

# Superlative Suffixes in Indo-European and Latin: Relation to Ordinal Numbers and Process of Variation

Kanehiro Nishimura

## 0. Introduction

According to Cowgill (1970, 114) and Sihler (1995, 356), the paradigm of comparison, that is to say, the system which strictly distinguishes positive, comparative, and superlative degrees, was still not established at the stage of Proto-Indo-European. It is supposed that in the proto-language there would have been only some suffixes which added a certain meaning to stems, for example, *\*-yos-* functioning as an intensive marker which focuses on one out of many, *\*(t)ero-* particularizing one out of two, and so forth.<sup>1</sup> Starting from this situation in which the several suffixes each had their own meaning, the comparative and the superlative came to be expressed by means of a certain suffix or a composite of suffixes as Indo-European languages were diffused. Different developments are found in different daughter languages as to which suffix is applied to the comparative or the superlative and which suffixes are combined. Even in the same language, some suffixes are alternatively used in accordance with the meanings of roots or stems.<sup>2</sup>

In this paper, first of all, we will clarify the proto-language situation concerning the suffixes which would later be used in the formation of superlatives, on the basis of attested forms in the daughter languages and the theoretically reconstructed forms (1.). Important here is the relation of superlative forms to ordinal numbers; the formal similarity in their endings has traditionally been pointed out. In view of this background, I will try to propose that *\*-is-* + *\*-mo-* reconstructed in Italic and Celtic would be as archaic as *\*-ist(H)o-* in other cognate languages. Next, paying special attention to Latin among Indo-European languages, I will reconsider how the superlative obtained various suffixes through the relation to ordinal numbers (2.).

<sup>1</sup>*\*h<sub>2</sub>el-yos-* 'another, some other' in contrast to *\*h<sub>2</sub>el-tero-* 'the other (of two); a different one'. This opposition is seen in Latin *alius/alter*. See Sihler (1995, 356-57).

<sup>2</sup>In Greek, as a comparative suffix, *\*-yos-* (e.g., βάσσων 'deeper') and *\*-is-on-* (e.g., ῥηδίων 'sweeter') were in competition. See Sihler (1995, 361-62). In Sanskrit, there are two series of comparative/superlative suffixes, *\*-yos-/\*-ist(H)o-* (e.g., *vas-yas-/vas-iṣṭha-* 'better/best') and *\*(t)ero-/\*(t)mmo-* (e.g., *guru-tara-/guru-tama-* 'heavier/heaviest').

## 1. The superlative suffixes and the endings of ordinal numbers

1.1. Among various suffixes in the proto-language, *\*-mo-* is the most important as a superlative suffix in the paradigm of comparison which would later be established.

1.1.1. This suffix is often discussed in relation to the endings observed in some ordinal numbers because of its formal resemblance to them. Although the idea that the suffix *\*-mo-* had been shared by two categories—the superlative and the ordinal number—was once suggested,<sup>3</sup> this kind of theory based on a single etymology is now scarcely supported. The ending *\*-mo-* apparently seen in the ordinal numbers does not go back to the originally existing suffix *\*-mo-*. It is true that the ending *-ma-* in Sanskrit appears in some forms like *pañcama-* ‘fifth’, *saptama-* ‘seventh’, *aṣṭama-* ‘eighth’, *navama-* ‘ninth’, and *daśama-* ‘tenth’; it seems that this ending plays a certain role in the formation of ordinal numbers. On the basis of this assumption alone, however, it is not possible to account for its co-occurrence with *-tha-* in *caturtha-* ‘fourth’ and *ṣaṣṭha-* ‘sixth’, and *-(ī)ya-* in *dvitīya-* ‘second’, *trītiya-* ‘third’, and *turīya-/turya-* ‘fourth’. Such a variation in the endings can be explained by postulating *\*-o-* as an original suffix for ordinal numbers.<sup>4</sup> Although ‘first’ and ‘second’ were substituted with forms which mean ‘foremost’ and ‘following’ respectively, and various phonetic innovations or substitutions took place also in the forms from ‘third’ to ‘tenth’,<sup>5</sup> the variants of endings such as *-ma-* and *-tha-* in Sanskrit can be defined as ones originally containing the suffix *\*-o-* which was attached to cardinal numbers.

1.1.2. *\*-mo-* apparently observed in superlative forms, on the other hand, probably reflects the original suffix *\*-mo-*. Its origin, nevertheless, has traditionally been assigned to the category of ordinal numbers. In this hypothesis, the starting point is placed on the form which means ‘seventh’. If the suffix *\*-o-* had been attached to the corresponding cardinal number *\*septm* in order to form the ordinal number, the sequence *-m-o-* would have been expected. In this case, however, it is not phonetically necessary that *\*-m-* should be held as a syllabic resonant because *\*-m-* precedes a vowel, that is to say, it is not situated between two consonants or between a consonant and a word boundary. Therefore, the reconstructed form *\*septmo-* is possible and this is in fact attested in

<sup>3</sup>See Grimm (1890, 621-36). He considers, on account of their formal similarity, that the superlative and the ordinal number form one and the same category. For example, he describes the ordinal numbers *navama-* and *daśama-* in Sanskrit as lacking *-t-* in the superlative suffix *-tama-* (ibid., 624). Moreover, he enumerates examples of both categories in Latin in one section and indicates that *-issimus* was seen in the decad ordinals such as ‘twentieth’ and ‘thirtieth’. The term “[Z]ahlwörtersteigerung” (ibid., 632) also shows that he regards two categories as those going back to the same origin.

<sup>4</sup>See Brugmann (1903, 5), Szemerényi (1960, 70; 1996, 227), and Coleman (1992, 411-12, 438 n. 72).

<sup>5</sup>See Szemerényi (1960, 76-94).

Greek ἑβδόμο-,<sup>6</sup> Old Prussian *septmas*, and Old Lithuanian *sėkmas*. However, there is a vowel before *-m-* in Sanskrit *saptama-* and Latin *septimo-*. Thus, these examples do not go directly back to *\*septmo-*, but they underwent a secondary change. *\*-m̥* in *\*septm̥* should be converted into a consonantal segment through the process of suffixation of *\*-o-*, but under the influence of the cardinal number, *\*-m̥* must have been preserved as a vocalic resonant in spite of the fact that it precedes a vowel.<sup>7</sup> In the sequence *\*-m̥o-* which occurred in this way, the homorganic glide was inserted, with the result that *\*septmo-* developed into *\*septm̥mo-*.<sup>8</sup> Moreover, at the end of *\*septm̥mo-*, the ending *\*-mo-* was newly recognized, and its reflex *-ma-* in Sanskrit was transferred to other ordinal numbers like ‘fifth’, ‘eighth’, ‘ninth’, and ‘tenth’. *\*-mo-* was also adopted in Latin *decimus* ‘tenth’.<sup>9</sup> On the basis of the traditional framework, this *\*-mo-* is thought to have gone beyond the range of ordinal numbers and to have assumed the function of a superlative suffix.

1.1.3. However, Cowgill (1970, 117-24) regards as implausible the hypothesis that the superlative *\*-mo-* was transmitted from the category of ordinal numbers, because *\*-mo-* has quite limited distribution even there.<sup>10</sup> According to him, *\*-mo-* was one of the independent suffixes even though it only had the function to indicate the state which was expressed by the stem (“an originally colorless suffix”). The acquisition of the function of a superlative suffix is supposed to have been prompted by the fact that *\*-mo-* had most frequently been attached to *\*pro* ‘in front, forward’ and *\*up(o)* ‘upward’ and had acquired the meanings like ‘foremost, first’ and ‘topmost, highest’ (e.g., Umb.

<sup>6</sup>Although a vowel appears before *-μ-*, *\*-pt-* is thought to have been situated just before *\*-m-* due to the fact that *-βδ-* is a voiced cluster. See Sihler (1995, 90).

<sup>7</sup>When comparative forms and agent nouns are derived in English by means of the suffix *-er* from adjectives and verbs, respectively, in a syllabic resonant, some speakers have different pronunciations of the resonant between these two cases. In the former case the syllabic resonant becomes consonantal before the vowel, that is to say, *simple* [-l̥] + *-er* → *simpler* [-l-]. In the latter case, on the other hand, the syllabic resonant keeps its vocalic quality even though it finds itself just before the vowel, *settle* [-l̥] + *-er* → *settler* [-l̥(l)-]. In modern English, besides the case of suffixation shown above, the resonant tends to be pronounced as a syllabic. The case of *\*septm̥* + *-o-* is supposed to produce a similar pronunciation. The information about such a phenomenon in English was given to me by my colleague, Mr. Takeshi Yamamoto.

<sup>8</sup>I owe such a series of ideas to Professor Jay H. Jasanoff, with whom I fortunately had a conversation when he visited Japan in 1999.

One might also appeal to Sievers’ Law. According to Haudry (1983, 484), *\*septmo-* is thought to have developed into *\*septm̥mo-* in accordance with this law. Sievers’ Law, however, leaves only a few relics in materials of the daughter languages other than R̥g-Veda (see Schindler 1977, 57), so its detail remains unclear. Cowgill (1970, 146 n. 11) says that the choice between *m* and *m̥* depends not on the weight of the preceding syllable, but on whether the previous segment is a vowel or a consonant. His comment does not necessarily seem to be compelling as well.

<sup>9</sup>In PIE, ‘tenth’ is reconstructed as *\*dek̑nt-o-* (cf. Gk. δέκατος). We can suppose that this *\*dek̑nt-o-* was metanализed as *\*dek̑n-to-* and that it changed into *\*dek̑nm̥o-* in Sanskrit and Latin after the *\*-to-* was substituted with *\*-mo-* in *\*septm̥mo-*. See Szemerényi (1960, 86; 1996, 227) and Haudry (1983, 484).

<sup>10</sup>Cf. Szemerényi (1960, 91).

**prumum**, *promom*, Lat. *summus*, etc.) respectively. As a result, \*-mo- itself obtained a signification, that is to say, the quasi-superlative meaning, of marking the one which had a remarkable degree of quality expressed by the stem. Such an assumption proposed by Cowgill results from his intention to find the relation between the superlative suffix \*-mo- and another \*-mo- reconstructed in Sanskrit *bhīma-* 'frightful' or Greek θερμός 'warm'.

Although this kind of connection is not necessarily decisive, the possibility that \*-mo- was independent of any ordinal number should be supported. As Cowgill (1970, 117-18) pointed out, the supposition that \*-mo- derived from a small group of ordinal numbers like \*septmo- ~ \*septmmo- does not seem to be probable and, further, Benveniste (1948, 161-62) insists that it is difficult to find a superlative meaning in ordinal numbers from a semantic point of view.

1.2. However, taking into consideration the later development of \*-mo- as a superlative suffix, the relationship which was secondarily formed between this \*-mo- and ordinal numbers is not negligible.

1.2.1. The ordinal number 'first' was replaced by that form with a superlative meaning. Here we can find a point of contact between superlatives and ordinal numbers. Although the suffixes used for 'first, foremost' are subtly different in form among the daughter languages, it is easy to find the suffix \*-mo- in Sanskrit *prathama-*, Lithuanian *pirmas*, Old English *forma*, Latin *prīmus*, Umbrian **prumum**, *promom*, and Paelignian *prismu*. This \*-mo- was probably identified with the other \*-mo- in \*septmmo- as the same component. In Latin, the existence of \*-mo- is acknowledged also in *decimus* (< \*dekmmo-). As a result, the relation to the quasi-superlative \*-mo- in forms such as *dēmum* 'at last' and *summus* 'highest' must have occurred. Such a process was probably motivated by the fact that the function of ordinal numbers, with which the one ranked *n*th among a certain group is marked, has something in common with the function of superlatives to identify the one<sup>11</sup> which has a remarkable quality expressed by the stem among a certain group.<sup>12</sup> In this way, the superlative \*-mo- incidentally formed a rela-

<sup>11</sup>The form which means 'oneself' sometimes consists of the same suffix as the superlative one, e.g., Greek αὐτοτάτος and Latin *ipsissimus*. See Grimm (1890, 622). As for the German *Selbst* which was also cited by him, see Moriz et al. (1984, 445).

<sup>12</sup>Benveniste (1948, 145-67), based on the materials of various languages, suggests that the formation for ordinal numbers is shared with other categories and concludes that the essential meaning of ordinal numbers is "complétif", that is to say, destined to "compléter". He points out that Pāṇini named ordinal numbers "pūruṇa" ("complétifs") and, taking into account the expressions in Ṛg-Veda in which the last member of a certain group is marked particularly by an ordinal number, he says that "il [the ordinal number] intègre en une totalité complète l'énumération dont il est le dernier terme numérique" (ibid., 160). Then, he demonstrates that the superlative form in Greek is added as the last member to a group in the same way as ordinal numbers in a certain expression and, consequently, he concludes that "le superlatif dénote le terme ultime qui porte à son point final une qualité que d'autres termes manifestent" (ibid., 162). However, in contrast to Benveniste's idea, Cowgill (1970, 118) insists that "to mark the last of a series consisting of just many items" is not an essential function of superlatives because he

tionship to the ordinal numbers owing to the morphological and semantic resemblance, and the superlative suffix in Latin, starting from the original *\*-mo-*, would have acquired some kinds of variants through the influence from the ordinal numbers. I will discuss these variants later in section 2.

**1.2.2.** In the category of ordinal numbers, alongside *\*-mo-*, another ending appeared through the suffixation of *\*-o-* to cardinal numbers, that is to say, *\*-t(H)o-*. Under the influence of the process in which *\*-mo-* functioning as a superlative suffix was related to the apparently similar ending *\*-mo-* of ordinal numbers, *\*-t(H)o-*, even though it had nothing to do with the superlative, was segmented through a metanalysis<sup>13</sup> and attached to *\*-is-*, zero grade of *\*-yos-*, which had become a comparative suffix. *\*-t(H)o-*, consequently, took a part in the formation and signification of superlatives as a second member in the composite *\*-ist(H)o-* reconstructed in Indo-Iranian, Greek, and Germanic. Cowgill (1970, 124) insists that the *\*-t(H)o-* was not derived from ordinal numbers, but should be defined as an ‘individualizing suffix’ which originally existed in the proto-language. His argument, however, is not necessarily based on established data. Szemerényi (1976, 411-12) identifies *\*-t(H)o-* with *-to-* seen in Latin forms such as *cēnā-tus* ‘having dined’, *barbā-tus* ‘having a beard’, and *iūs-tus* ‘just’, but it is difficult to find a superlative meaning in these examples. Moreover, in contrast to the case of *\*-mo-*, *\*-t(H)o-* is not attached to the stem to function as a superlative suffix unless it combines with *\*-is-*. Therefore, *\*-t(H)o-* should be considered not a primarily existing suffix, but one which secondarily occurred through the metanalysis in the category of ordinal numbers.

*\*-ist(H)o-* is thought to have already existed in the proto-language. In Celtic and Italic, on the other hand, there is a different superlative suffix which goes back to the composite form *\*-is-* + *\*-mo-*. According to the traditional view, this suffix could have been produced through the process in which *\*-t(H)o-* in *\*-ist(H)o-* was substituted with *\*-mo-* because *\*-ist(H)o-* was widely inherited in Indo-Iranian, Greek, and Germanic.<sup>14</sup>

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does not think that “in PIE it was impossible to say things like, ‘I shot seven arrows at the target; the first three and the last two missed, but the fourth and fifth hit.’” This argument should be regarded as reasonable. Moreover, since most of the languages which Benveniste analyzes so as to define the meaning of ordinal numbers as “complétif” are non-Indo-European, whether his definition could be valid also in Indo-European languages remains uncertain. However, Cowgill says that “one superlative does in fact regularly designate ‘l’élément qui achève une totalité’, the quasi-ordinal ‘last’,” so he seems to follow Benveniste’s idea. Furthermore, Cowgill proclaims that “since there is no denying that ordinals sometimes do designate the last of a series, there is indeed a semantic and psychological connection between the two formations” even though there is no etymological connection. Cowgill’s comment “I have heard my wife’s five-year-old daughter use the ordinal *sevenest*” (ibid., 147 n. 19) is also interesting.

<sup>13</sup>As mentioned in the footnote 9, the starting point is *\*dekmt-o-* (→ *\*dekṃ-to-*). In Sanskrit, *\*-t(H)o-* was applied to *catūrtha-*, *ṣaṣṭha-*, and *saptatha-* (cf. *saptama-*) ‘seventh’, but the origin of *H* deduced from *-tha-* is not clear.

<sup>14</sup>See Sommer (1914, 458) and Sihler (1995, 367). Brugmann (1903, 10) supposes that *\*-t(H)o-* was not simply substituted with *\*-mo-*, but that the neutral noun in *\*-is* would be followed by *\*-mo-* newly in the Italo-Celtic stage. In any case, *\*-is-* + *\*-mo-* is regarded as younger than *\*-ist(H)o-*.

However, taking into consideration the fact that *\*-mo-* is older than *\*-t(H)o-* as a superlative suffix, the composite suffix *\*-is-* + *\*-mo-* would not be produced through the substitution of *\*-t(H)o-* with *\*-mo-*, but would reflect a rather archaic formation.<sup>15</sup>

## 2. The variation of superlative suffixes in Latin

2.1. In Italic languages, several variants of superlative suffix are observed. Alongside that *\*-mo-* reflected in forms such as Latin *dēmum*, there must have been some kinds of suffixes containing *\*-mo-* as a part. This fact can be easily deduced from the variation of endings as follows: *\*-mo-* with a preceding vowel seen in Latin *īnfimus* ‘lowest, last’; *-timo-* observed in forms such as Latin *intimus* ‘inmost, innermost’ and Oscan *ūltiumam* ‘ultimam, last’; *-simo-* in Latin *maximus* ‘biggest, greatest’, *proximus* ‘nearest’, and so forth; Latin *-errimus*, *-illimus*, and *-issimus* with a double consonant. In this section, we try to discuss how such a variation occurred, focusing on Latin. There are two types of views that have previously proposed as to the variation of suffixes. One contains some problems and is thus unacceptable, but it will be examined first briefly.

2.2. The problematic view is based on the concatenation of suffixes which contain the segment *\*-o-*. This way of thinking is remarkably shown in Ernout (1941, 120-24).<sup>16</sup> Starting from *\*-mo-* reconstructed in forms like *īmum*<sup>17</sup> ‘lowest, deepest, last’ and *sum-mum*, Ernout traces the vowel which precedes *-mo-* in *īnfimus* to *\*-o-* and reconstructs the composite suffix *\*-o-mo-*. He does not explain what the origin of *\*-o-* is. He might conceive the suffix *\*-o-* used for the formation of ordinal numbers on the basis of the morphological and semantic relation to the superlative mentioned above in section 1. If one sticks to this line of reasoning, one assumes another composite *\*-so-mo-* for the

<sup>15</sup>According to von Planta (1897, 2: 208), Brugmann (1903, 10), Sommer (1914, 456), Leumann (1977, 203, 347, 498), and Walde and Hoffmann (1965, 1: 737), Latin *iuxtā* ‘near’ would be traced to *\*-ist(H)o-*. The superlative forms constructed by *\*-ist(H)o-* presuppose the existence of comparatives in *\*-yos-*. In the case of *iuxtā*, however, the corresponding comparative in *\*-yos-* is not attested; thus, the hypothesis that *iuxtā* would go back to *\*-ist(H)o-* is not convincing. Cowgill (1970, 125), also denying that possibility, suggests the relation to the root *\*stā-*. Szemerényi (1976, 407-8), while he also negatively conceives of *iuxtā* as evidence of *\*-ist(H)o-*, insists that some Latin forms in *-is-tero-* such as *magister* ‘master’ and *sinister* ‘left’ (cf. Osc. *minstreis* ‘minoris, smaller’ and Umb. *mestru* ‘maior, bigger’) would presuppose the composite suffix *\*-isto-tero-* and that *\*-isto-* was also used in Latin for some time. Szemerényi, however, overestimates the materials in Sanskrit, so his idea does not seem to be appropriate for Latin evidence. This is the case with Szemerényi (1989, 44-45). Szemerényi (1989, 45), in addition, criticizes the traditional view that *prīstinus* ‘former’ in Latin could be segmented as *\*pri-is-tino-* and, reinterpreting this word as *\*pri-ist-ino-s*, he proclaims that there is a relic of *\*-isto-* in this form. On the semantic field, he thinks that the original meaning “der vorderste, früheste” changed to “der vordere, frühere”. However, in other Indo-European languages there are some examples of temporal adverbs which contain the same kind of suffix as *\*-tino-* seen in the traditional segmentation *\*pri-is-tino-*, for example, Sanskrit *nū-tana-* ‘recent’ and Greek ἐπρετανός ‘always’. These examples have nothing to do with *\*-ist(H)o-*. See Leumann (1977, 321).

<sup>16</sup>In recent years, the same idea is seen in Vineis (1998, 292) and Baldi (1999, 350).

<sup>17</sup>According to Ernout and Meillet (1967, 311), it is difficult to trace this form back to the precise etymology. Szemerényi (1989, 45-46) says that it occurred from *īnfimus* through syncope.

ending *-simo-* in examples such as *maximus*, *pessimus* ‘worst’, and *proximus*, which could be reconstructed as *\*mag-so-mo-*, *\*ped-so-mo-*, and *\*prok<sup>w</sup>-so-mo-* respectively. Ernout acknowledges *\*-so-mo-* also in forms which end in *-errimus* or *-illimus*, for example, *ācerrimus* ‘sharpest’, *pulcerrimus* ‘most beautiful’, and *simillimus* ‘most similar’ and adheres to the following diachronic process: *\*pulcro-so-mo- > \*pulcr<sub>o</sub>-so-mo- > \*pulcer-so-mo- > pulcerrimus*. Moreover, a further composite suffix *\*-to-mo-* was reconstructed<sup>18</sup> in examples like *citimus* ‘on this side’, *dextimus* ‘to the right, on the right side’, *extimus* ‘outermost, farthest’, *intimus*, *optimus* ‘best’, *postimus*,<sup>19</sup> *ultimus* ‘farthest, last’, and so forth. *\*-to-*, the first member of *\*-to-mo-*, might go back to *\*-t(H)o-* in a parallel reasoning to the case of *\*-o-* in *\*-o-mo-*.<sup>20</sup> Besides, in the case of *-issimus*, the concatenation of three components, *\*-is-so-mo-*, is proposed, so that *altissimus* ‘highest’ could be explained by establishing such a composition as *\*alt-is-so-mo-*. This *\*-is-so-mo-* contains the above mentioned *\*-so-mo-*, and the first component *\*-is-* is probably the zero-grade form of *\*-yos-*.

In this idea, the phonological change from the reconstructed forms to the actually attested ones is quite simple. In this sense, it may be an honest explanation. However, it contains some problems. First, although *\*-to-mo-* can account for the attested forms in Sanskrit and Latin by means of sound changes, *-α-* in Greek *-τατο-*<sup>21</sup> could not be resolved by *\*-o-* in *\*-t(H)o-*. Second, the reconstruction of *\*-so-*, which is contained in *\*-so-mo-* and *\*-is-so-mo-*, is no more than arbitrary because no explanation about its origin and signification is given to us. Furthermore, when we think about the nominal/adjectival derivation in Indo-European, we will find that the formation in which one suffix keeping a thematic vowel is followed by another suffix is not appropriate.<sup>22</sup> Also in Latin, it is normal that the thematic vowel should be deleted when a stem which is already thematized is followed by another suffix; for example, in case the comparative *altior* is derived from *altus* ‘high’ through the suffixation of *\*-yos-*, the thematic vowel is deleted (*\*\*alto-yos- > \*\*altōs*). As these problems show, the hypothesis based on the concatenation of suffixes is so doubtful that we cannot rely on it to explain the variation of superlative suffixes. That is why we will proceed to the other way of thinking.

<sup>18</sup>See Palmer (1988, 253-54).

<sup>19</sup>Vineis (1998, 292) says that this example has a base *\*-o-mo-* as its suffix.

<sup>20</sup>Beekes (1995, 199-200) proposes the reconstruction *\*-t(H)o-mo-* and seems to suggest a relation to ordinal numbers about the origin of *\*-to-*.

<sup>21</sup>It goes back to *\*-t<sub>h</sub>to-*, and *\*-mo-* in the *\*-t<sub>h</sub>mo-* is thought to have substituted with *\*-to-* under the influence of δέκατος and the superlative suffix -ιστος. See von Planta (1897, 201), Brugmann (1903, 8; 1906, 226), and Benveniste (1948, 144).

<sup>22</sup>Although the examples in Sanskrit such as *priya-tama-* ‘dearest’ keep the thematic vowel as such even in the first member, this kind of formation would be secondary. The usage of *\*-t<sub>h</sub>mo-* from which *-tama-* is derived would be originally limited to the roots which have spatial meanings, as is obvious from the situation in Latin. See Brugmann (1903, 5-6). In Sanskrit, its usage was probably extended to other roots.

2.3. To answer the question how the variation of superlative suffixes started from the fundamental *\*-mo-*, we had better appeal to the relation which was secondarily formed between superlatives and ordinal numbers, as mentioned in 1.2. As a result of the metanalysis, *\*-mo-* in *\*septmmo-* and *\*dekmmo-* was reinterpreted as the suffix which has something to do with the superlative *\*-mo-*. Thus, the superlative is thought to have developed several suffixes under the influence of ordinal numbers.

2.3.1. In the formation of *\*(t)mmo-* as a corresponding suffix to *\*(t)ero-*, the influence from ordinal numbers can be seen. If a strictly corresponding counterpart to *\*(t)ero-* had been formed, the suffix *\*\*-(t)emo-* should have been expected, but in fact such a form did not occur. The formation of *\*(t)mmo-* including *\*-m-* was probably promoted by the analogy with *\*septmmo-* and *\*dekmmo-*. As far as Latin is concerned, even though *\*\*-(t)emo-* was reconstructed, it could have led to the actually attested suffix in forms like *īnfimus* and *intimus* in accordance with the weakening of intermediate vowels. However, the examples in other Italic languages such as Oscan *últiumam* and Umbrian *hondomu* 'infimo, lowest' could not be formed with *\*\*-(t)emo-* containing a vowel *-e-* because the same kind of weakening as in Latin is not observed in other Italic languages.

There are few cases in which *\*-mmo-* without *\*-t-* is employed for the formation of superlatives. Within Latin, it is only *īnfimus* that would reflect *\*-mmo-*.<sup>23</sup> The suffix *\*-tmmo-*<sup>24</sup> is employed for roots which have temporal or spatial meanings as in *citimus*, *dextimus*, *extimus*, *intimus*, *postimus*, and *ultimus*; the range of its usage is relatively wide.<sup>25</sup>

<sup>23</sup> As for *summus*, see Ernout and Meillet (1967, 660).

<sup>24</sup> *-t-* might have been acquired from the analogy of *\*-tero-*, namely, *\*upero-* 'upper' : *\*upmmo-* 'uppermost' = *\*entero-* 'inner' : *X*, *X* = *entmmo-* 'innermost' (see Sihler 1995, 365), but *\*-ero-* and *\*-mmo-* which appear in this proportion are not necessarily productive, so that it would be doubtful whether such an analogy occurred in reality.

Brugmann (1903, 6) says that *\*-tmmo-* originated from the extension of *\*-t(H)o-* in ordinal numbers with *\*-mmo-*, but it does not seem plausible. It is true that such a process would occur in the decad ordinals such as *vīcēsimus* 'twentieth'. The original *\*wī-kmt-o-* must have developed into *\*wī-kmt-to-* under the influence of *\*dekmt-o-* ( $\rightarrow$  *\*dekmt-to-*) and, from the analogy of *\*septmmo-* and *\*dekmmo-*, it must later have been followed by *\*-mmo-*. The reason why *\*wī-kmt-to-* should be reconstructed as an intermediate phase is rendered in proof of Greek εἰκοστός and Boeotian Φικαστός 'twentieth'. See Brugmann (1903, 6), Szemerényi (1960, 90-91; 1996, 227-28), Cowgill (1970, 121), and Baldi (1999, 356). We cannot, however, imagine that *\*-tmmo-* which occurred in this way might have been segmented as such and transmitted to superlative forms. Otherwise, one might suppose the process in which some adjectival roots were suffixed at first with *\*-t(H)o-* and furthermore with *\*-mmo-*, but such a supposition is not appropriate. If we followed this line, Latin *postimo-*, for example, would presuppose the form *\*\*posto-* and its case forms should be attested in this language. Such forms, however, do not exist. It is also unlikely that *post* will have been deduced from *\*\*posto-* through the apocope of *-o-*. This grammatical word goes back to *\*posti*, and the ending *\*-i* is locative in origin.

<sup>25</sup> *\*-tmmo-* was secondarily attached to some nominal stems as in *fīnitimus* 'bordering upon', *legitimus* 'lawful, legitimate', and *maritimus* 'marine, maritime'.



The suffix *\*(t)mmo-* is attested in other daughter languages. In Sanskrit, while *-(ī)yas-/iṣṭha-* (< *\*-yos-/\*(H)ist(H)o-*) are employed as comparative/superlative suffixes respectively, *-tara-/tama-* can be suffixed to almost all the adjectival stems, and their distribution is wider than that in Italic languages. The forms like *antama-* ‘inmost’ and *uttama-* ‘highest’ are examples which reflect the suffix *-tama-* (< *\*-tmmo-*). The suffix *-ama-* (< *\*-mmo-*) can be seen in *upamaḥ*<sup>26</sup> ‘uppermost’ and *adhamah* ‘lowest’, but the number of its occurrences is relatively small.<sup>27</sup>

**2.3.2.** *\*-mmo-* contributed to the formation of the composite suffix with *\*-is-* (~ *\*-yos-*). In 1.2.2., we mentioned the composite *\*-is- + \*-mo-*. In Latin, this assumed the form of *\*-ismmo-*. The forms like *maximus*, *pessimus*,<sup>28</sup> and *proximus* would be offered as examples, which are inappropriately traced back to *\*-so-mo-* by Ernout (1941). These forms apparently end in *-simo-*. Brugmann (1903, 5, 12; 1906, 228) attributes *-s-* in *-simo-* to the nominalizing suffix *\*-es-*, but it is reasonable to bring this *-s-* back to *\*-yos-* because those examples are juxtaposed to the comparatives made up with *\*-yos-*, that is to say, *maior* (< *\*mag-yos-*), *peior* (*\*ped-yos-*), and *propior* (< *\*prok<sup>w</sup>-yos-*). As Sihler (1995, 70) indicates, *-i-* in *\*-ismmo-* underwent syncope in the diachronic process in accordance with Exon’s Law,<sup>29</sup> and there is no problem about this phonetic change.

**2.3.3.** Sommer (1914, 459) acknowledges *\*-smmo-* in the examples such as *maximus*, *pessimus*, *oximē* ‘most quickly’, and *medioximus* ‘midmost’. Although he does not wholly deny the possibility that these examples originate from *\*-ismmo-*, he gives *\*-smmo-* an independent status as a suffix, based on his view that Old Irish *nessam*

<sup>26</sup>Ernout and Meillet (1967, 660) say that *upamaḥ* was derived from *upa*.

<sup>27</sup>Also in Greek, the suffix *\*-mmo-* is not prevailing. Brugmann (1903, 8) takes into account δέχατος, which contains the ending -ατος, in order to explain the situation in Greek. According to him, -ατος would first of all have been made use of as the ending which derived adjectives such as ὑπατος ‘uppermost’ and μέσσωτος ‘midmost’ (ἔσχατος ‘furthest’ probably included) from stems which had spatial meanings and later would have been extended to a large part of adjectival stems. This resulted in the disuse of *\*-mmo-*. About the process in which *\*-tmmo-* was substituted with -τατο-, see footnote 21 above.

<sup>28</sup>Palmer (1988, 253-54) deduces this form by the process *\*ped-t<sub>e</sub>mo- > pessimo-*, but the existence of the corresponding comparative form *peior* is overlooked in this reasoning. Since *peior* is formed by means of *\*-yos-*, its zero-grade form *\*-is-* must be taken into consideration in the process of attachment of *\*-mmo-*. Therefore, *pessimus* should be attributed to *\*-is-mmo-* as *maximus* and *proximus*.

<sup>29</sup>Sihler says that “Exon’s Law . . . holds that in a PItal. tetrasyllable with two light medial syllables . . . the second vowel regularly syncopates,” but that “when the consonant between two medial short vowels is a liquid, the short vowel following the liquid—the third syllable—usually syncopates rather than the second syllable.” Sihler’s description does not include all the formulation which Exon (1906) presents. Exon indicates that the rule of accent in the republican period permitted the accent to be put on the fourth mora from the end of the word, on condition that the vowel in the final syllable counts as one mora whether it is long or short and that the penult and the antepenult are light in syllabic terms (ibid., 142). Moreover, he says that in the republican period, if the accented syllable was heavy, the following vowel would have undergone syncope (ibid., 129) while before that period the syncope occurred regardless of the weight of the accented syllable (ibid., 138). Exon treats various phenomena including the syncope caused by enclisis.

‘nearest’ goes back to *\*nedh-sṃmo-*.<sup>30</sup> However, since comparatives corresponding to superlatives such as *maximus* are formed by way of *\*-yos-*, the segment *-s-* seen after the roots should be attributed to *\*-yos- ~ \*-is-*. Moreover, *nessam* can also be reconstructed as *\*nedh-isṃmo-* without resorting to *\*-sṃmo-*.<sup>31</sup> In the cases such as *\*mag-isṃmo-* which changed into *\*magsṃmo-* through the syncope of *-i-*, the opposition between the corresponding comparative *\*magyos-* (> *\*mayyos-* > *maior*) and *\*magsṃmo-* seems to be based on the alternation of *\*-yos- ~ \*-sṃmo-*. Starting from this alternation, it is thought that the ending *\*-sṃmo-* came to be interpreted as a variant of the superlative suffix by metanalysis and became somewhat productive. This *\*-sṃmo-* was attached to stems such as *\*ācr-* and *\*faci-*.<sup>32</sup> and, as a result, they developed into *ācerrimus* and *facillimus* ‘easiest’ respectively. It was also suffixed to *\*-is-*, so that *-issimus* would be created.<sup>33</sup>

**2.3.4.** The suffixes discussed so far have *\*-m-* consistently, so they do not totally correspond to *\*(t)ero-* which contains *-e-* in spite of the semantic juxtaposition. The appearance of *\*-m-* seems to be influenced by some ordinal numbers in which *\*-m-* is observed in their endings. Analyzing the situation in Latin, we can recognize the secondary relation which was formed between superlatives and ordinal numbers.<sup>34</sup>

<sup>30</sup>Leumann (1977, 498) follows almost the same line. Benveniste (1948, 144) also establishes *\*-sṃmo-* in Italic and Celtic groups alongside of *\*-tṃmo-*.

<sup>31</sup>See Cowgill (1970, 132) and Jasanoff (1991, 172).

<sup>32</sup>Meillet and Vendryes (1979, 386) also presuppose *\*-samo-* and try to account for forms in *-errimus* or *-illimus* such as *pigerrimus* ‘most unwilling’ and *facillimus* ‘easiest’. The authors, however, propose the reconstructed forms *\*pigo-samo-* and *\*faci-samo-*, juxtaposing thematic vowels in the former example and retaining *-i-* at the end of the stem in the latter one. As regards the reason why such a reconstruction is not appropriate, see 2.2. and Nishimura (2000, 38 n. 7).

<sup>33</sup>The process of formation of these endings, *-errimus*, *-illimus*, and *-issimus*, is particularly discussed in Nishimura (2000).

<sup>34</sup>Besides the above mentioned suffixes, *-ēmo-* is found in a few superlative forms. Three forms, *suprēmus* ‘highest’, *extrēmus* ‘extreme’, and *postrēmus* ‘last’ are attested. There are superlative forms which were derived from the same roots by means of *\*-mo-* or *\*-tṃmo-*, that is to say, *summus*, *extimus*, and *postimus*. Their meanings are slightly different from those of the three above (*postimus* normally means ‘last-born’, e.g., *mortuō postumō filiō* ‘when the last son died’). Three ideas about the origin of *-ēmo-* have traditionally been suggested.

First, as supported by Ernout (1941), Palmer (1988), and Vineis (1998), the suffix *\*-mo-* is thought to have attached to the forms, *\*suprē*, *\*extrē*, and *\*postrē*, which might have been converted from old instrumentals to adverbs. The problem of this hypothesis lies in whether *\*-mo-* could be suffixed to case forms. It is difficult to answer the question why only instrumentals could have accompanied *\*-mo-* in spite of the fact that the transition of case forms to adverbs took place in other cases, namely, genitive, accusative, and ablative.

The second interpretation, which is proposed by Cowgill (1970, 126) and inherited by Sihler (1995, 368), is based on phonetic changes. The diachronic process advanced by Cowgill is as follows: *\*super-isṃmo-* > *\*superisemo-* > *\*superezemo-* > *\*suprezmo-* > *suprēmus*. Cowgill thinks that *\*-m-* would have changed into *\*-em-*, that the intervocalic *-s-* would not have perfectly rhotacized but reached the intermediate stage *-z-*, and that the preceding vowel *-i-* would have consequently been opened to *-e-*. At last, the accent assumed to be on the initial syllable might have caused the syncope by which the vowels in the second and fourth syllables would have disappeared. It seems that Cowgill intends to apply

### 3. Conclusion

In this paper, we have accepted Cowgill's opinion that *\*-mo-* which had a superlative meaning existed independently of ordinal numbers in origin. On the other hand, we have proposed that this *\*-mo-* had a secondary relation to ordinal numbers. The connection was originally supported by the fact that the form which had meant 'first' was replaced with that for 'foremost'. The superlative suffix *\*-mo-* was embraced within the category of ordinal numbers in this way, and as a result, the similarity between the superlative *\*-mo-* and the endings of ordinal numbers came to be recognized. Through such a process, the other ending of ordinal numbers *\*-t(H)o-* would have been activated as a part of the composite superlative suffix *\*-ist(H)o-*. Moreover, we have asserted that *\*-is-* + *\*-mo-* seen in Celtic and Italic languages did not result from transformation of *\*-ist(H)o-* based on the replacement of *\*-t(H)o-* by *\*-mo-*, but reflects an independent and archaic formation because *\*-mo-* is older than *\*-t(H)o-* as a superlative suffix.

In the latter half of this paper, we have observed how the variation of superlative suffixes was brought about under the influence of ordinal numbers, focusing particularly on the case of Latin. The formation of *\*(t)mmo-* and *\*-ismmo-* which contain not *\*-e-* as in *\*(t)ero-* but *\*-m̥-* is thought to have been influenced by ordinal numbers, especially, *\*septmmo-* and *\*dekmmo-*.

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the same kind of syncope to Latin as in the case of Old Irish (cf. Thurneysen 1993, 67). This hypothesis might be acceptable in that the apparently irregular endings are explained in the framework of phonetic changes, but we are not assured of whether a vowel could be more open before not only *-r-* but also *-z-* and whether such a syncope as Cowgill says would have occurred at the stage of *-z-* in the process of rhotacism.

The other alternative is supported by Brugmann (1903, 14-15), Sommer (1914, 460), and Leumann (1977, 317). According to them, the semantic counterpart of *dēmum*, at first, would have been modeled after *dēmum* in the morphological respect; *suprēmum* is thought to have been formed in this way. Then the other examples, *extrēmum* and *postrēmum*, would have incidentally been produced in turn. Although this hypothesis is difficult to prove or disprove, it seems to be the most passable resolution among these three interpretations. While Ernout (1941) appeals to the attachment of *\*-mo-* to instrumental forms, the possibility of the influence of *dēmum* is not denied in Ernout and Meillet (1967, 204).

Varro (*L.L.*, VII, 51), citing the passage from Naevius "Patrem suum supremum optimum adpellat" ('She thus calls on her father, the all-highest and good') and giving a comment "supremum ab super-rumo dictum", suggests that *\*superrumo-* would lead to *suprēmum-* through an unknown process (see Warmington 1936, 52-53), but his etymology is not clear in its detail. In order to deduce *suprēmum-* from *\*superrumo-* the syncope of *-e-* in the second syllable would be necessary. Such a syncope, however, seems unlikely because *-e-* in question is in a closed syllable and is thought to have been accented. Therefore Varro's suggestion may well be regarded as suspicious. Sommer (1914, 458), in fact, says that *\*superrumus* was invented by Varro himself.

About the ending *-ēmo-*, it seems unlikely that a more favorable explanation than that of Brugmann (1903), Sommer (1914), and Leumann (1977) will be proposed. Szemerényi (1976, 416), criticizing the hypothesis of Cowgill, also considers the interpretation based on *dēmum* as "imperative."

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## Abstract

In Proto-Indo-European, the paradigm of comparison was still not established, and there would have only been some suffixes which added a certain meaning to the stem. Among such suffixes, *\*-mo-* was the most important as a superlative suffix in the paradigm of comparison which would later be established. The origin of this suffix has traditionally been attributed to ordinal numbers because of its morphological resemblance to them. In this paper, we accepted Cowgill's opinion that *\*-mo-* existed independently of ordinal numbers in origin.

On the other hand, however, I proposed the possibility that this *\*-mo-* formed a secondary relation to ordinal numbers. The connection was originally supported by the fact that the form which had meant 'first' was substituted with that for 'foremost'. *\*-mo-* was embraced within the category of ordinal numbers in this way and, as a result, the similarity between the superlative *\*-mo-* and the endings of ordinal numbers came to be recognized. Through such a process, the other ending of ordinal numbers *\*-t(H)o-* would have been activated as a part of the superlative suffix *\*-ist(H)o-*. Moreover, we have asserted that *\*-is-* + *\*-mo-* seen in Celtic and Italic was not the transformation of *\*-ist(H)o-* based on the replacement of *\*-t(H)o-* by *\*-mo-*, but would reflect an independent and archaic formation because *\*-mo-* is older than *\*-t(H)o-* as a superlative suffix.

We observed how the variation of superlative suffixes was brought about, focusing particularly on Latin. *\*(t)mmo-* and *\*-ismmo-* which contain not *-e-* as in *\*(t)ero-* but *\*-m-* are supposed to have been influenced by ordinal numbers, especially, *\*septmmo-* and *\*dekmmo-*.