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ORIGIN OF TRANSITIVE-INTRANSITIVE VERB PAIRS IN JAPANESE

Pairs of transitive and intransitive¹ verbs constitute in Japanese a large group (a list of such pairs which the present writer has compiled consists of some 300 items, although it is still far from being complete), however their origin does not seem to have been satisfactorily explained.

Of great importance for the idea presented here is the close semantic relationship between the categories of the passive (more exactly: spontaneity) and the causative on the one hand and paired verbs on the other. This has been stressed in works by Japanese linguists (Takeuchi 1981, 44-48; Okutsu 1990, 111-113; Noda 1996, 138-145),² as well as in studies discussing transitivity in European languages (cf., e.g., Holvoet 1991, 53: 'Causativity as prototypical transitivity').

The pairs of transitive and intransitive verbs to be found in Modern Japanese can be grouped into the following morphological types³:

- | | |
|--|---|
| a) <i>-ar-u</i> : <i>-\emptyset-u</i> | e.g. <i>fusag-ar-u</i> : <i>fusag-u</i> |
| b) <i>-(w)ar-u</i> : <i>-\emptyset-eru</i> | e.g. <i>ag-ar-u</i> : <i>ag-eru</i> , <i>ka-war-u</i> : <i>ka-eru</i> |
| c) <i>-(w)ar-eru</i> : <i>-\emptyset-eru</i> | e.g. <i>wak-ar-eru</i> : <i>wak-eru</i> , <i>tora-war-eru</i> : <i>tora-eru</i> |
| d) <i>-or-u</i> : <i>-\emptyset-u</i> | e.g. <i>tsum-or-u</i> : <i>tsum-u</i> |
| e) <i>-or-eru</i> : <i>-\emptyset-eru</i> | e.g. <i>um-or-eru</i> : <i>um-u</i> |
| f) <i>-[y]-eru</i> : <i>-\emptyset-ru</i> | e.g. <i>mi-[y]-eru</i> : <i>mi-ru</i> |
| g) <i>-o[y]-eru</i> : <i>-\emptyset-u</i> | e.g. <i>kik-o[y]-eru</i> : <i>kik-u</i> |
| h) <i>-\emptyset-u</i> : <i>-(w)as-u</i> ⁴ | e.g. <i>chir-u</i> : <i>chir-as-u</i> , <i>mayo-u</i> : <i>mayo-was-u</i> |

¹ In the present article only paired verbs will be dealt with, i.e. those which possess common lexical morphemes and specific suffixes denoting their transitivity, and accordingly only elements of such pairs will be called 'transitive' or 'intransitive' (this practice has a long tradition in Japanese linguistics, cf. Abe 1990b, 86).

² Thus, e.g., K. Okutsu (1990, 112) defines intransitive verb as 'dōsashu-ni-wa me-o mukezu, [...] jihatsuteki-na dōsa-to shite noberu [...]' ('it expresses an action as a spontaneous one, disregarding the doer') (emphasis added).

³ Throughout the article the verb given first in a pair is intransitive.

- i) $-\emptyset-u$: $-os-u$ e.g. *oyob-u* : *oyob-os-u*
j) $-\emptyset-eru$: $-(y)as-u$ e.g. *ak-eru* : *ak-as-u*, *hi-eru* : *hi-ya-su*
k) $-\emptyset-eru$: $-as-eru$ e.g. *fukur-eru* : *fukur-as-eru*
l) $-\emptyset-iru$: $-as-u$ e.g. *ik-iru* : *ik-as-u*
m) $-\emptyset-iru$: $-as-eru$ e.g. *hokorob-iru* : *hokorob-as-eru*
n) $-\emptyset-iru$: $-os-u$ e.g. *h-iru* : *h-os-u*
o) $-\emptyset-iru$: $-us-u$ e.g. *tsuk-iru* : *tsuk-us-u*
p) $-\emptyset-ru$: $-s-eru$ ⁵ e.g. *ki-ru* : *ki-s-eru*
q) $-r-u$: $-s-u$ e.g. *ama-r-u* : *ama-s-u*
r) $-r-u$: $-s-eru$ e.g. *no-r-u* : *no-s-eru*
s) $-r-eru$: $-s-u$ e.g. *arawa-r-eru* : *arawa-s-u*
t) $-r-iru$: $-s-u$ e.g. *ta-r-iru* : *ta-s-u*
u) $-[y]-eru$: $-s-u$ e.g. *ko-[y]-eru* : *ko-s-u*
v) $-\emptyset-u$: $-\emptyset-eru$ e.g. *ak-u* : *ak-eru*
w) $-\emptyset-eru$: $-\emptyset-u$ e.g. *war-eru* : *war-u*
x) other e.g. *hairu* : *ireru*, *kieru* : *kesu*, *neru* : *nekaseru*,
taeru : *tatsu*, &c.

The quantitative distribution of the above types based on the list compiled by the present writer is as shown:

Type	Quantity	%
a	8	2.61
b	63	20.59
c	3	0.98
d	1	0.33
e	1	0.33
f	2	0.65
g	1	0.33
h	30	9.80
i	1	0.33
j	42	13.73
k	2	0.65
l	4	1.31
m	1	0.33
n	6	1.96
o	1	0.33
p	3	0.98

⁴ Verbs included in this group are not abbreviated causatives (with the suffix *-su*), for it is possible to create a causative form based upon them (Martin 1991, 287-288).

⁵ The first element of this pair is a vocalic verb (*ki-ru*), unlike the group *r*, where the first element is a consonantal verb (*nor-u*).

Type	Quantity	%
q	25	8.17
r	3	0.98
s	18	5.88
t	1	0.33
u	2	0.65
v	48	15.69
w	30	9.80
x	10	3.27
Total	306	100.00

A careful analysis of those types reveals the following regularity: the stem (i.e. the part of a verb remaining after cutting off *-u* from consonantal verbs or *-eru* / *-iru* from vocalic ones⁶) of many intransitive verbs ends in *-r-* (or *-[y]-*), whereas the stem of many transitive verbs ends in *-s-*. The only exceptions are groups *v* and *w*, which mark transitivity by means of different conjugations: vocalic (*ichidan*) or consonantal (*godan*). Thus, the number of those types can be reduced to four (Abe 1990b, 92-93):

1. pairs wherein one element is a derivative formed on the basis of the other element:
 - 1.a. intransitive verbs derived from transitive roots by suffixing *-r-* (or *-[y]-*) (both elements of a pair can be vocalic or consonantal verbs) – types *a – g*,
 - 1.b. transitive verbs derived from intransitive roots by suffixing *-s-* (with the observation as above) – types *h – p*;
2. bipolarity – both elements are derived from a root which does not appear independently, *-r-* (*-[y]-*) forming intransitive verbs and *-s-* forming transitive ones (with the observation as above) – types *q – u*;
3. pairs wherein the opposition of transitivity is based on different conjugations – types *v* and *w*;
4. irregular formations – type *x*.

As in the groups 1 and 2 at least one element of a given pair is marked with a suffix, it allows one to determine faultlessly which element is the transitive one and which is the intransitive one, e.g.:

tom-ar-u (intr.) : *tom-eru* (tr.)

och-iru (intr.) : *ot-os-u* (tr.)

no-r-u (intr.) : *no-s-eru* (tr.).

⁶ The Old Japanese stem (different from the modern one) is meant here, cf. the table in fn. 7.

In the third group, however, it is impossible to establish any rule, since sometimes the intransitive verb is a consonantal one and transitive verb is a vocalic one (type *v*), and sometimes the reverse holds true (type *w*).

A diachronic approach suggests that the mentioned suffixes should be connected with the morphemes of the passive and the causative respectively: *-r-* with OJ *-ru* (> CJ *-(ra)ru* > ModJ *-(ra)reru*) and *-s-* with OJ *-su* (> CJ *-(sa)su* > ModJ *-(sa)seru*). This of course is neither a new idea – it seems to have first been entertained in 1829 by Motoori Haruniwa in his ‘Kotoba-no kayoiji’ (cf. Kondō 1990, 175) – nor a unique one, and can be found in numerous works by other scholars (e.g. Sansom 1928, 200; Kolpakči 1956, 60; Takeuchi 1981, 41-42; Syromiatnikov 1981, 76; Syromjatnikov 1983, 81; Martin 1987, 672; 1991, 288; Abe 1990b, 91; Okutsu 1990, 114; Lewin 1996, 120; Ōno 1996, 1468-1469; Shibatani 1996, 236). One is even tempted to suggest that the suffixes of transitivity and the morphemes of the passive and the causative are in fact the same. However, in order to do thus three difficulties must be overcome:

- various conjugational types attested in Old Japanese⁷;

⁷ Each form of an Old Japanese (and Classical Japanese) verb consisted of a stem, which never occurred independently because of its (predominantly) consonantal auslaut, and an inflexional ending, which together composed a free-standing form or a basis to which auxiliaries (*jodōshi*) were attached in the agglutinative manner (Syromjatnikov 1983, 78-79). Traditionally, six such forms (bases, *katsuyōkei*) are described (Ikeda 1980, 26-27; Lewin 1996, 104-105): Imperfect (*mizenkei*), Conjunctive (*ren'yōkei*), Predicative (*shūshikei*), Attributive (*rentaikei*), Perfect (*izenkei*) and Imperative (*meireikei*). Taking into account those six bases, eight conjugations are recognised in Old Japanese (nine in Classical Japanese): Quadrigrade [4] (*yodan*), Lower Bigrade [2L] (*shimo-nidan*), Upper Bigrade [2U] (*kami-nidan*), Upper Unigrade [1U] (*kami-ichidan*), four Irregular Conjugations (*ra-hen*, *na-hen*, *sa-hen*, *ka-hen*), and also Lower Unigrade [1L] (*shimo-ichidan*) in Classical Japanese. Their inflexion was as follows (Yamaguchi et al. 1997, 19; Abe 1990a, 80-83):

	Imperfect	Conjunctive	Predicative	Attributive	Perfect	Imperative
4	<i>sak-a</i>	<i>sak-i₁</i>	<i>sak-u</i>	<i>sak-u</i>	<i>sak-e₂</i>	<i>sak-e₁</i>
2L	<i>ak-e₂</i>	<i>ak-e₂</i>	<i>ak-u</i>	<i>ak-uru</i>	<i>ak-ure</i>	<i>ak-e₂[yo₂]</i>
2U	<i>ok-i₂</i>	<i>ok-i₂</i>	<i>ok-u</i>	<i>ok-uru</i>	<i>ok-ure</i>	<i>ok-i₂[yo₂]</i>
1U	<i>mi₁</i>	<i>mi₁</i>	<i>mi₁-ru</i>	<i>mi₁-ru</i>	<i>mi₁-re</i>	<i>mi₁[yo₂]</i>
Irregular	<i>ar-a</i>	<i>ar-i</i>	<i>ar-i</i>	<i>ar-u</i>	<i>ar-e</i>	<i>ar-e</i>
	<i>sin-a</i>	<i>sin-i</i>	<i>sin-u</i>	<i>sin-uru</i>	<i>sin-ure</i>	<i>sin-e</i>
	<i>s-e</i>	<i>s-i</i>	<i>s-u</i>	<i>s-uru</i>	<i>s-ure</i>	<i>s-e[yo₂]</i>
	<i>k-o₂</i>	<i>k-i₁</i>	<i>k-u</i>	<i>k-uru</i>	<i>k-ure</i>	<i>k-o₂</i>
1L	<i>ke</i>	<i>ke</i>	<i>ke-ru</i>	<i>ke-ru</i>	<i>ke-re</i>	<i>ke[yo]</i>

To the Quadrigrade conjugation belonged the great majority of Old Japanese verbs and it was only in the following periods that some of them changed their inflexional type to Lower Bigrade (mainly) or Upper Bigrade (Yamaguchi et al. 1997, 18; Abe 1990a, 81).

- the forms of the suffixes differing from those of the auxiliaries⁸;
- the vowels found before the suffixes, differing from the ones required in front of the auxiliaries (Imperfect Base, *mizenkei*, is expected here).

The explanation put forward in the present study is based on the supposition that virtually all Proto-Japanese verbs were inflected as Quadrigrade (thus, they must have been neutral with respect to their transitivity; such verbs are touched upon by E. M. Kolpakčič 1956, 41; 51-52, and S. E. Martin 1991, 308-309) and their passive or causative forms were lexicalised as members of Modern Japanese transitive-intransitive verb pairs. With this in mind, the three above mentioned difficulties need be solved now.

1. The derivational types are, of course, not mere grammatical formations; these have different shapes, e.g.:

- the passive of *ageru* is *agerareru*, but its intransitive counterpart: *agaru*
- the causative of *akeru* is *akesaseru*, but its transitive counterpart: *akasu*.

1.1. The first problem arising here is the question of conjugations. Eight inflexional types attested in Old Japanese texts can be divided into three classes (Abe 1990a, 79):

- i. alternating: 4 and *ra-hen*,

For the history of verbal inflexion, see Lewin 1996, 117-118.

All Old Japanese and Classical Japanese word forms in the present study are cited from the ‘Iwanami-kogo-jiten’, unless otherwise indicated.

⁸ The morphemes of the passive (*-ru*, *-raru*; *-yu*, *-rayu*) and the causative (*-su*, *-sasu*; *-simu*) in Old Japanese belonged to auxiliaries (*jodōshi*); they all required the Imperfect form and were inflected according to the Lower Bigrade pattern (except for the honorific *-su* [4]). The shorter forms occurred after *-a-*, the longer ones – after other vowels. The passive morphemes had several functions, but their original meaning seems to have been spontaneity (Ōno 1996, 1470; Yamaguchi et al. 1997, 56; Takeuchi 1981, 44). Both passive and causative auxiliaries could also express respect. Their usage was as shown (Ōno 1996, 1468-1470; Yamaguchi et al. 1997, 22-23; 56-57):

	Old Japanese		Classical Japanese	
	PASS. / CAUS.	HONORIFIC	PASS. / CAUS.	HONORIFIC
<i>-(ra)yu</i> [2L]	+	–	–	–
<i>-ru</i> [2L]	+	–	+	+
<i>-raru</i> [2L]	–	–	+	+
<i>-su</i> [2L]	+	–	+	+
<i>-sasū</i> [2L]	–	–	+	+
<i>-su</i> [4]	–	+	–	–
<i>-simu</i> [2L]	+	–	(+)	+

-simu may be genetically related to *-(sa)su* (cf. Aoki 1981, 456₂₋₃), but seems irrelevant for the matter under consideration.

- ii. suffixal: 1U (also 1L in Classical Japanese),
- iii. hybrid: 2U, 2L, *ka-hen*, *sa-hen*, *na-hen*.

If the original conjugation – of both verbs and auxiliaries – in Proto-Japanese was truly Quadrigrade, as is assumed here, then the derivational types should present no problems whatsoever as far as conjugation is concerned. Taking the same examples:

**agu* [4] (> OJ *agu* [2L] > ModJ *ageru*) → **aga-* + **-ru* [4] = OJ/ModJ
agaru

**aku* [4] (> OJ *aku* [2L] > ModJ *akeru*) → **aka-* + **-su* [4] = OJ/ModJ
akasu.

Such a development is further justified by verbs which are attested in Old Japanese as Quadrigrade, e.g. OJ *taru* [4] ‘to hang’ (> [2L] > ModJ *tareru*) → OJ/ModJ *tarasu*.

It was already G. B. Sansom who entertained the possibility that Proto-Japanese verbs were originally inflected as Quadrigrade.⁹ One may also cite a large number of verbs which only after the Old Japanese period moved from Quadrigrade to one of the Bigrade conjugations. Moreover, it may be worth mentioning that Quadrigrade (just as its Modern Japanese descendant) was in Old Japanese the most numerous paradigm and constituted together with Lower Bigrade basic conjugations (Abe 1990a, 80; 1990b, 92). Given this, the idea seems tempting that Quadrigrade was a starting point for the further development of the inflexion of many verbs, a development which can in brief be described as the passage from the alternating type through the hybrid to the suffixal one (the latter change took place already in the historical period and is known as *ichidanka*).¹⁰

This does not mean, of course, that each verb altered its inflexion after derivation. There are also ‘pure’ types (*a* and *h*), e.g.:

OJ/ModJ *fusagu* → OJ/ModJ *fusagaru*

OJ *tiru* → OJ *tirasu* (> ModJ *chiru* : *chirasu*).

Much more frequently, however, the transition to Lower Bigrade (or less often Upper Bigrade) can be observed; in several cases it affected both elements of a given pair,¹¹ e.g.:

**agu* [4] (> OJ *agu* [2L] > ModJ *ageru*) → OJ/ModJ *agaru*

⁹ G. B. Sansom (1928, 151-156) derives all Old Japanese conjugations from the *na-hen* type or (which he judges less probable) Quadrigrade. As in both conjugations the Imperfect Base has the same form, it is not important for the present study, albeit the latter appears more plausible and would be supported by the explanation put forward here. Cf. also Lewin 1996, 121.

¹⁰ The whole process would consist in a gradual removal of alternation (cf. Mańczak 1958, 301-312).

¹¹ The destination paradigm for a base and a derivative need not be the same (cf. type *m*).

**aku* [4] (> OJ *aku* [2L] > ModJ *akeru*) → OJ/ModJ *akasu*
 OJ/CJ *iku* [4] (> ModJ *ikiru*) → ModJ *ikasu*
 OJ *waku* [4 > 2L] (> ModJ *wakeru*) → OJ *wakaru* [*4 > 2L] > ModJ *wakareru*.

None the less, the existence of the Upper Unigrade conjugation (besides the Quadrigrade) must be recognised in Proto-Japanese, for this is the only way to explain the structure of the type *p*, e.g.:

OJ *ki₁ru* [1U] (> ModJ *kiru*) → **ki₁su* [4] > OJ *ki₁su* [2L] > ModJ *kiseru*.

The type *f* is much the same, but it is formed by means of the suffix *-yu*, instead of *-ru*, a suffix encountered also in other pairs (it is not clear whether the original conjugation of *-yu* was Quadrigrade too, since all verbs attested with this suffix are inflected as Lower Bigrade¹²). Thus, e.g.:

OJ *mi₁ru* [1U] (> ModJ *miru*) → **mi₁yu* [?] > OJ *mi₁yu* [2L] > ModJ *mieru*.

1.2. The auxiliaries of the passive and the causative, then, can be said to have been originally conjugated (like the vast majority of verbs) as Quadrigrade, and to have sprung from the same source as the suffixes forming transitive pairs. What must be explained now is their twofold manifestation: *-ru* ~ *-raru* and *-su* ~ *-sasu*. The longer forms can be analysed as analogical enlargement of the shorter ones. In the most numerous class of verbs, namely Quadrigrade, before *-ru* and *-su* almost always (see below) *-a-* can be found, whereas in the remaining conjugations only other vowels occur. It may therefore be argued that due to the influence of the Imperfect Base of Quadrigrade verbs, the suffixes *-ru* and *-su* were augmented by the vowel *-a-* and the resulting hiatus was then eliminated by insertion of the same consonant as appeared in the suffix proper,¹³ e.g.:

OJ *agu* [2L] → passive: **age₂-ru* > **age₂-a-ru* > *age₂-r-a-ru* (= OJ *age₂ra-ru* > ModJ *agerareru*)

analogically to: OJ *kak-a-ru* (← *kaku* [4])

OJ *mi₁ru* [1U] → causative: **mi₁-su* > **mi₁-a-su* > *mi₁-s-a-su* (= OJ *mi₁sa-su* > ModJ *misaseru*)

analogically to: OJ *kak-a-su* (← *kaku* [4]).

¹² An attempt to explain this phenomenon was made by M. Takeuchi (1981, 41).

¹³ The identity of *-ru* and *-raru* on the one hand and *-su* and *-sasu* on the other is mentioned by Y. Kondō (1990, 178). G. B. Sansom (1928, 170) postulates the reverse development.

The above is supported by some honorific forms attested in Old Japanese¹⁴ which seem to have undergone an alternative development, consisting in the syncope of the final vowel of the base or monophthongisation (these probably took place at an earlier stage):

OJ *nasu* < **ne-a-su* < **ne-su* ← OJ *nu* [2L] ‘to sleep’

OJ *ke₁su* < **ki₁-a-su* < **ki₁-su* ← OJ *ki₁ru* [1U] ‘to wear’ (in accordance with the sound-change: *i₁ + a > e₁*¹⁵)

OJ *me₁su* < **mi₁-a-su* < **mi₁-su* ← OJ *mi₁ru* [1U] ‘to see’ (as above)

(cf. Sansom 1928, 166-169; Lewin 1996, 157-158; Yamaguchi et al. 1997, 34).

Certain dialectal forms, such as *neyareru*, *neyasu* (the district of Kinki), *neraseru* (Tōhoku),¹⁶ showing other hiatus-fillers, would also confirm the analysis.

This still leaves the form *-rayu* (besides *-yu*) unclear, but as it is attested with one verb only (Kondō 1990, 178), it does not seem significant.

Given all this, the probable development of the form, inflexion and meaning of the auxiliaries, which took place already after the lexicalisation of transitive pairs, can be tabulated as follows:

	*-su [4] ¹⁷ CAUS.-TR.	*-ru [4] SPONT.-INTR.	*-yu [?] SPONT.-INTR.
	renewal ↓ -su [2L] CAUS.	↓ -ru [2L] SPONT.-PASS.	↓ -yu [2L] SPONT.-PASS.
	↓ -su [4] HONOR.	↓ -ru [2L] SPONT.-PASS.	↓ -yu [2L] SPONT.-PASS.
OJ	renewal -su [2L] CAUS.	-ru [2L] SPONT.-PASS.	-yu [2L] SPONT.-PASS.
	↓ -su [4] HONOR.	↓ -ru [2L] SPONT.-PASS.	↓ -yu [2L] SPONT.-PASS.
CJ	-su [2L] -sas _u [2L] CAUS.-HONOR.	-ru [2L] -raru [2L] SPONT.-PASS.-HONOR.	-yu [2L] ?-rayu [2L] SPONT.-PASS.

As can be seen from the table, the basic opposition of the auxiliaries (hence, the basic opposition of paired verbs) was spontaneity vs causativity (cf. Takeuchi 1981, 45).

¹⁴ Those forms are derived from verbs by means of the suffix *-su* [4] (cf. fn. 8), which is generally judged identical to the causative suffix (Sansom 1928, 164-167; Ōno 1996, 1469), though of a different opinion is for example Y. Kondō (1990, 179).

¹⁵ Cf. Wenck 1959, 10.

¹⁶ Passive and causative forms of the verb *neru* ‘to sleep’ (Sanada 1984, 110). Cf. also *neru*: *nekas-u/eru* below.

¹⁷ Cf. Ōno 1996, 1469.

¹⁸ Cf. ModJ *nasaru* (although MJ *nasaru* [2L]) ‘to condescend (to do something)’ (?← OJ/ModJ *nasu* [4] ‘to do’).

1.3. There is one more problem connected with the origin of derivatives, namely the question of vowels occurring before the suffix *-ru* or *-su* (types *d*, *e*, *g*, *i*, *n* and *o*). The Imperfect Base of Quadrigrade verbs ends invariably in *-a-*, whereas in transitive pairs also other vowels appear (the aforementioned ‘almost’), although *-a-* remains the most frequent one:

- a-* e.g. OJ *agaru* : *agu* [2L]
- o₂-* e.g. OJ *oturu* [2U] : *oto₂su*
- o-* e.g. OJ *tumoru* : *tumu* [4]
- u-* e.g. OJ *tukuru* [2U] : *tukusu*.

This irregularity, however, comprises in the class of derivatives only eleven pairs:

Type	Modern Japanese	Old Japanese
d	<i>tsumoru</i> ‘to accumulate’ : <i>tsumu</i>	<i>tumoru</i> [4] : <i>tumu</i> [4]
e	<i>umoreru</i> ‘to be buried’ : <i>umeru</i>	<i>umoru</i> [2L] : CJ <i>umu</i> [4 > 2L]
g	<i>kikoeru</i> ‘to be audible’ : <i>kiku</i>	<i>ki₁ko₂yu</i> [2L] : <i>ki₁ku</i> [4]
i	<i>oyobu</i> ‘to reach, to extend’ : <i>oyobosu</i>	<i>oyo₂bu</i> [4] : <i>oyo₂bosu</i> [4]
n	<i>okiru</i> ‘to rise’ : <i>okosu</i>	<i>oku</i> [2U] : <i>oko₂su</i> [4]
	<i>ochiru</i> ‘to fall’ : <i>otosu</i>	<i>otu</i> [2U] : <i>oto₂su</i> [4]
	<i>oriru</i> ‘to descend’ : <i>orosu</i>	<i>oru</i> [2U] : <i>oro₂su</i> [4]
	<i>sugiru</i> ‘to pass’ : <i>sugosu</i>	<i>sugu</i> [2U] : <i>sugusu</i> [4]
	<i>hiru</i> ‘to dry’ : <i>hosu</i>	<i>fu</i> [2U] ¹⁹ > CJ <i>firu</i> [1U] : <i>fosu</i> [4]
	<i>horobiru</i> ‘to be ruined’ : <i>horobosu</i>	<i>foro₂bu</i> [2U] : <i>foro₂bosu</i> [4]
o	<i>tsukuru</i> ‘to become exhausted’ : <i>tsukusu</i>	<i>tuku</i> [2U] : <i>tukusu</i> [4]

It has been attempted to explain this variety by means of vocalic harmony (Okutsu 1990, 113; Syromiatnikov 1981, 32; 76)²⁰ or by including the vowel into a verbal root (Martin 1987, 671). Neither of these conjectures seems plausible: the existence of vocalic harmony in Proto-Japanese still remains a hypothesis (a quite dubious one, it may be added); and on the other hand in forms like ModJ *umoreru* (< OJ *umoru* [2L]) one cannot include *-o-* into the root if the verb is to be regarded as derived from its transitive counterpart (CJ *umu* [4 > 4/2L] > ModJ *umeru*, in this case). Besides those two, several possible explanations can be enumerated here, none of them, however, seems more convincing than the others:

- vocalic alternations,²¹ sometimes multistage, e.g. *a* ~ *o₂*, *o₁* ~ *u* and *a* ~ *o₁* (cf. OJ *siro₁[si]* ~ *sira-* ‘white’), and also the alternation series *a* ~ *o₁* ~ *u* (Kotański 1995, 68²²);

¹⁹ Differently at Martin 1987, 51.

²⁰ Presumed rules of Proto-Japanese vocalic harmony can be found in Syromiatnikov 1981, 33, and Wenck 1959, 10-11.

²¹ Old Japanese vocalic alternations are discussed in detail by G. Wenck (1959, 5-10).

- forms containing *-o-* may be assumed archaic variants of the Imperfect Base of Quadrigrade verbs (Kolpakčiči 1956, 42), which can be seen in other structures too, e.g. OJ *omofosu* (honorific ← *omofu*), OJ *sir_o₂sime₁su* (honorific ← *siru*), OJ *ki₁ko₂su* (honorific ← *ki₁ku*), possibly also the Imperfect Base of the verb *ku* (the *ka-hen* conjugation) ‘to come’: OJ *ko₂-* (Lewin 1996, 121; 157);
- assimilation to the preceding vowel (e.g. OJ *tukusu* < **tukasu*) or consonant (e.g. OJ *tumoru* < **tumaru*, OJ *fosu* < **fasu*; cf. also Martin 1987, 778, s.v. *umoreru*); this may be supported by the forms such as *todomoru* (< *todomaru*), *sukuforu* (< *sukufaru*), and the variations *a ~ o* (e.g. *inabikari ~ inobikari*, *fabikoru ~ fobikoru*) and *o ~ u* (e.g. *musaboru ~ musaburu*, *tamotu ~ tamutu*), all being attested in Classical Japanese (Syromjatnikov 1983, 13-14); yet sometimes it is difficult to establish what induced the assimilation (e.g. *ki₁ko₂yu*), and sometimes dissimilation should rather be assumed;
- irregular raising (NB *a* as against *o* or *u*), which in some instances may have been due to high frequency (cf., e.g., Mańczak 1978, 310), but for the most part is quite improbable here.

Perhaps one must take account of various solutions, depending on the type of a given pair and phonetic features of the original forms, which is however very difficult at the present stage of our knowledge.

2. The presumption that verbs originally lacked formal differentiation with regard to transitivity has already been mentioned above. At the following stage of development the verbs in some of their uses (the rarer ones?) received a suffix specifying their function (thus forming the category of derivatives). Moreover, it seems possible that afterwards also the other element of such a pair obtained its suffix, which would then create a specific ‘balance of markedness’ – bipolarity. The whole process is still visible in the set ModJ *kogeru* ‘to scorch’ (< MJ *kogu* [2L]) / *kogareru* (< OJ *ko₁garu* [2L]) : *kogasu* (< CJ *kogasu* [4]). If only *kogareru* and *kogasu* were given, nothing more could be arrived at than the mere conclusion of the opposition expressed by means of *-r-* and *-s-*. The existence of *kogeru*, however, points to the fact that originally there was a verb *kogu* [*4], from which *kogasu* and later *kogaru* [*4 > 2L] were derived, and which for its part altered eventually its inflexion to Lower Bigrade. It is, of course, impossible to ascertain whether that was the case in each bipolar pair, although it cannot be ruled out either.

The most spectacular example seems the verbs *naoru* ‘to be mended’ (< CJ *naforu* [4]) : *naosu* (< OJ *nafosu* [4]). The root *nao-* (*nafo-*) is isolated in them, also to be found in other words, such as

²² ‘Jest nawet prawdopodobne, że formy z zakończeniem *-a* są starsze [...]’ (‘It is even probable that the forms with the termination *-a* are older [...]’) (ibid.).

- CJ *nafosi* 'straight, flat, even'
 CJ *sunafō* 'natural, simple; right; gentle, obedient' (> ModJ *sunao-na*)
 ModJ *Naoko* (a female name).

It is quite commonly accepted that this root was originally neutral in respect of its transitivity (Okutsu 1990, 114). Thus, a Proto-Japanese verb **nafu* [4] may be postulated here. Another argument is the pair *hitaru* 'to soak' (< MJ *fitaru* [4]) : *hitasu* (< CJ *fitasu* [4]), built upon a verb attested in Old Japanese as *fi₁tu* [OJ 4 > CJ 2U] (cf. Abe 1990b, 92).

Concomitantly, once bipolarity has been recognised as double derivation from a Quadrigrade verb (which in the majority of instances has not come down to us), the origin of the types *q*, *r*, *s*, *t* and *u* can be explained much more easily. As with the category of derivatives, three questions arise at this point, concerning the form of the suffixes, the conjugations and the vowels preceding the suffixes. The first two issues have already been discussed in detail above and there is no need to raise them again. It may only be added that after derivation some verbs altered their inflexion, but it never involved both elements of a pair, e.g.:

- OJ *fi₁tu* [4] → MJ *fitaru* [4] > ModJ *hitaru*
 → CJ *fitasu* [4] > ModJ *hitasu*
 **arafu* [4] → OJ *arafaru* [2L] > ModJ *arawareru*
 → OJ *arafasu* [4] > ModJ *arawasu*
 **no₂bu* [4] → **no₂baru* > OJ *no₂boru* [4] > ModJ *noboru*
 → **no₂basu* > OJ *no₂bosu* [2L] > ModJ *noboseru*.

In a few cases the suffix *-yu* was used instead of *-ru*, e.g. OJ *ko₁yu* [2L] (> ModJ *koeru*) : OJ *ko₁su* [4] (> ModJ *kosu*).

The only difficulty lies in the vowels before the suffixes, which are here more diverse than in the derivative types:

- a- e.g. OJ *wataru* [4] : OJ *watasu* [4]
 -o₁- e.g. OJ *ko₁yu* [2L] : OJ *ko₁su* [4]
 -o₂- e.g. OJ *no₂ko₂ru* [4] : OJ *no₂ko₂su* [4]
 -o- e.g. CJ *naforu* [4] : OJ *nafosu* [4]
 -u- e.g. OJ *uturu* [4] : OJ *utusu* [4]
 -e₁- e.g. OJ *kaf_e₁ru* [4] : OJ *kaf_e₁su* [4]
 -e₂- e.g. OJ *simeru* [4] : CJ *simesu* [4].

No other solution can be offered, however, than those given above, except that the set of alternations possibly responsible for the irregularities should be extended by the following two: *o₂ ~ e* and *a ~ e₂*.

One more likely explanation must be mentioned here, namely analogy – not uncommon in Japanese and without doubt present also in this subsystem of the language (Shibatani 1996, 235; Syromiatnikov 1981, 79; Kolpakči 1956, 46-

47).²³ For it may well be that some primary verbal stem ending in *-r-* (or *-s-*) was misinterpreted as a secondary formation containing the passive (causative) suffix, and consequently its transitive counterpart (or intransitive one, respectively) was brought into existence to form a pair. Yet it must be borne in mind that analogy may relate only to a limited quantity of paired verbs (despite its partial productivity in this sphere, operating also in modern times – cf. Shibatani, loc. cit.; Martin 1991, 312).

The manner in which the origin of bipolar pairs has just been explained is apt to appear too improbable, because it assumes a severe reduction of verbal root and as a result a substantial increase in the number of homonymous forms. It does, however, accord with the general schema presented before, although some modifications may prove to be necessary in the future.²⁴

3. As for the remaining two types (*v* and *w*), it is difficult to present any satisfactory explanation, and one is tempted to confine oneself to the statement that in these pairs the opposition is expressed by means of different conjugations: Quadrigrade and Lower Bigrade. No rule can be formulated which would attribute the transitive or intransitive meaning to a particular inflexional paradigm (Syromiatnikov 1981, 76).

K. Okutsu (cf. Martin 1991, 309) has suggested the following solution: ‘If the original meaning of the verb was transitive in nature (‘sells’, ‘boils’) a vowel-verb [= Lower Bigrade] derivative was created to mark the intransitive; if the original meaning was intransitive in nature (‘stands’) a vowel-verb derivative was created to mark the transitive.’ It may, however, be rather difficult (if not impossible) to establish the ‘original meaning’ in some cases, for it is not always so obvious as in the pairs cited by K. Okutsu (compare, e.g., CJ/ModJ *aku* [4] ‘to open’ : OJ *aku* [2L] > ModJ *akeru*).

S. E. Martin himself (1991, 309) has come forward with a different explanation. He posits for the intransitive Lower Bigrade verbs a suffix *-a-* (?= *ar-* ‘to be’) attached to the Conjunctive Base ($i + a > **e_1$), and for the transitive ones – a suffix *-i-* (?= *[s]i-* ‘to do, to make’) added to the Imperfect Base ($a + i > **e_2$). He realises that this requires two different varieties of *e*, but he concludes: ‘My proposal would place the derivation at an earlier stage, with analogical neutralization of the vowel distinction by the time of Old Japanese.’ Such a solution must be said to jar with the linguistic facts, and for this reason it has to be approached sceptically. As an alternative, the existence of a

²³ Compare, e.g., OJ/ModJ *naru* [4] ‘to sound’ : OJ *nasu* [4] \Rightarrow ModJ *narasu*, and also MJ/ModJ *modosu* [4] which is mentioned by R. A. Miller (1996, 128) as ‘an analogous formation’ based on CJ/ModJ *modoru* [4] ‘to return’.

²⁴ For a somewhat different treatment of the problem, see Miller 1996, 142-144.

suffix *-i-* (< **-gi-*) is suggested, which would reverse the transitivity of an original verb.

In this connexion, it is worth noting that in Old and Classical Japanese also Lower Bigrade and Upper Bigrade verbs stood in contrast to each other (Abe 1990b, 93), as in

<u>intransitive</u>	<u>transitive</u>
CJ <i>nobu</i> [2U]	: OJ <i>no₂bu</i> [2L]
OJ <i>yo₂ku</i> [2U (> 2U/4)]	: MJ <i>yoku</i> [2L].

This indicates that sometime in the past conjugations were to a larger extent used to mark transitivity, at a later stage however the device was abandoned.²⁵ It may even be speculated that new conjugations arose in Proto-Japanese in order to differentiate between transitive and intransitive uses. At any rate, the opposition of Quadrigrade and Lower Bigrade verbs is the only one that has persisted until modern times, which may be due to the high frequency of those two conjugations: c 55% for the Quadrigrade and c 30% for the Lower Bigrade in Classical Japanese texts (Syromjatnikov 1983, 43; cf. also: Abe 1990a, 81; Martin 1987, 665).

4. The last of the categories recognised above, *x*, comprises irregular pairs, i.e. those whose structure deviates from the rules formulated thus far.²⁶ It will be attempted to explain some of them here.

The pair *ochiiru* ‘to fall into’ : *otoshiireru* is in fact a compound one, each of its elements consisting of two paired verbs:

ModJ *ochiiru* < CJ *otiiru* [4] < OJ *otu* [2U] ‘to fall’ + OJ *iru* [4] ‘to enter’

ModJ *otoshiireru* < OJ *oto₂su* [4] ‘to let fall’ + OJ *iru* [2L] ‘to put in’.

The form *uruou* ‘to be moistened’ seems to have emerged on the analogy of its transitive counterpart *uruosu*, since in Classical Japanese the verb is attested as *urufu*:

**urufasu* (← CJ *urufu* [4]) > CJ *urufosu* [4] (~ *urufu* [2L]) > ModJ *uruosu*

CJ *urufu* [4] (> ***uruu*) ⇒ CJ *urufofu* [4] (influenced by *urufosu*) > ModJ *uruou*.²⁷

²⁵ In Modern Japanese the verbs *nobiru* ‘to extend, to lengthen’ : *nobasu* are used, while *noberu* ‘to make (a bed)’ constitutes a separate word; *yokeru* ‘to avoid’ has been left without its counterpart (Abe 1990b, 93).

²⁶ It does not include verbs which are not etymologically related and form a transitivity pair only on the basis of their meaning, e.g. *shinu* ‘to die’ : *korosu* ‘to kill’. Moreover, those pairs which fit into the general schema have been classified as regular, even if only one example could be found for the particular type (*d*, *e*, *g*, *i*, *m*, *o* and *t*).

²⁷ It is also possible to interpret the ending of *urufofu* as the auxiliary *-fu* [4] denoting ‘the continuance of the action described by the verb’ (Sansom 1928, 222), which in the course of time was deprived of its meaning: *urufofu* < *urufu* [4] + *-fu* (cf. CJ *tu-*

The pair *hairu* ‘to enter’ : *ireru* is actually based on different conjugations (like type *v*), as is confirmed by the Old Japanese forms: *iru* [4] : *iru* [2L], which are regularly continued by ModJ *iru* : *ireru*. The form *hairu* is a compound (< MJ *fafiru* < CJ *fafiiru* [4] < OJ *fafu* [4] ‘to crawl’ + OJ *iru* [4]; Iwanami ..., s.v. *fafi(i)ri*; Martin 1987, 82₂₁).

As for the remaining irregular pairs, it is difficult to present any satisfactory interpretation:

kieru (< OJ *ki₂yu* [2L] (~ OJ *ku* [2L])) ‘to be extinguished’ : *kesu* (< OJ *ke₂tu*²⁸
~ CJ *kesu* [4])

magireru (< CJ *magiru* [2L]) ‘to be confused with’ : *magirawaseru* (< CJ *magi-
rafasu* [4])

neru (< OJ (*i*)*nu* [2L]) ‘to sleep’ : *nekas-u/eru*²⁹

taeru (< OJ *tayu* [2L]) ‘to discontinue’ : *tatsu* (< OJ *tatu* [4])

tsu-k/r-amaru ‘to be caught’ : *tsu-k/r-amaeru* (< CJ *tumakafu* [2L]³⁰).

Conclusions

Several implications of a more general nature stem from what has been arrived at above. The first is connected with the structure of the verb in Japanese. Morphological analysis of any verbal form can be carried out according to the following model:

<i>otosanai</i> ‘will not drop’ =	<i>ot-</i>	<i>-os-</i>	<i>-a-</i>	<i>-nai</i>
	root	suffix	inflexional ending	auxiliary
	s	t	e	m
	b	a	s	e

Root is a morpheme etymologically indivisible from the point of view of our present-day knowledge; stem is the part of a word which does not change during inflexion and which forms together with an inflexional ending a base.

kurofu < OJ *tukuru* [4] + *-fu*; Iwanami ..., s.v. *tukurofi*). See also Iwanami ..., s.v. *fi*₁.

²⁸ Cf. *tatu* below. The alternation *s* ~ *t* is discussed by G. Wenck (1959, 109-110). The forms with *-t-* are touched upon by N. A. Syromiatnikov (1981, 78).

²⁹ Cf. dialectal forms with various hiatus-fillers quoted in § 1.2., as well as MJ *warafakasu* [4] ← CJ *warafu* [4] ‘to laugh’.

³⁰ ‘Iwanami-kogo-jiten’ explains this form as a contracted one: CJ *tukamafu* [2L] < *tukami*₁- (< OJ *tukamu* [4]) + OJ *afu* [2L] (Iwanami ..., s.v. *tukamafe*). The combination *i*₁ + *a* should have yielded *e*₁, but ‘Iwanami ...’ cites further examples of such a development (Iwanami ..., s.v. *afe*₂).

As for vocalic verbs, it must be noticed that all bases have been uniformed and became a new stem (thus, those verbs are characterised by a single base),

<i>noseru</i> ‘will put’ =	<i>no-</i>	<i>-s-</i>	<i>-e-</i>	<i>-ru</i>
	root	suffix	OJ inflexional ending	ModJ inflexional end- ing (or auxiliary)
	O J stem	M o d J s t e m		
		(= OJ base)		

Such a model does not differ considerably from what has long been accepted in Japanese linguistics (cf., e.g., Syromiatnikov 1981, 77-78); the novelty here, however, is the conjecture that the root was at the Proto-Japanese stage an independent verb, inflected moreover as Quadrigrade (for which see immediately below). It follows that this is the form which should be presented for any comparative research.

As far as the conjugation of those primitive verbs is concerned, the assumption has been made that they were mainly Quadrigrade (except for the few Upper Unigrade, e.g. *mi₁ru*), although this has been solely based on the Imperfect form. All the remaining bases cannot be reconstructed in a similar manner but many facts from the historical period of the development of Japanese seem to confirm such an opinion.

The spread of the Bigrade conjugations is probably to be connected with limiting the alternations – thus must have been felt the changing of vowels while forming bases if syllable was the unit of word division (this in turn can be deduced from the existence of the rule of open syllables). Nevertheless, further research in this field seems indispensable.

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A b b r e v i a t i o n s a n d s y m b o l s

CAUS.	causative
CJ	Classical Japanese (9 th – 12 th c.)
HONOR.	honorific

INTR.	intransitive
MJ	Middle Japanese (13 th – 16 th c.)
ModJ	Modern Japanese (20 th c.)
OJ	Old Japanese (8 th c.)
PASS.	passive
SPONT.	spontaneous
TR.	transitive
> <	historical development
→ ←	derivation
⇒	substitution
~	alternation
4, 2L, 2U, 1L, 1U	see fn. 7

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