

[Articles]

**E-series Time As Prolegomena to McTaggart's  
A- and B-series Time**

Naoki Nomura  
Koichiro Matsuno

---

*Studies in Humanities and Cultures*

---

No. 25

名古屋市立大学大学院人間文化研究科『人間文化研究』抜刷 25号  
2016年1月

**GRADUATE SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**

NAGOYA CITY UNIVERSITY  
NAGOYA JAPAN  
JANUARY 2016

[Articles]

## **E-series Time As Prolegomena to McTaggart's A- and B-series Time**

**Naoki Nomura\***

**Koichiro Matsuno\*\***

### **Abstract**

The occurrence of the tenses of past, present and future presumes a subject distinguishing between memory and anticipation in reference to an experience. One possible scheme to recover the reality of time should be sought in naturalization of the subject. A metabolic material body of any sort appearing in the biological realm can be seen as a sentient agent constantly punctuating the intervening material through-flow so as to make both the incoming and outgoing flows balance. The repercussions of the punctuation are thus propagated throughout the biological world. The sequence of events crystallized in the finished record precipitates time to be read out as B-series time, i.e., as a measure for distinguishing between before and after with respect to the events in question.

### **1. Introduction**

McTaggart arrives at the unreality of time through his seminal scheme separating the two series of time:

For the sake of brevity I shall speak of the series of positions running from the far past through the near past to the present, and then from the present to the near future and the far future, as the A series. The series of positions which runs from earlier to later I shall call the B series. The contents of a position in time are called events. The contents of a single position are admitted to be properly called a plurality of events (McTaggart, 1908).

The theory has widely been referred to in the literature; the charge McTaggart made against the reality of time comes from two sources. One is to accept the subjective agent or the descriptive author who

---

\* Nagoya City University, Nagoya, 467-8501, Japan

\*\* Nagaoka University of Technology, Nagaoka 940-2188, Japan

distinguishes the past, present and future, without naturalizing the subject. The other is to go along with the notion of an event as the content of a single position in time. If one wants to recover some aspect of the reality of time contrary to the initial charge, it would be necessary to examine the nature of the two sources more closely.

The issue in focus is whether or not the notion of an event as the content of a single point in time could be congruent with the participation of the subject who can distinguish the past, present and future (Matsuno, 2013a).

Of course, it goes without saying that if a specific point in time is assigned to each event, the distinction between the past, present and future can be made explicit as referring to the event belonging to each tense. In a nutshell, the act of an experience is unique only to the present (or today), while its anticipation is to the future (or tomorrow) and its memory is to the past (or yesterday). This distinction may then permit us to frame such a strange statement on the nature of the sequence of events as "the memory of an anticipation is an experience" as following the mold of a legitimate statement – "yesterday's tomorrow is today" – in terms of the positions in time. Facing this stressful situation, McTaggart reaches his conclusion that time is unreal as far as the A-series is concerned.

One likely countermeasure for salvaging some aspect of the reality of time may be sought within a critical examination of the nature of the events as the contents of a single position in time. Bateson's notion of punctuation may save us from the dilemma by way of holding whatever events in a bottom-up manner (Bateson 1972/2000).

## 2. E-series Time from Punctuation

We then ask the question: what constitutes an event? One possible means of answering this question may be to make an appeal to the act of punctuation delimiting the boundary in the first place for some event to occur in reference to the covering context. It is not an event that exists. It is rather the punctuation of the boundary that brings about an event. The drawing of such boundaries separating something from the rest is thus agential (Nomura et al, 2015). An event may not be limited only to the content of a single point in time. Put differently, the act of punctuation refers to the interference of a system with another system currently in focus in which both systems are agential.

However, we note that such interference does not proceed along a single definite sequence of events but is rather networked in a highly complicated manner. Any punctuated system can punctuate

another system nearby in a reverberating manner. Punctuation thus indicates inter-agential interaction even in the empirical world at large (Matsuno, 2013b).

The habit of expecting a certain punctuation for elucidating events of interest tends to become self-serving by promoting certain behaviors and discouraging others (Bateson, 1963). One likely consequence of such habituation is the stabilization of a particular pattern of punctuation. What takes place there is that the preceding perfecting of punctuation serves as the condition for the startup of the succeeding progression toward the succeeding perfecting to come (Matsuno, 1999).

The present rough sketch of punctuation can easily be naturalized. Let us imagine a material body such as a complex molecule constantly exchanging its atomic components with others of similar kinds. This is metabolism in biology. The identity held by the material body through the exchange of atomic components is the class identity, in distinction to the individual identity of each atomic component. Moreover, the class identity is maintained through the act of making both ends of the incoming and outgoing atomic flows meet via internally processing the intervening through-flow, or otherwise the metabolism would be jeopardized.

Making both ends of the incoming and outgoing flows balance is no more than the agential synchronization between the two material flows at their intersection. However, the act of punctuation and its consequent synchronization is constantly spilling over into the immediate neighborhood. It reverberates in the biological realm indefinitely because of the inevitable and unpredictable interference with the other metabolic bodies of a similar nature in the vicinity (Matsuno, 2013b). Thus, the act of synchronization is necessarily local, and any punctuation for synchronization does not fail to cause interference with other nearby metabolic bodies. The E-series time is going to refer to the consequence of the local acts of synchronization of an interactive nature (Nomura et al, 2015). Thus, the E-series time in the making is in the agential efforts toward the total synchronization, while constantly failing in meeting the objective every time. The E-series time is locally agential in the forward direction, while globally regulative in the backward.

The local act of synchronization for punctuation can yield global synchrony only in the record if the finished local act is registered in the record in a globally accessible manner in a third-person description. Needless to say, empirical scientists are competent enough to prepare such a record through empirical or experimental observations. That is to say, the E-series time registered in the record that has

already been deprived of the agential capacity can safely be equated to the B-series tenseless time.

In addition, the E-series time in the making also internalizes the capacity of punctuation, which the A-series time lacks when it is detached from the agential self. Furthermore, unlike the B-series of time, the E-series time in the making can frame a near-future anticipation on a local basis, because the consequence of punctuation by one agent serves as the cause for another punctuation by another nearby agent. Of course, the E-series time does not accommodate into itself the full-blown mold of the future tense. One advantage of the E-series time over the A-series is that it has the agential competency of punctuation for making the tenses generative even in a primitive manner in letting the E-series time in the product anticipate the succeeding series of its own in the making to come. Instead, the punctuation for making the tenses unique to the A-series time functional comes from the nature of the standing-alone self in charge of maneuvering and overseeing the series, such as a descriptive author.

### 3. Discussion

To be sure, metabolism provides empirical support for the functioning of the E-series time upon the local cycle of perfecting and progressing. The E-series time precipitates the B-series time to be completed in the record. Nonetheless, the B-series time alone can sometimes come to accommodate into itself a scheme of integrating both local synchronization and global synchrony. If a material body possesses the receptive capacity of being punctuated, the dichotomy of local synchronization and global synchrony may be in sight. A case in point is the synchronization of an array of similar pendulum clocks hanging on the wall of a clockmaker. It is empirically observed that the swinging motion of each pendulum becomes synchronized with others, and eventually any pair of swinging pendulums enters into complete synchrony.

The synchronization between the pendulum clocks is due to the mutual adjustment of deformation or displacement of the pendulum movement. Each pendulum clock is supposed to mark exactly the same time even if the ticking sounds between any two may be out of phase. Nonetheless, in the long run, the ticking sounds come to be in total synchrony among all of them. This is due to the receptive capacity of a material body being punctuated through mutual adjustments, as promoting certain behaviors and discouraging others. This is again a shortcut toward approaching the B-series time registered in the finished record, with no unnecessary detour via the A-series time.

### 4. Concluding Remark

Physics has been competent in manipulating the symbol of a movement as demonstrated in the

implementation of the physical laws of motion standing on a single point in time. However, the necessary price to pay for this is being patient with a lack of competence in making punctuation. One remedy for recovering from the present quandary must be to give due attention to the agential nature of the displacement of a movement which goes beyond the strict stipulations of the physical laws of motion. This is equivalent to saying that the boundary conditions applied to the law of motion could also be varied in motion. The displacement of a movement that does not accompany an icon to be symbolized makes room for punctuation. The importance of making room for punctuation becomes most vividly apparent in the contrast between the local synchronization in the making and the global synchrony in the product. The E-series time is a concrete demonstration of contrasting the local progressing and the global perfecting.

#### References

- Bateson, G., 1963. Exchange of information about patterns of human behavior. In: *Information Storage and Neural Control* (W. S. Fields & W. Abbott (Eds.)) Thomas Books, Springfield IL, USA, pp. 173-186.
- Bateson, G., 1972/2000. The logical categories of learning and communication. In: *Steps to an Ecology of Mind*. Univ. Chicago Press, Chicago IL, USA, pp. 279-308.
- McTaggart, J. E., 1908. The unreality of time. *Mind: Quart. J. Psychol. Philos.* **17**, 456–473.
- Matsuno, K. 1999. The clock and its triadic relationship. *Semiotica* **127**, 433-452.
- Matsuno, K. 2013a. Toward accommodating biosemiotics with experimental sciences. *Biosemiotics* **6**, 125-141. <http://dx.doi.org/10.1007/s12304-012-9156-2>.
- Matsuno, K. 2013b. Making biological theory more down to earth. *Progr. Biophys. Mole. Biol.* **113**, 46-56. <http://dx.doi.org/10.1016/j.pbiomolbio.2013.03.004>.
- Nomura, N., Hashimoto, J., Akashi, M. 2015. The E-series time: The emergence of a new time system via synchrony and story. *Time Studies* **8**, 37-50.