book [Jue Zhang, 2012]. These sentences can be translated as:

"The mind issued orders but did not accept orders, and it prohibits and drives to do something on its own, discards and accepts things on its own, acts and stops on its own."

Follow the great thinker Xun Zi, we must acknowledge that initiative is the most important trait of mind and virtual mind.

2.3 *The Law of Different Names*

By the law of undetectability, any object in mind cannot be detected by others. Therefore, if two objects with different names have the very same relation, at the very least through the language description, with other objects concerned, the two objects will be considered having same concept position in conceptual system but have different names. Chinese ancient philosopher Lao Zi (老子, about 571 BC - 471 BC) wrote:

"无，名万物之始，有，名万物之母……此两者，同出而异名，同谓之玄。"

These sentences are copied from the currently edited and annotated book [Shangkuan Rao, 2016]. These sentences can be translated as:

"Wu (nothing) is used to name the beginning of all things, You (being) is used to the name of the mother of all things… Both of Wu and You are originated identically but they are different names, they together are called as Xuan."

Lao Zi described that Wu and You has same position in the conceptual system, i.e., they both connected with all things, but they have different name.

We use the law of different names to address that the difference of some concepts cannot clearly specified in a conceptual system, especially when we want to build the cognitive model of mind. The inner of a mind is undetectable; thus, we only can relate them with outer objects and processes.

2.4 *The Law of Fakeness*

Many mental states have intentionality, i.e., "they are directed at or about or of objects and affairs in the world", and "meaning is one kind of intentionality" [Searle, 1983]. The world for a specified mind really contains the inner world of the mind. Once one is thinking meaning intentionality itself, the intension then is direct at the meaning itself but not what the meaning intends. We never can talk the real objects, we just talk the meaning and intent of the objects, even when we have not perceived the objects. The intent is the fakeness when it is intent to an intent, for the latter is undetectable, thus it can never be really understood or known. Which we call as the law of fakeness. Chinese ancient thinker Gongsunlong Zi (公孙龙子, 320 BC - 250 BC) wrote:

“物莫非指，而指非指。”

This sentence is copied from the currently edited and annotated book [Kejian Huang, 2012]. This sentence can be translated as:

“Things are all intended or pointed (in mind), but the intending or pointing are not intended or pointed (in mind).”

And in the Chinese Tang Dynasty, Zen Master Xuanjue (玄觉, AD 665 ~ AD 713) wrote:

“夫以知知物，物在知亦在；若以知知知，知知则离物。”

These sentences can be found in the 38th volume of the currently edited book [Jifu Lan, 2004, page 65]. I just only modified the punctuations. These sentences can be translated as:

“When one exploit his/her knowing ability to know some object, the knowing exists when the object exist; when one exploit his/her knowing ability to know the knowing, the knowing of knowing object have detached from the object.”

Some other thinkers in ancient China also expressed similar perspectives and experiences.

The high-level cognitive processes necessarily are fake.

3 IS EVERYTHING MEANINGLESS?

Does these laws mean that everything is meaningless? This simply means that the ultimate meaning we mean in language and consciousness is the qualia.

Meaning is not knowledge; the semantics of words ultimately point to meaning. There is no definition of purely cognitively abstract natural language words. These terms, such as “meaning”, “intelligence”, “consciousness”, “value”, “beauty” and “time”, cannot be defined as ontologies, objects, processes, indexes, etc. Completely defined These words must use the meaning of the words themselves, and therefore can only be defined by cycles, and there is no static definitions of them. Meaning is the reflection of self-consciousness. When we talk about affect, we really talk about the meaning of affect. The meaning of affect is mirrored in mind.

The ontologies, which are developed in AI, which are used to defined what things in world are, cannot be directly related to the qualia. The real consolidation of the natural language ontologies is impossible. The Ontologies are really related to meaning, they capture meaning with the ontological connections of words.

We can simply think that through ontologies the qualia is combined into meaning. When we are talking or reading, meaning does not directly convey to each other. We deliver the connections in ontologies to each other, and then one’s inner qualia are combined again. We don't know whether there are the same qualia or the same number of qualia in different people’s consciousness.

4 AN INTRAPSYCHIC ONTOLOGY OF AFFECT

Any description of mind is intentionality intrapsychic, the intentioned is undetectable. Even though, we can express some temporarily conceived theorems, proofs and definitions. We call these kind of theorems, proofs and definitions are fake. For example:

Fake Theorem: intentionality has qualia.

Fake Proof: The qualia is the inner experiences, and the intentionality can be experienced, hence the intentionality has qualia.

Fake Definition: The quale of intentionality is called qualintent.

Then we can suggest a simple but undetectable ontology of affect, as illustrated in figure 1.

Though one can receive requirements and commands from others, the mind initiate thinking and body behavior by itself.

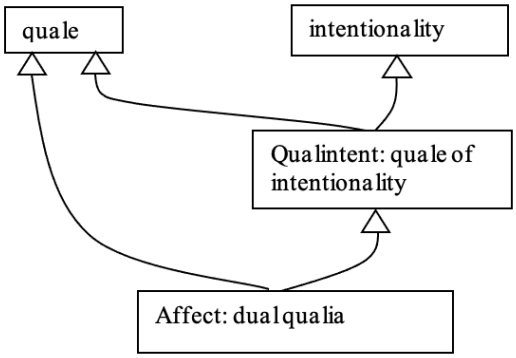

Figure 1. A Simple but Undetectable Ontology of Affect

5 AFFECTIVE QUALIA SUPPLY

With the advancement of AI and computing technology, people will increasingly live in a virtual world, as in the movie "Ready Player One." This brings back two problems. One is the lack of real-world experience, and the other is that the virtual world may be different. These problems may be called qualia lack and qualia disorder. There are three techniques that are useful for qualia consistence and qualia supply:

1 Ontologies. They can be used to supply connection of qualia.
2 VR, AR and MR. They can be used to build qualia.
3 Initiative Service. This is the key ability of human-like agents.

6 THE RAW SOCIAL AI: INITIATIVE AS SOCIAL SERVICES

Decisions cannot be made without emotional choices. Use the SaaS AI service on the cloud to record the speakers, utterance content, objects, people, and human emotions that individuals encounter in reality or in metaverse activities to form text records, knowledge graph records, or deep neural network models. Share these emotional records and emotional models to help people make decisions, and then generate emotional records and models again, which is raw social AI.

Any AI agent is simply a computational machine that makes calculations and controls actions based on inputs and perceived information. The computational mechanism of an AI agent is pre-designed and evolutionary rules are predetermined even if it evolves. This is different from human beings procreating and upbringing children, because children's spiritual development of mind cannot be completely controlled, and children's minds are also “undetectable”. So how can the machine have the human like initiative?

However, a person does not live alone, she or he lives in society, i.e., the whole of countless people. And the society does not exist temporarily or appear recently, it exists historically. The societies have their civilizations which are merely the result of the overall human history. That will be a very difficult endeavor to let the AI agents understand the whole society, history, and civilizations. We cannot pin our hopes on possible success of that.

Therefore, an AI agent cannot be initiative on its own. And if an AI agent generates certainty from certain user inputs, it cannot be perceived as initiative. If an AI agent is initiative, its behavior is not defined for its human users, owners, or friends, but it is what they need.

Psychologists think that human actions are all related to their emotion system [Nass et al., 2005]. Emotion and affect of people are concerned with all aspects of situation assess-ment and belief information, including decision making [Hudlicka, 2003]. However, in my opinion, in the most depth of utility, emotion and affect is used to feedback social value. Emotions and affects are interactive at the level of society, just as fairness and efficiency can be "calculated" at the level of society.

The artificial affective agents cannot have initiative unless the initiative is provided as services.

7 CONCLUSION

In such a popular metaverse scenario, it is necessary for us to establish the infrastructure of Raw Social AI and conduct numerous experimental studies. Affective Qualia supply is very important to implement affective agents and future virtual world. Modeling people's emotional responses in reality and metaverse, and recreating typical emotional response scenarios with the help of other people's experiences, is what raw social AI is about.

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