Abstract—Ecosemiotics is a theory aimed to study sign relations between nature and culture, which gives special analysis of the influence of natural environment on humans and how to communicate with and change the nature. However, the ecosemiotics is defined under a changing condition. The article sums up mainstream views of the Tartu school concerning the ecosemiotics studies, clarifies the concept of biosemiotics and ecosemiotics, interpreting nature-text view of Tartu school, local concepts and multiple nature as well as summarizing the translation and application of Tartu school theory in China.

Keywords—ecosemiotics; Tartu school; local characteristics; multiple natures

I. INTRODUCTION

As a subject, semiology has a long history, yet with the threshold of semiology lowered to all creatures, the studies on semiology has broken the confinement of anthropocentrism, initially integrating the sign relations between all creatures including humans and surrounding environment to study ranges, which is called ecosemiotics. Tartu school, a leading strength on studying the ecosemiotics, has experienced a systematic process from inheriting studies on general semiotics, local concepts and multiple nature as well as summarizing the translation and application of Tartu school theory in China.

II. SEMIOTICS AND ECOSEMIOTICS

A. Origin of Modern Semiotics

Back to 1913, Saussure raised a concept semiologie, who, in his works Course In General Linguistics, advocated to creation of an independent subject “Semiotics”, a science which studies the role of signs as part of social life. Based on theories of Saussure, the Semiotics was interpreted by Western works as a study of signs. However, seen in a strict sense, it's not a definition of semiotics but a synonym and interpretation of semiologie Saussure raised earlier, which originated from semelion, a Greek word, namely sign in Latin.[1]

Charles Sanders Peirce, another founder of modern semiotics, connected a sign with a representamen, considering that the Semiotics was the doctrine of signs, which was closely related to logic, followed by his theory of Trinity about signs where a sign was interpreted as a Trinity relation between representamen, object and interpretant. He thought that a sign existed via a representamen of its own. For one, for someone, it represents a thing via part of it or by some mode, and it applies to somebody, namely a sign or perfect one forms in the mind of the person, the sign is thought the interpretant of the first one. The sign represents an object related to it, but not full part of the object, only a concept to some degree, called basis of the sign.

B. Origin of Ecosemiotics

Just like what Winfried Nöth, a semiologist from Germany, said, it was certain that the language-centered sign studies by people like Saussure would be barriers for studies on ecology-determined factors during the mutual interaction between organism and environmental signs.[2] In fact, since the Trinity of Charles Sanders Peirce, Semiotics had started going from relatively conservative structuralism to open post-structuralism gradually, due to the lowered threshold of semiotics, studies on the Semiotics had broken the confinement of linguistics, developing toward interdisciplinary studies, bringing concepts as zoosemiotics and biosemiotics. Yet, the progress of ecosemiotics fell behind obviously during that period, in the 1980s, bio-school of Moscow and Tartu theories took the lead to conduct discussion and development on semiotics about human activities, which is called the beginning of ecosemiotics. Up to 1996, Nöth presented the term ecosemiotics in his works Ecosemiotics, defining it as a study on sign relations between life and environment, which however, overlapped definitions biosemiotics, human ecology and theories of environment, value in boundary, directly causing that the beginning of study on bio-ecosemiotics toward universal biology concept was silenced by biosemiotics that had been formed. In 1998, Kalevi Kull, a semiologist from Tartu University, defined semiotic ecology as a subject to study sign relations between human and ecology system, [3]. Afterwards, the definition of semiotic ecology by Kull, as a subsection and supplement to that of Nöth, became another orientation for developing the ecosemiotics, that is, cultural ecosemiotics. Up to now, the scope of ecosemiotics was supplemented and made clear, namely Nöth bio-ecosemiotics studying sign relations between biology and environment, Kull cultural ecosemiotics studying sign relations between human culture and nature, which was called ecosemiotics, being normally a subject branch under semiotics.
III. PROGRESS OF TARTU SCHOOL’S ECOSEMIOTICS

In order to clarify the development ways of ecosemiotics, we cannot continue without the Tartu-Moscow school of semiotics, which is hereinafter referred to as the Tartu school, for the founder and leader, Juri Lotman taught in Tartu University, the first seminar was held at the Tartu University, most of representative scholars of the school came from Moscow.

Earlier in the 1960s, semiotics researchers of Tartu school, based on human science and natural science, combining literature, culture and natural ecology, getting rid of the single research mode of literature sign, and the subjects of study on semiotics were expanded to all living systems, including all creatures, which gave more attention to analyze the semiotics relations between human activities and nature, the research method was even earlier than the production of ecosemiotics concept.

A. Traditional Dual-track Semiotics of Tartu School

The Tartu school got quickly developed relying on two cornerstones, namely Lotman's cultural semiotics and Kull's bio-semiotics. Lotman, the founder of the Tartu School, introduced the study on the eco-culture field on the basis of traditional molding concept of Tartu school semiotics to analyze the way where culture molded the nature. The language was divided into two levels: the first molding system, namely traditional language system, including natural languages that human used to mark natural phenomena and live, as Russian, English, etc., and artificial languages that human use to think and study as computer language, road signs, etc; The second molding system is a sign system which was formed through enriching and adding to natural languages as well as imitating the language structure, so in addition to information embodied by natural languages, it owns additional cultural value as literary works, art processing, and even customs. In the late studies, Lortman, based on the concept “biosphere” of Vernadsky, raised the view of his own about biosphere, and any single language shall be included in a specific symbol space, interacting with other elements in the space to realize its linguistic functions. Each sign, including texts and even the culture, is closely connected at all levels, unable to continue without others. The concept is both synchronic and diachronic. In other words, the biosphere is the output of cultural creation and condition for the culture to exist. Later, the study on custom culture semiotics, based on the Lortman's molding system theory and biosphere concept, became an important branch of studies on ecosemiotics. [4]

Another leader of the Tartu School was Kalevi Kull, who focused on studies on how living organisms perceive surrounding environment and get influenced by surrounding environment, proposed the concept Umwelt, which was subdivided into perceptual world and behavioral world for the living organisms, and the relation between objective environment and organism was thought a complementary, afterwards, the theory became basis for another branch of ecosemiotics, that is bio-semiotics.

B. Three Orientations of New Tartu School

In 1992, the Semiotics Department of University of Tartu was independently established, marking the new historical era of the Tartu school. After Lotman died, studies on semiotics of the Tartu School began to decline, however the New Tartu School didn't miss the interdisciplinary field as ecosemiotics. The semiotics was expanded to all life systems, focusing on interdisciplinary studies on and comparison of biosphere, Umwelt, life science and folk culture, whose main results included natural text view, locality and multiple nature.

1) Natural text view of Tartu school

Based on traditional views the Tartu school, Kalevi Kull, one of founders of ecosemiotics, gave a critical comment on definition of ecosemiotics of Nöth, redefining the ecosemiotics on the basis of Kull, which emphasized the subject concept of human, focusing on studying nature's significance to human, communication between human and nature and interaction by ways of semiotics, etc. The Tartu School innovatively expanded the concept text of linguistics to the field of ecological research,[5] and considered it as specific scenarios in the natural environment, which are made up of activities by humans and other creature, interacting with each other and carrying cultural functions. Seen from this point, custom, culture and social psychology all can be included in the studies on ecosemiotics, which is a great progress in study innovation.

2) The concepts of micronature and locality

Darwinian evolution thought that life is always adapted to the environment where it is located, namely, “natural selection, survival of the fittest”, correspondingly, studies on the position of human beings in the whole bio-system or relations between human culture and natural environment, cannot be separated from specific environment. So, the natural texts studied researchers of the New Tartu School or signs in the natural environment are generally microscopic. They advocated starting from the locality, [6] investigated and analyze the “written” process of local natural environments. Kull once mentioned the microscopic natural beginning in his work Theory of Meaning.

“Supposing an animal body as a house, an anatomist studies how to build it, a physiologist studies its inner work, and an ecologist studies the garden where the house stands... seeing from the inside of the house through windows, the garden scene will change with the window structure... which is all that the house owns, that is, the environment.” [7]

3) Distinguishing multiple nature

Ever before, philosophers including Hegel had distinguished nature with First and Second, of which, First nature refers to a universal nature existing traditionally; Second nature refers to a nature human understand and create. Yet Kull raised a view of multiple nature from human influence. Zero nature refers to the traditional nature, out of the environment, as absolute wilds, no contact by and unknown to human, unable to describe via scientific language; First nature is a nature to human to recognize, language to describe and signs to indicate, which is an image shown naturally before people, or an imaged interpretation by people to the nature, for one, the plant or animal that we know, including but not limited to myth, society or science; second nature is a nature
that human interpret and build from substance, as garden, man-made lawn and green belt before and after house; Third nature is a nature of art and science, existing in our mind, literature or virtual network.

The studies on ecosemiotics by the Tartu School put the interaction between human and nature in a microscopic and local context in order for interdisciplinarity and multidimensional process and overlapping, defining a new field of sign process.

IV. TRANSLATION OF ECO SEMIOTICS IN CHINA

Though the studies on ecosemiotics of the Tartu School has started a new way, yet the translation and studies on the Tartu School in China go beyond the structuralism theories of traditional schools as Lotman and Ivanov. The translation of studies on ecosemiotics of the new Tartu school is few. In fact, in addition to the new Tartu school, the translation of many schools related to ecosemiotics remains blank in the country. Up to 2014, the Semiotics-Media Research Institute of Sichuan University took the lead for translation of papers of Kur and more, opened the door to studies on domestic ecosemiotics. Soon, the Ecosemiotics: Rise of a Sub-discipline written by Peng Jia and the Unity and Opposites between Nature and Culture: On the Core Theories of Ecosemiotics written by Hu Zhuanglin, detailed and origin and development, showing viewpoints and researches of various schools including Tartu, but obviously, the translation of Hu Zhuanglin confused the boundary between First nature and Second nature, translating the Second nature into Zero nature and images to the nature. The Life Semiotics-Progress of Tartu, translated by Peng Jia, Tang Li, et al, is actually a collection of classical papers of representatives as Kull and Lotman. It summarized the 15-year research achievements of the Tartu school, discussed the sign process in bio-signs, made a comparison of the overlapping between biosemiotics and ecosemiotics in definition and research, clarifying key concepts of ecosemiotics as multiple nature and natural texts. At present, studies on ecosemiotics in China are still in the stage of translation and analysis, and there are few theories and applied researches. Main representatives include Ecosemiotic Analysis of Liangshan Yi Zu Treatment System: Taking Huili County’s “Mi” Ceremony as an Example by Zhu Lin, based on customs and historical research, exploring the ceremony of natural worship and its influence; Rhetoric and Model of Animal Performance: A Semiotics Analysis by Peng Jia takes human-dominated animal performance as an artistic sign text in order to measure the conflict and transformation between animal’s bio-sign activities and cultural sign activities of artistic performances, and further explore the ethical significance of life. Though the ecosemiotics, especially the translation and studies on the Tartu school is just in the beginning, yet it has been in a wide involvement in subject, diverse spatial dimension, and the profound historical dimension.

V. CONCLUSION

Seen internationally, the ecosemiotics of the Tartu School has been in a trend going from systematic to microscopic study. Yet the studies on the ecosemiotics of the Tartu School in China is just beginning and in the stage of translation and small-range application. So, based on Chinese cultural traditions, we need grasp the subjectivity and system, not ignoring the subjective consciousness and cultural spirit of human beings, and not blindly studies without human subjectivity, but take the ecosemiotics as a new view for studies on culture and custom, and the new standards to explore the development modes and laws of national culture.

REFERENCES

[1] Zhao Yiheng, 60 Years of Semiotics in China, Journal of Sichuan University, Ver 178, Jan 2012. (in Chinese)
[2] W. North, “Ecosemiotics”, Sign Systems Studies Vol. 26, PP. 332-343, January 1998
[3] K. Kull, “Semiotic ecology: different natures in the semiosphere”, Sign Systems Studies Vol. 26, PP. 344-371, January 1998
[4] M. Lotman, “Umwelt and Semiosphere”, Sign Systems Studies. Vol. 30, PP.33-40, January, 2002
[5] M. Timo. “Towards an integrated methodology of ecosemiotics: The concept of nature-text”. Sign Systems Studies. Vol. 35, PP.269-294, January, 2008
[6] M. Timo. “Locality as a Foundation Concept for Ecosemiotics”. Bucknell University Press, 2002
[7] J. Uexküll, “The theory of meaning”. Semiotica, Vol. 42, PP 73, January, 1982