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A CONTRIBUTION TO A THEORY OF TRANSITIVITY IN JAPANESE
(A TENTATIVE DRAFT)

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0. Background information

In order to briefly survey some of the circumstances that were conducive to this paper's coming into being it is necessary to go back in time 16 years. I then spent a year in Kyoto with the intention of writing a theoretical grammar of the Japanese language, and I thought I was equal to this task. However, as I was progressing with my research, doubts started to appear in my mind about whether I knew anything at all about how to write such a grammar of an ethnic language. And, finally, what inevitably had to happen, did. Towards the end of my scholarly stay in Kyoto, to my horror, I reached the hopeless conclusion that I could not accomplish my task, since I did not know how to write a theoretical grammar. My frustration would have been less if I had then been less ambitious.

A descriptive grammar of a language, if conceived of as a theory of this language, should make an adequate description of it available to us. Within such a grammar, among other things, it should be possible not only to formulate precise definitions of linguistic objects but also to formulate and prove, in a logical sense, theorems concerning a given language reality. In particular, it should be made possible to prove that a given sentence is or is not a sentence of the ethnic language at issue. Or, that a given sentence is transitive, passive, or causative, etc. Or, that a given word is in Nominative, Genitive, or Accusative, case etc. However, the idea of developing such a grammar was too attractive to be abandoned.

Of course, ethnic linguators can decide whether a given sentence is correct or not. But, if a grammar adequately describes linguators' language knowledge, then independently of this knowledge, this grammar should allow us to prove it.

It took me a long time and much effort to approach a concept of grammar understood as a theory of language in the above-indicated sense. At least it seems to me to be so, unless I am mistaken. To put it more clearly, I have developed an axiomatic

theory of diathesis, which is almost ready for publication, and the exposition of which will probably be the length of a monograph.

Unfortunately, history repeats itself in a certain sense, since now I do not know how to present this theory in informal language in such a way that it is understandable also for those unfamiliar with symbolic logic. And this is a real dilemma for me. The translation of a theory from a formal language into an informal one may also cause frustration for the explainer.

1. Introductory remarks

Diathesis* belongs to the most complex lingual categories, since it embraces both the category of voice and case, and covers a considerable part of semantics, syntax, and morpho-syntax. Diathesis in Japanese is still waiting for a comprehensive approach, that is, a theory which would adequately and exhaustively describe this category in its entirety. However, it should not be forgotten in this context that for quite some time, intensive research on the diathesis in Japanese has been conducted, the results of which reveal interesting peculiarities of this category, and allow us to better determine its properties and the status within the language.

Notwithstanding, it should also be added here that authors dealing with diathesis in Japanese usually concentrate upon phenomena concomitant with diathetic structures, for example, on the adversativity of the Japanese passive, or restrictions caused by animateness/inanimateness, etc., rather than on the essence of diathesis itself. The aim of this paper is twofold:

(i) to propose a certain theoretical framework within which the category of diathesis as such could be investigated, and
(ii) to apply this framework in the examination of a fragment of diathesis in Japanese, in particular of transitivity.

There will be several uncommon traits noticeable in the formulation of our theory, whereby it will differ considerably from the so-called main-stream research in this field. One of these traits will be the use of terms which may seem unusual, to say the least. However, the author has not coined them from the intent to shock the reader at any price and to thereby attract his or her attention, a method commonly resorted to in advertisements, but rather from the desire to secure for the linguistic objects those adequate terms, which our theory cannot do without, as well as those special and somewhat novel terms without which the theory would be incommunicable.

2. Diathetology and diathesis

Every linguistic subdiscipline investigates a certain subject matter, that is, a certain fragment of language reality. It seems therefore advisable to keep a clear terminological

* cf. Gk *diathesis* ‘arrangement, disposition’; *tithénai* ‘to put, set down, lay down’; *thetós* ‘placed, set’.

distinction between a linguistic discipline and its subject matter, and in consequence to use different terms for these two entities. With this in mind, we shall draw a clear borderline between diathetology and diathesis.

Generally speaking, ***diathetology*** could be conceived of as a discipline dealing with sentences and desentential syntagmas, with regard to how they reflect the structure of events or states-of-affairs being designated by them. Thus, it should become evident that only certain properties of these lingual objects will be relevant to diathetology, and not all of them. More precisely, diathetology could be viewed as a class of linguistic theories, the subject matter of which is the diathetic reality of all ethnic languages, and in particular:

(i) diathetic knowledge of ethnic linguators as well as
(ii) the manifestation of this knowledge in the lingual objects.

The image of this subject matter projected by diathetology assumes the form of what could be called ***diathesis***, to be treated as the ***domain*** of diathetology. This domain could, in turn, be imagined as a system consisting of

(i) all sentences and desentential syntagmas, as primary diathetic objects, and
(ii) all diathetically relevant relations, that is, relations binding these objects with extra-lingual entities as well as relations occurring between these objects themselves and between some of their constituents.

Of course, diathesis should adequately mirror the diathetic reality, that is, it should be an adequate image of it.

Diathetology as a class of linguistic theories which form the science about the diathetic reality of ethnic languages can be divided into:

(i) general, and
(ii) particular.

General diathetology constructs theories which apply to all languages. It would be a discipline located at the intersection of general semantics, general syntax and general morphology. On the other hand, the range of application of ***particular diathetological*** theories would be limited to an individual language or a group of languages. Thus, by applying a general diathetological theory to a particular language *L*, a diathetological theory or a ***diathetological grammar*** of or for this language is constructed. In what follows, a fragment of a general diathetological theory will be briefly sketched out, and subsequently applied in the description of a fragment of Japanese diathesis.

Before the presentation proper is begun, let us still add that our orginal intention was to propose for the readers’ consideration a diathetological theory formulated with the aid of the axiomatic method. This, in turn, would require us to rigorously observe the principles determined by this method. There are four such principles, two of which refer to the sentences of a theory, and two others to the terms occurring therein. These principles are applied in the following manner:

(i) Among the terms of a theory a certain small subset, called primitive terms, is distinguished. Their meanings should be obvious, since they are used in sentences without being defined. Hence, they are also called undefined.
(ii) No other terms can be utilized, unless their meanings have been determined by defining them by means of primitive or previously defined terms.
(iii) Among the sentences of a theory a certain subset, called axioms (primitive sentences, postulates), is distinguished. Their truth appears evident, and they are accepted without any further justification.
(iv) No other sentences can be accepted as theorems of the theory, unless they can be deduced from the axioms, definitions, and sentences proved previously (cf. Tarski 1984: 23; 1994: 100; Batóg 1996: 20f).

A theory defying any of these four principles cannot be called an axiomatic theory.

After some consideration, however, we decided to abandon the idea of presenting our theory in an axiomatic format, since this would require the use of logico-mathematical apparatus. Instead, it will be presented informally, whereby it may appear friendlier to readers unversed in symbolic logic. Nevertheless, we shall start with the presentation of the primitive and some auxiliary defined terms, and when the need arises, we shall invoke some postulates all of which will be formulated here in non-symbolic language.

3. Primitive and some auxiliary defined terms

The conceptual content of the diathetological theory to be outlined in this article will be specified in advance by the set of primitive terms. This set is relatively extensive and embraces sixteen items. As has already been mentioned above, diathesis is a rather complex category, and its adequate and exhaustive description requires the application of a sufficiently rich conceptual apparatus. The primitive terms denote fundamental diathetological notions lying at the very basis of our theory. At first, the list of these terms will be given, and subsequently their intuitive sense explained.

As a matter of fact the explanation of many of these terms was already given elsewhere (cf. Bańczerowski 2000). However, for the sake of quick reference they will also be treated briefly here. The proper understanding of the primitive terms of a theory is necessary for the proper understanding of the theory itself. This statement should be constantly borne in mind, since the meanings of several of our primitive terms will diverge from those adhered to in the usual linguistic practice.

3.1 List of primitive terms

(i) ***Sen*** – the set of all actual sentences,
(ii) ***Dic*** – the set of all actual dictons,
(iii) ***Stg*** – the set of all actual syntagmas,
(iv) ***Snd*** – he set of all actual sentoidons,

(v) ***dsg*** – the relation of designation,
(vi) ***sgf*** – the relation of signification,
(vii) ***lkf*** – the relation of lexification,
(viii) ***smf*** – the relation of semification,

(ix) ***PTT*** – the set of all ptotonic meanings,
(x) ***PTZ*** – the set of all ptotizygic meanings,
(xi) ***Ptn*** – the set of all ptotons,
(xii) ***Pzr*** – the set of all ptotizygitors,
(xiii) ***syd*** – the relation of syndiatheticality,

(xiv) ***Cas*** – the set of all case-dictons,
(xv) ***Voc*** – the set of all voice-dictons,
(xvi) ***dq*** – the relation of dictonal qualification.

3.2 Sentences, dictons, syntagmas and sentoidons

The first term on our list is thus the set of all actual sentences denoted as ***Sen***. In some other theoretical systems this term may be defined rather than primitive. We shall make a clear distinction between an actual sentence and a sentence as an abstract entity. An ***actual sentence*** is but a special kind of utterance, and as this latter it is an individual, concrete, spatio-temporal entity, produced *hic et nunc*, by a definite speaker, in a definite time and space, and by virtue of all this it acquires the property of actuality. Consequently, it cannot be used repeatedly, but only once.

Actual sentences convey messages and they function in communication as certain wholes, that is, they are communicatively indivisible. However, looked at from different angles, their segmentation or division into linearly disjunct parts is possible and results in units or segments of various kinds. Thus, for example, within actual sentences dictons and syntagmas can be distinguished.

A ***dicton*** is conceived of as a maximal unit of morphology, and a minimal unit of syntax. It conveys both lexical and grammatical (semical) meaning at the same time, and it may be linearly continuous or discontinuous. No synsemantical unit can be regarded as a dicton, but it forms a dicton with the appropriate autosemantic word. Each particular dicton as a part of a corresponding utterance is, as this latter, an individual, concrete, non-repeatable entity.

In accordance with our concept of dicton, desinences, affixes, adpositions, including articles, auxiliaries, and the like, should be treated as subdictonal units. Consequently, such Japanese expressions as: *sensei-wa* ‘teacher, Nom, Sg’, *mura-no* ‘village, Gen’, *hitobito-ni-yotte* ‘by people’, *ki-no shita-ni* ‘under a tree’, *kaze-de* ‘wind, Instr’, *yomareru* ‘read, Pas, Pres’, *itte ita* ‘was saying’, *katte oita* ‘bought’, *aruki nagara* ‘while walking’, etc. are all instances of dictons.

A lingual unit consisting of at least two dictons and forming a meaningful expression will be called an ***actual syntagma***.

A desentential syntagma, that is, a syntagma derived from an actual sentence will be called here ***sentoidon***. Thus, sentoidons are never sentences. They usually result from the substantivization (nominalization) or participialization of sentences. An important role in our subseqnent considerations will be played by sentives. A ***sentive*** is here defined as either an actual sentence or sentoidon. Analogously, actual phrases will be defined. An ***actual phrase*** is either a dicton or an actual syntagma. The set of all dictons within sentive *s* will be denoted as $\boldsymbol{dc}^{<}s$.

3.3 Signation

The property of lingual signs to stand for or represent the corresponding entities of extralingual reality will find formal reflection in the ***relation of signation***, within which two modes will be distinguished and accounted for in terms of:

(i) the ***relation of designation***, and
(ii) the ***relation of signification.***

We shall work on the assumption that a sign designates an object and signifies its properties. The designated object will be referred to as a ***designatum***, and the signified property as a ***significatum*** or, simply, a ***meaning*** of the sign. A meaning can be signified either in a lexical or semical (grammatical) manner. Consequently, within the relation of signification two subrelations will be distinguished, that is,

(i) the ***relation of lexification***, and
(ii) the ***relation of semification***.

Two signs will be called ***homolexical***, iff they lexify identical meanings. Meanings may be simple or composite.

In our subsequent inquiry into diathesis we shall deal only with those aspects of signation which are relevant for this category. Therefore signation will be restricted appropriately. In order to understand the nature of this restriction we shall now devote some attention to the structure of events. In anticipation, however, of the subsequent discussion, let us state that we are making an assumption that sentives designate events, and signify the properties of these events. Dictons, for their part, designate the participants of the events and signify the properties of these participants.

3.4 Events; diathetic and thetonic signification

The structure of an event or state-of-affairs seems to be inseparable from its lingual apprehension, since there seems to obtain a mutual interdependency: by virtue of the events being signated by the sentives, on the one hand, the structure of events is reflected in the structure of sentives, while on the other, the structure of sentives specifies the structure of events. Within each event there can be distinguished:

(i) the set of participants, and at least
(ii) one interparticipant relation, which could be called the relation of eventification.

The latter applies to the intraevental participants, and by virtue of this an event is brought about. For technical reasons, however, we shall prefer the terms:

(i) ***eventor***, and
(ii) ***eventificator***

for a participant within an event and the relation of eventification, respectively. Both eventors and eventificators as constituents of the events will be jointly referred to as ***eventives***.

The diathetically relevant properties of events will be conceived of as dth-significata or, simply, as dth-meanings. Events may be transitive, transmittive, causofective, utive, locationative, mutive, etc. Accordingly, they will display the properties of: (i) transitivity, (ii) transmittivity, (iii) causofectivity, (iv) utivity, (v) locationativity, (vi) mutivity, etc. However, the signification of dth-meanings depends upon the signification of their constituent submeanings. These latter are nothing else but the diathetically relevant properties of eventives, that is, the constituents of events. Consequently, each dth-meaning is complex, and can be viewed as a suprasignificatum with regard to its subsignificata, which, in turn, will be referred to as thetonic, that is, thetonic meanings. This latter term will be often abbreviated by tht-, and its origin will soon become clear. Thus, for example, the dth-meaning of Transitivity is comprised of the following tht-submeanings: Agentivity, Patientivity, and Transitificatority, and the dth-meaning of Transmittivity is comprised of the following tht-submeanings: Emittority, Receptority, and Transmittificatority. The dependency of the dth-meanings upon the corresponding tht-meanings finds formal reflection in the definability of the former in terms of the latter.

Within the set of tht-meanings we shall distinguish two subsets, that is:

(i) the ***set of all ptotonic meanings*** (***PTT***), and
(ii) the ***set of all ptotizygic meanings*** (***PTZ***).

Both of these sets belong to our primitive notions. By resorting to the terms ‘ptotonic’ and ‘ptotizygic’ we intentionally pick up the thread of the Greek grammatical tradition, to which we owe the term ‘ptosis’ used to denote case. The word *ptosis* means ‘a falling’ (cf. *piptō* ‘I fall/am falling’, *piptein* ‘to fall’). The metaphorical origin of the grammatical sense of this term certainly had its source in the necessity of distinguishing between the basic or ‘upright’ form of a word and its inflected forms. As can also be rightly supposed, the term ‘ptotizygic’, already used by us, originates in a metaphor. Its first member is related to the word *ptosis*, while its second member to the word *zeugein* ‘to yoke’ (cf. also Gk *zygón* ‘yoke’). Metaphorically, we could say that dictons, in order to designate eventors and to signify their properties, in particular, the ptotonic meanings, have to ‘fall’ appropriately, that is, to assume appropriate shapes or, simply, to occur in a required case. A dicton which ‘falls’ will be called a ***ptotonic dicton*** or a ***ptoton***.

Within a sentive ptotons are bound by a ***ptotizygic dicton*** or a ***ptotizygitor***. Thus, a ptoton designates a corresponding eventor and signifies its properties, whereas a ptotizygitor designates a corresponding eventificator and signifies its properties. Consequently, ptotons signify ptotonic meanings, while ptotizygitors signify ptotizygic meanings. Ptotons and ptotizygitors will be jointly referred to as ***thetonic dictons*** or, simply, ***thetons*** (cf. Gk *thetós* 'placed, set'). And, it is only thetons which are involved in the dth-structure of sentives, since it is only by them that the signification of dth-meanings is being accomplished.

In accordance with our distinguishing of the above kinds of diathetically relevant dictons, we shall operate with the following three sets of these objects, that is:

(i) the ***set of all ptotons*** (***Ptn***),
(ii) the ***set of all ptotizygitors*** (***Pzr***), and
(iii) the ***set of all thetons*** (***Thn***).

The sets ***Ptn*** and ***Pzr*** belong to our primitive terms, while the set ***Thn*** results from the summation of these two. The set of all thetons being constituents of sentive *s* will be denoted as $\boldsymbol{dcth}^{<}s$.

The ***set of all thetonic meanings*** (***THT***) includes both ptotonic meanings (***PTT***) and ptotizygic meanings (***PTZ***), and it may have among its elements the following:

ptotonic meanings	ptotizygic meanings
Agentivity (***AGTY***)	Transitificatority (***TSFTY***)
Patientivity (***PATY***)	Transmittificatority (***TMFTY***)
Emittority (***EMTY***)	Causofectificatority (***CEFTY***)
Receptority (***RCTY***)	.
Causatority (***CRTY***)	.
Effectority (***ERTY***)	.

Some of the tht-meanings are compatible with each other or, to put it somewhat differently, they mutually presuppose each other. Such meanings will be called syndiathetical. The ***relation of syndiatheticality*** (***syd***) also belongs to our primitive terms, and it binds, for example, tht-meanings such as Agentivity and Patientivity, Agentivity and Transitificatority, Patientivity and Transitificatority. All syndiathetic tht-meanings form the corresponding dth-meaning. In other words, each dth-meaning can be conceived of as the class of all syndiathetic tht-meanings. Thus, for example, Agentivity, Patientivity and Transitificatority form Transitivity (***TS***), while Emittority, Receptority and Transmittificatority form Transmittivity (***TM***). Let us repeat once again that while tht-meanings characterize the eventives within events, the dth-meanings characterize the events as certain wholes, and furnish a basis for their comparison.

The set of all thetons occurring in sentive *s* with respect to dth-meaning Σ will be denoted as $\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s$.

3.5 Morpho-syntactic categories of dictons

Thus far we have dealt with diathetically relevant dictons as regards their designation of eventives and their signification of tht-meanings. In consequence, we arrived at ptotons and ptotizygitors as two disjoint subsets of thetons. However, we should also deal with diathetically relevant dictons as regards their membership in such morpho-syntactic categories as Case and Voice, both of which will be treated here as but subcategories of the superordinate category of ***disposition*** (cf. Gk *diathesis*). In fact, these are categories which a grammar of a given language usually has at its disposal. Accordingly, we shall distinguish two sets of dictons:

(i) the ***set of all case-dictons*** (***Cas***), and
(ii) the ***set of all voice-dictons*** (***Voc***).

Both of these sets belong to our primitive notions, and this presupposes that we are able to identify them among other dictons within the sentives. The case-dictons and the voice-dictons will be jointly treated as ***positon-dictons*** (cf. Lt *positus*, ptp of *pōnere* 'to place, put'; cf. also Gk *thetós* 'placed, set'). The ***set of all positon-dictons*** can be denoted as ***Psn***, and the set of all positon-dictons in sentive *s* – as $\boldsymbol{dcpo}^{<}s$.

3.6 Qualification

Sentives as the primary object of diathetological inquiry are usually syntagmas, that is, they consist of more than just one dicton. Among various relations by which intrasentival dictons are bound there should be distinguished the ***relation of dictonal qualification*** (***dq***), which belongs to our primitive terms.

Ex: In the Japanese sentence *Kinoo watashi-no chichi-wa tsuyoi ame-ni furareta.* 'Yesterday my father was rained on by a heavy rain' the following pairs of dictons belong to the relation ***dq***: (*chichi-wa*, *furareta*), (*furareta*, *ame-ni*), (*furareta*, *kinoo*), (*ame-ni*, *tsuyoi*), (*chichi-wa*, *watashi-no*). The first member in these pairs is always dicton as qualificatum, and the second member – dicton as qualificator.

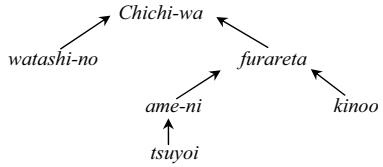
Every sentive *s* can be associated with the corresponding ***system of dictonal qualification*** consisting of two sets, that is:

(i) the set of dictons forming *s* ($\boldsymbol{dc}^{<}s$), and
(ii) the set of pairs of dictons which enter the relation of qualification within *s* ($\boldsymbol{dq}_s$).

The Japanese sentence adduced above is operated by the following system of dictonal qualification:

({*kinoo*, *watashi-no*, *chichi-wa*, *tsuyoi*, *ame-ni*, *furareta*}, {(*chichi-wa*, *furareta*), (*chichi-wa*, *watashi-no*), (*furareta*, *ame-ni*), (*ame-ni*, *tsuyoi*), (*furareta*, *kinoo*)})

This system of dictonal qualification can also be equivalently represented by means of the following graph, in which the arrows indicate the relation ***dq***:



3.7 Diathetic restrictions and extensions of dictonal qualification

The relation ***dq*** may be restricted both to thetonic dictons as well as to positon-dictons, and it may be extended to thetonic categories as well as to positon-dictonal categories. The dth-meaning of sentive *s* does not depend on all its dictons, but only on its thetons, which at the same time appear to be its position-dictons. Consequently, for the purposes of diathetology, the restrictions in question are necessary.

The ***relation of thetonic-dictonal qualification*** within sentive *s* will be denoted as $\boldsymbol{dthq_s}$, and it binds only those thetons which are constituents of *s*. However, since sentive *s* may signify more than just one dth-meaning, further restriction will be needed, in order to indicate that this relation concerns only thetons involved in the signification of dth-meaning Σ. Ultimately, the relation resulting from such a restriction will be denoted as $\boldsymbol{dthq_{s\Sigma}}$.

Having now at our disposal the set $\boldsymbol{dcth_\Sigma^<}s$, and the relation $\boldsymbol{dthq_{s\Sigma}}$, we are in a position to define the ***symptoson*** of sentive *s* with respect to dth-meaning Σ. This symptoson will assume the form of the system ($\boldsymbol{dcth_\Sigma^<}s$, $\boldsymbol{dthq_{s\Sigma}}$). In order to denote this symptoson we shall avail ourselves of the symbol $\boldsymbol{sps_\Sigma}$‘*s*.

Ex: If we interprete *s* as the Japanese sentence *Musuko-wa chichi-ni tegami-wo kaita,* then this sentence is operated by two symptosons, a transitive and a transmittive one. Thus, we can write:

$\boldsymbol{sps_{TS}}$‘*s* = ({*musko-wa*, *tegami-wo*, *kaita*}, {(*musko-wa*, *kaita*), (*kaita*, *tegami-wo*)}), and

$\boldsymbol{sps_{TM}}$‘*s* = ({*musko-wa*, *kaita*, *chichi-ni*}, {(*musko-wa*, *kaita*), (*kaita*, *chi-chi-ni*)}).

These symptosons can also be equivalently represented by means of the following graphs:

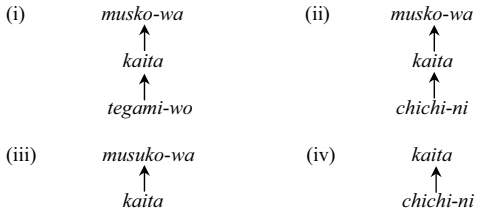
Let us now consider the relation $\boldsymbol{dq_s}$ in restriction to positon-dictons in sentive *s*. The relation resulting from such a restriction will be called the ***relation of positon-dictonal qualification in*** *s*, and will be denoted as $\boldsymbol{dpoq_s}$.

With the set $\boldsymbol{dcpo^<}s$ and the relation $\boldsymbol{dpoq_s}$ at our disposal we can define a ***concason*** of sentive *s*. This concason will assume the form of the system (*X*, *R*), and such that *X* is a subset of $\boldsymbol{dcpo^<}s$ and *R* is the relation of positon-dictonal qualification binding the dictons in *X*. In other words, *R* is included in $\boldsymbol{dpoq_s}$. The symbol $\boldsymbol{ccs^>}s$ will denote the set of all concasons which can be distinguished within sentive *s*.

Ex: Let us again suppose that *s* is the Japanese sentence *Musuko-wa chichi-ni tegami-wo kaita*. Then, within *s* the following concasons can be distinguished:

(i) ({*musuko-wa*, *tegami-wo*, *kaita*}, {(*musuko-wa*, *kaita*), (*kaita*, *tegami-wo*)}),
(ii) ({*musuko-wa*, *chichi-ni*, *kaita*}, {(*musuko-wa*, *kaita*), (*kaita*, *chichi- ni*)}),
(iii) ({*musuko-wa*, *kaita*}, {(*musuko-wa*, *kaita*)}),
(iv) ({*kaita*, *chichi-ni*}, {(*kaita, chichi-ni*)}),
(v) ({*kaita*, *tegami-wo*}, {(*kaita*, *tegami-wo*)}),
(vi) ({*musuko-wa*, *tegami-wo*, *chichi-ni*, *kaita*}, {(*musuko-wa*, *kaita*), (*kaita*, *tegami-wo*), (*kaita, chichi-ni*)})

Alternatively and equivalently these concasons can be represented by means of the following graphs:



(v) *kaita* ↑ *tegami-wo*

(vi) *musuko-wa* ↑ *kaita* ↙ *tegami-wo* ↘ *chichi-ni*

4. Postulates for diathetology

The propositional content of an axiomatic theory finds reflection in a system of axioms or postulates, which characterize the properties of the primitive and some auxiliary defined terms of this theory. However, since our present theory is formulated in informal language, the postulates too will be given in such language. The system of postulates proposed below for our theory consists of seventeen propositions thirteen of which should be accepted by general diathetology and four by a diathetological grammar of Japanese. These six latter ones will be given further on in the text.

Needless to say, this system of postulates is not exhaustive yet and should be subsequently enriched in an appropriate manner.

Po 1 Sentives are a special kind of sign.
Po 2 The set of sentives is not empty.
Po 3 Every sentive consists of at least one dicton.
Po 4 Dictons are a special kind of sign.
Po 5 Every sentive has exactly one voice-dicton.
Po 6 The relation of dictonal qualification binds only dictons.
Po 7 If dicton x is qualified by dicton y, then y does not qualify x.
Po 8 The set of thetonic meanings is not empty.
Po 9 The relation of syndiatheticality is an equivalence on the set of thetonic meanings.
Po 10 Each dth-meaning is signified by some sentive.
Po 11 Each sentive signifies some dth-meaning.
Po 12 Only sentives are capable of signifying dth-meanings.
Po 13 If a sentive has a symptoson with respect to dth-meaning Σ, then it signifies Σ.

The contents of all these postulates should be clear.

5. Symptosis

Each symptoson can be transformed into the corresponding symptosis which appears to be a system made up of thetonic categories, namely, thetoses. These categories, in turn, will be defined in terms of ptoses and ptotizygoses, to be introduced below.

The class of all ptotons which signify the same ptotonic meaning will be called a ***ptosis***. And, the ***family of all ptoses*** will be symbolized as ***PTS***. Categories such as Agent (***AGT***), Patient (***PAT***), Emittor (***EMR***), Receptor (***RCR***), Causator (***CSR***), Effector (***EFR***), etc. are nothing else but particular ptoses. Thus for example, Agent will

be understood here as the set of all ptotons which signify the meaning of Agentivity (***AGTY***), and Patient – as the set of all ptotons which signify the meaning of Patientivity (***PATY***). Consequently, Agent and Agentivity are two different entities, as are Patient and Patientivity.

The class of all ptotizygitors which signify the same ptotizygic meaning will be called a ***ptotizygosis***. And, the ***family of all ptotizygoses*** will be symbolized as ***PZS***. Categories such as Transitificator (***TSF***), Transmittificator (***TMF***), and Causofectificator (***CEF***), are particular ptotizygoses. Thus, for example, a Transitificator is the set of all ptotizygitors which signify the meaning of Transitificatority (***TSFTY***), and a Transmittificator, the set of all ptotizygitors which signify the meaning of Transmittificatority (***TMFTY***). And, in consequence, a Transitificator and Transitificatority are two different entities as are a Transmittificator and Transmittificatority.

From the summation of the families ***PTS*** and ***PZS*** there will result the ***family of all thetoses*** denoted as ***THS***. An element of this family, that is, a thetosis, is either a ptosis or a ptotizygosis.

The set of all thetoses associated with sentive s, with respect to dth-meaning Σ, will be symbolized as $\boldsymbol{thet}_{\boldsymbol{\Sigma}}{}^{<}s$. And, the relation of qualification binding the elements of this set, called the ***relation of thetosic qualification in*** s, with respect to Σ, will be denoted as $\boldsymbol{thsq}_{s/\Sigma}$. Subsequently, the concept of symptosis will be defined in terms of thetosic transformation of symptosons, that is, by replacing in them thetonic dictons by the corresponding thetoses.

Let us now assume that s is a sentive in the language under consideration L, and that the system ($\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s$, $\boldsymbol{dthq}_{s/\Sigma}$), such that $\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s = \{x_1, x_2, x_3\}$ and $\boldsymbol{dthq}_{s/\Sigma} = \{(x_1, x_2), (x_2, x_3)\}$, is the symptoson of s with respect to Σ, that is, $\boldsymbol{sps}_{\boldsymbol{\Sigma}}\text{‘}s = (\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s, \boldsymbol{dthq}_{s/\Sigma})$. This symptoson can also be symbolized in the form of the following graph:

$$x_1 \longleftarrow x_2 \longleftarrow x_3$$

in which the arrows indicate the relation $\boldsymbol{dthq}_{s/\Sigma}$.

To the symptoson $\boldsymbol{sps}_{\boldsymbol{\Sigma}}\text{‘}s$ there corresponds a system ($\boldsymbol{thet}_{\boldsymbol{\Sigma}}{}^{<}s$, $\boldsymbol{thsq}_{s/\Sigma}$), such that $\boldsymbol{thet}_{\boldsymbol{\Sigma}}{}^{<}s = \{X_1, X_2, X_3\}$ and $\boldsymbol{thsq}_{s/\Sigma} = \{(X_1, X_2), (X_2, X_3)\}$, in the sense that to each of the thetons x_i in $\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s$ there corresponds exactly one thetosis X_i in the family $\boldsymbol{thet}_{\boldsymbol{\Sigma}}{}^{<}s$, such that x_i is an element of X_i, and any x_i and x_j in $\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s$ are bound by the relation $\boldsymbol{dthq}_{s/\Sigma}$, iff their corresponding thetoses X_i and X_j are bound by the relation $\boldsymbol{thsq}_{s/\Sigma}$. We can also construct the graph:

$$X_1 \longleftarrow X_2 \longleftarrow X_3$$

such that X_1 is the thetosis corresponding to x_1, X_2 – the thetosis corresponding to x_2, and so on.

The system ($\boldsymbol{thet}_{\boldsymbol{\Sigma}}{}^{<}s$, $\boldsymbol{thsq}_{s/\Sigma}$) will be called the symptosis representing the symptoson ($\boldsymbol{dcth}_{\boldsymbol{\Sigma}}{}^{<}s$, $\boldsymbol{dthq}_{s/\Sigma}$) of sentive s, with respect to Σ, and it will be denoted as $\boldsymbol{Sps}_{\boldsymbol{\Sigma}}\text{‘}s$. From the definition of symptosis there follows that this concept always

presupposes the existence of a corresponding symptoson. Thus, if there is a symptosis of *s* with respect to Σ, there also must be in *s* a corresponding symptoson with respect to Σ.

Ex: The transitive symptoson of the sentence *s* = *Musuko-wa chichi-ni tegami-wo kaita*, that is:

$\boldsymbol{sps_{TS}}$'*s* = ({*musko-wa*, *tegami-wo*, *kaita*}, {(*musko-wa*, *kaita*), (*kaita*, *tegami-wo*)}),

is thus represented by the transitive symptosis, that is:

$\boldsymbol{Sps_{TS}}$'*s* = ({***AGT***, ***PAT***, ***TSF***}, {(***AGT***, ***TSF***), (***TSF***, ***PAT***)}).

Equivalently, we can say that the graph:

Musko-wa ⟵ *kaita* ⟵ *tegami-wo*

is represented by the graph:

AGT ⟵ ***TSF*** ⟵ ***PAT***

The symptoses specified by the same dth-meaning Σ may differ in one and the same language *L*. It seems that in the diathetological grammar of Japanese the following postulate should be accepted:

Po 14 The dth-meaning of Transitivity specifies in Japanese only the following three symptoses:

1. ({***AGT***, ***PAT***, ***TSF***}, {(***AGT***, ***TSF***), (***TSF***, ***PAT***)}),
2. ({***AGT***, ***PAT***, ***TSF***}, {(***PAT***, ***TSF***), (***TSF***, ***AGT***)}),
3. ({***AGT***, ***PAT***, ***TSF***}, {(***TSF***, ***AGT***), (***TSF***, ***PAT***)}).

These symptoses represent the corresponding symposons within, among others, the following Japanese sentives, respectively:

1. (i) *Neko-wa nezumi-wo tsukamaeta*. 'The cat caught a mouse'.
   (ii) *Nezumi-wo tsukamaeta neko-wa* (*kurokatta*). 'The cat which caught a mouse (was black)'.
2. (iii) *Nezumi-ga neko-ni tsukamaerareta*. 'A mouse was caught by the cat'.
   (iv) *Neko-ni tsukamaerareta nezumi-wa* (*chiisakatta*). 'The mouse caught by the cat (was small)'.
   (v) *Neko-ga tsukamaeta nezumi-wa* (*chiisakatta*). 'The mouse which the cat caught (was small)'.
   (vi) *Neko-no tsukamaeta nezumi-wa* (*nigete mita*). 'A mouse which the cat caught (tried to escape)'.

3. (vii) *Nezumi-wo neko-ga tsukamaeta koto-wa* (*kanashikatta*). 'The catching of a mouse by the cat (was a pity)'.
   (viii) *Neko-ni nezumi-ga tsukamaerareta koto-wa* (*kanashikatta*). 'The mouse's being caught by the cat (was a pity)'.

The concept of symptosis is also instrumental in defining the ***relation of symptosic flection***, with respect to dth-meaning Σ. This relation will be denoted as $\boldsymbol{fsps_{\Sigma}}$. We shall say that any two sentives are bound by this relation, iff they are homolexical and signify Σ, but their symptosons with respect to Σ are represented by different symptoses. Thus, for example, the Japanese sentives 1.(i) and 2.(iii) bear the relation $\boldsymbol{fsps_{TS}}$, but the sentives 1.(i) and 1.(ii) do not.

6. Concasion

Every concason can be transformed into the corresponding concasion which appears to be a system made up of positon-dictonal categories, that is, of positons. These categories will be defined in terms of cases and voices, to be introduced below.

The class of all case-dictons which are homocasual, that is, occur in the same case, will be called a *case*. The ***family of all cases*** will be denoted by the symbol ***CAS***. Categories such as Nominative (***NOM***), Genitive (***GEN***), Dative (***DAT***), and Accusative (***ACC***), are particular cases.

The class of all voice-dictons which are homovoiceal, i.e., occur in the same voice, will be called a *voice*. The ***family of all voices*** will be denoted by the symbol ***VOC***. Categories such as: Active verb (***VAC***), Passive verb (***VPA***), Verbal noun (***NVB***), Active participle (***PAC***), and Passive participle (***PPA***), are some particular voices.

The family ***CAS*** and the family ***VOC***, if united, will jointly form the ***family of all positons***, to be denoted as ***PON***. An element of this family, that is, a positon, is either a case or a voice.

The set of all positons associated with sentive *s* will be symbolized as $\boldsymbol{pos^{<}s}$, and the relation of qualification binding the elements of this set, called the ***relation of positonal qualification in*** *s*, will be denoted as $\boldsymbol{posq_s}$.

Let us now suppose that *s* is a sentive in the language under consideration *L*. Let the system (*X*, *R*), such that $X \subset \boldsymbol{dcpo^{<}}s$, and $R \subset \boldsymbol{dpoq_s}$, and $X = \{x_1, x_2, x_3\}$, and $R = \{(x_1, x_2), (x_2, x_3)\}$, be a concason of *s*, that is $(X, R) \subset \boldsymbol{ccs^{>}}s$. This concason can also be symbolized by means of the following graph:

$$x_1 \longleftarrow x_2 \longleftarrow x_3$$

in which the arrows indicate the relation *R*.

To the concason (*X*, *R*) there corresponds a system ($\mathscr{X}$, $\mathscr{R}$), such that $\mathscr{X} \subset \boldsymbol{pos^{<}}s$ and $\mathscr{R} \subset \boldsymbol{posq_s}$, and $\mathscr{X} = \{X_1, X_2, X_3\}$ and $\mathscr{R} = \{(X_1, X_2), (X_2, X_3)\}$, in the sense that to each of the positon-dictons x_i in *X* there corresponds exactly one positon X_i in the family $\mathscr{X}$, and each x_i and x_j in *X* are bound by the relation *R*, iff the corresponding positons X_i and X_j in $\mathscr{X}$ are bound by the relation $\mathscr{R}$. We can also construct the graph:

$$X_1 \longleftarrow X_2 \longleftarrow X_3$$

such that X_1 is the positon corresponding to x_1, X_2 is the positon corresponding to x_2, and so on.

The system ($\mathscr{X}$, $\mathscr{R}$) will be called the concasion representing the concason (X, R) of sentive s. The set of all concasions by which s is operated will be denoted by $\boldsymbol{Ccs}^{>}s$. Consequently, ($\mathscr{X}$, $\mathscr{R}$) is an element of $\boldsymbol{Ccs}^{>}s$. Formally, ($\mathscr{X}$, $\mathscr{R}$) $\in$ $\boldsymbol{Ccs}^{>}s$.

Ex: The concason ({*musuko-wa*, *tegami-wo*, *kaita*}, {(*musko-wa*, *kaita*), (*kaita*, *tegami-wo*)}) is thus represented by the following concasion: ({***NOM***, ***ACC***, ***VAC***}, {(***NOM***, ***VAC***), (***VAC***, ***ACC***)}). Equivalently we can say that the graph:

musuko-wa ⟵ *kaita* ⟵ *tegami-wo*

is represented by the graph:

NOM ⟵ ***VAC*** ⟵ ***ACC***.

Analoguously to the relation of symptosic flection we shall also introduce the ***relation of concasional flection*** (***fccs***). Two sentives will be bound by this relation, iff they are homolexical but their concasons are represented by different concasions.

One of the fundamental concepts of diathetology is certainly that of ***diathetic paradigm***. It will be conceived of as a class of sentives fulfilling certain conditions. A definition of this concept may be surveyed along the following lines:

A class of sentives is a dth-paradigm P established with regard to dth-meaning Σ, iff it satisfies, among other postulates, the following:

Po (i) All sentives belonging to P signify Σ,
Po (ii) All sentives belonging to P are homolexical,
Po (iii) Any two different sentives belonging to P are either in the relation $\boldsymbol{fsps}_{\Sigma}$ or in the relation ***fccs***.

All the sentives (i) – (viii) represented by symptoses 1. – 3. form a dth-paradigm with regard to Transitivity (cf. page 6 – 7).

Symptoses characterizing sentives are dependent upon the corresponding concasions operating within these sentives. Putting if differently, we can also say that certain concasions of sentive s specify appropriate symptoses. In order to reflect upon this dependency we shall avail ourselves of the ***relation of concasional symptosis specification for***. And, we shall say that :

> concasion $\mathfrak{C}$ specifies symptosis $\mathfrak{S}$ for sentive s, if s is characterized by symptosis s on condition that it is characterized by concasion $\mathfrak{C}$, and if concason c in s, represented by $\mathfrak{C}$, is at the same time the symptoson in s represented by $\mathfrak{S}$.

Let us now exemplify the idea behind concasional symptosis specification. For this purpose let us again avail ourselves of Japanese sentive s = *Musuko-wa chichi-ni tegami-wo kaita*. Various concasons may be distinguished within s. However, not all of them will be represented by concasions specifying full symptoses. Thus, for example, the concason ({*kaita*, *tegami-wo*},{(*kaita*, *tegami-wo*)}) is represented by concasion ({***VAC***, ***ACC***}, {(***VAC***, ***ACC***)}) . But this concasion does not specify a full symptosis, and may be disregarded for the time being. On the contrary, the concason ({*musuko-wa*, *tegami-wo*, *kaita*}, {(*musuko-wa*, *kaita*), (*kaita*, *tegami-wo*)}) is represented by concasion ({***NOM***, ***ACC***, ***VAC***}, {(***NOM***, ***VAC***), (***VAC***, ***ACC***)}), which unambiguously specifies symptosis ({***AGT***, ***PAT***, ***TSF***}, {(***AGT***, ***TSF***), (***TSF***, ***PAT***)}). And this is transitive symptosis. The symptoson represented by this symptosis is identical with the concason represented by the concasion in question.

Within the diathetological grammar of Japanese the following postulates should also be accepted:

Po 15 Concasion ({***NOM***, ***ACC***, ***VAC***}, {(***NOM***, ***VAC***), (***VAC***, ***ACC***)}), specifies symptosis ({ ***AGT***, ***PAT***, ***TSF*** }, {(***AGT***, ***TSF***), (***TSF***, ***PAT***)}).
Po 16 Concasion ({***NOM***, ***DAT***, ***VPA***}, {(***NOM***, ***VPA***), (***VPA***, ***DAT***)}), specifies symptosis ({ ***AGT***, ***PAT***, ***TSF***}, {(***PAT***, ***TSF***), (***TSF***, ***AGT***)}).
Po 17 Concasion ({***NOM***, ***ACC***, ***NVB***}, {(***NVB***, ***NOM***), (***NVB***, ***ACC***)}), specifies symptosis ({ ***AGT***, ***PAT***, ***TSF***}, {(***TSF***, ***AGT***), (***TSF***, ***PAT***)}).

7. Diathetification

The determination of the diathetic status of the sentives could be called diathetification, and it would also embrace their diathetic categorization. Thus, for example, particular categories of sentives should be defined. As we already mentioned at the beginning of our article, a grammar of a language, understood as a theory of this language, should make it possible to formulate and to prove theorems about it. Consequently, within diathetology, as a grammar of diathesis, it should be possible to formulate and to prove theorems concerning diathesis. In what follows we would like to show what the procedure of proving that a sentive of a given language is transitive should look like, that is, what steps it should incorporate.

A transitive sentive in language L will be defined as every sentive of L which signifies the dth-meaning of Transitivity (abbreviated as ***TS***). Expressing it differently, the set of transitive sentives in L has as its elements only those sentives which signify ***TS***.

Let us then formulate the following theorem: The Japanese sentence s = *Daigaku-no gakusei-wa kono benrina jisho-wo yoku tsukau* 'University students often use this useful dictionary' is transitive, or in other words, it belongs to the set of transitive sentences of this language. In order to prove this theorem, basing ourselves on the diathetological grammar, it should be shown first that:

(i) *s* signifies ***TS*** (from the definition of transitive sentives it follows that if a sentive signifies ***TS***, then it is transitive itself);
(ii) In order to show that *s* signifies ***TS***, we have to show first that:
(iii) *s* has a transitive symptoson, (because Po 13 says that if a sentive has a transitive symptoson, then it signifies ***TS***);
(iv) In order to show that *s* has a transitive symptoson, we have to show first that there is in *s* a symptoson represented by transitive symptosis, (since from the definition of symptosis there follows that if a sentive has a symptosis with respect to Σ, then obligatorily it also must have a cor-responding symptoson with respect to Σ;
(v) The existence of transitive symptosis of *s* depends upon an appropriate concasion of *s*. (Po 15-17 state which concasions specify which transitive symptoses in language *L*.) We have thus to show that:
(vi) *s* has a concasion which specifies a transitive symptosis of *s*;
(vii) The existence of each concasion of *s* depends, in turn, upon the corresponding concason in *s*, which is represented by this concasion;
(viii) In order to show that (vi) holds, we have to find out whether there is an appropriate concason in *s*.

Thus, while proving our theorem we have to reverse the above procedure, and start with

(i) the identification of all concasons in *s*.
(ii) Among these concasons one has the form: ({*gakusei-wa*, *jisho-wo*, *tsukau*}, {(*gakusei-wa*, *tsukau*), (*tsukau*, *jisho-wo*)}).
(iii) This concason is represented by the concasion ({***NOM***, ***ACC***, ***VAC***}, {(***NOM***, ***VAC***), (***VAC***, ***ACC***)}).
(iv) This concasion, in turn, specifies symptosis ({***AGT***, ***PAT***, ***TSF***}, {(***AGT***, ***TSF***), (***TSF***, ***PAT***)}), which appears to be a transitive symptosis (cf. Po 12 – 15).
(v) This symptosis represents the corresponding transitive symptoson in *s*, which is identical with the concason in *s*, given in (ii), (cf. definition of the relation of concasional symptosis specification for);
(vi) If *s* has a transitive symptoson, then it signifies ***TS*** (cf. Po 13);
(vii) And, if *s* signifies ***TS***, then it belongs to the set of transitive sentences in Japanese.
qed

Although at the end of our proof we have put the abbreviation qed (*quod erat demonstrandum*), it is obvious that it is not a formal proof, since we have not availed ourselves of the formal language which would guarantee a precise and unambiguous formulation of the theorems and definitions. However, an axiomatic version of this article will already make an extensive use of formal language, and the proof in question will assume there a more appropriate shape.

8. Concluding remarks

As has already been stated at the beginning of our paper, the current diathetological inquiry concerns only a fragment of diathetic reality. First some theoretical principles of diathetology were discussed, while primitive terms were explained and some of the postulates enumerated. Subsequently, we proceeded to define such fundamental diathetological concepts as symptoson, symptosis, concason, concasion, and symptosic flection. Of special importance for diathetology is the interaction between symptoses and concasions, in the sense that the latter specify the former. Taking this interaction into account is absolutely necessary for proving the theorem formulated above.

Applying general diathetological principles to Japanese, we are able to show whether a sentence of this language is transitive or not. The proof procedure could be formalized, if a formal language would be used.

As can be rightly inferred, the proposed diathetological theory could be expanded in various directions.

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