The Science of Cyber Behavior:
An Emerged Field of Research

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ABSTRACT

Is the science of cyber behavior an emerging field or an emerged field? This sounds like a debatable topic. The central argument of this theoretical article, however, is that there exits strong evidence suggesting that the science of cyber behavior is an emerged rather than an emerging field and substantial scientific knowledge of human behavior in the cyber space has been accumulated over the past 30 years. In this article, the author first introduces the concept of cyber behavior, then elaborate the existing evidence for the science of cyber behavior an emerged field of research, present a new important piece of evidence that suggests the science of cyber behavior as an emerged field, and concludes with an outline of future research efforts that will make the science of cyber behavior an established field.

Keywords: Cyber Behavior, Cyber Behavior as an Emerging Research Field, Cyberspace, Human Behavior in Cyberspace, Online Behavior Patterns

Is the science of cyber behavior an *emerging* field or an *emerged* field? In other words, do we have *little* or *substantial* scientific knowledge of human behavior in the cyber space? For the majority of ordinary people and even some scientific researchers, they might hardly hear about the science of cyber behavior or even cyber behavior, thus it would not be a surprise that they might consider that the science of cyber behavior an emerging field. However, as pointed out in recent publications (e.g., Yan & Zheng, 2012), strong evidence suggests that the science of cyber behavior is an emerged rather than an emerging field and there exits substantial scientific knowledge of human behavior in the cyber space accumulated over the past 30 years. This theoretical article is intended to address four questions: What is cyber behavior?

What makes the Science of Cyber Behavior an emerged field of research? What is the new evidence that suggests the science of cyber behavior is an emerged field? What should be done to make the science of cyber behavior an established field?

1. WHAT IS CYBER BEHAVIOR?

This is usually one of the first questions that people would ask. While it can be defined in various different ways, the simplest and broadest definition could be that cyber behavior is human behavior in cyber space. Based on this definition, cyber behavior is simply a hybrid of two entities: cyber space and human behavior. Based on this definition, any physical, social, or mental activities that humans engage in

connecting to and interacting with the Internet could be broadly considered cyber behavior, as long as it directly concerns human beings and it is observed objectively in cyber space.

There exist a wide variety of types of cyber behavior, such as e-learning, e-voting, e-shopping, e-pornography, and e-therapy. These various types of cyber behavior have been repeatedly observed in a wide variety of sectors of cyber space, such as cyber education, cyber government, cyber commerce, cyber law, and cyber medicine. There also exist a wide variety of aspects of cyber behavior, including cognitive (e.g., cyber reasoning and cyber decision making), social (e.g., cyber security and cyber social capital), emotional (e.g., cyber attitude and cyber beliefs), and physical (e.g., Internet addiction and computer vision syndrome). In addition, a wide variety of contributing factors (e.g., gender and personality), resulting effects (e.g., the disinhibition effect and the time replacement effect), underlying processes (e.g., the dual process mechanism and the cognitive workload process) that are related to cyber behavior have been widely reported.

In a sense, human behavior can be roughly divided into two types that exist separately but are seamlessly interrelated: real-world behavior that is mainly observed in the real world, and cyber behavior that is observed mainly in cyber space. Real-world behavior has been observed continuously since the first day of human history. In contrast, cyber behavior emerged only a few decades ago after the Internet was invented and widely used. Despite the relatively young age of cyber behavior compared with the extremely old age of real-world behavior, it seems that nobody would now question the independent existence of cyber behavior in modern society. In fact, many researchers would agree that cyber behavior is a new and unique human phenomenon that is ubiquitous, complex, dynamic, and important. With the still rapid development of Internet technologies and the even much wider use of the Internet in society, many new types of cyber behavior will emerge in the decades to come.

2. WHAT MAKES THE SCIENCE OF CYBER BEHAVIOR AN EMERGED FIELD OF RESEARCH?

This is not an easy question to answer intuitively, while both the general public would agree on existence of cyber behavior in modern society and scientific researchers might agree on ubiquitous, complex, and dynamic nature of cyber behavior as a new, unique, and important human phenomenon.

Science is generally considered as a systematic enterprise that advances empirical, theoretical, and practical knowledge to describe, explain, and predict natural, social, mental, artifactual phenomena in order to improve the life of human beings. It has evolved from ancient science to classic, modern, and contemporary science. There exist a wide variety of specialized scientific fields that are either well established for hundreds of years (e.g., physics, mathematics, and philosophy) or else merged over several decades (e.g., computer science, materials science, and neuroscience).

The science of cyber behavior is a field of research that examines cyber behavior. It has a history of approximately 30 years since Sherry Turkle published her seminal book entitled *Second Self*. Strong evidence shows that over the last 30 years it has changed from an emerging field into an emerged field, and in the future will certainly become an established field.

Sherry Turkle's *Second Self*: *Computers and the Human Spirit*, published in 1984, can be considered the formal starting point of the science of cyber behavior. This is because her work is the earliest and most influential in examining the "subjective side" of people's relationships with technologies, especially computers and Internet. It is analogous to Bill Gates in the earlier 1970s as one of the earliest and most influential individuals who saw the importance of the software side of computer industry when the hardware side was just booming. With rapid and wide applications of Internet technologies in almost every aspect of the modern society,

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