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GRAMMATICAL CHANGE
IN INDO-EUROPEAN
LANGUAGES

PAPERS PRESENTED AT THE WORKSHOP
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The origin of the feminine gender in PIE

An old problem in a new perspective

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The PIE gender system consisted of two genders, most likely animate and neuter; the earliest manifestations of feminine gender were derivational and involved the suffix $*-h_2$, which in origin derived abstract nouns. This suffix also gave origin to the neuter nominative-accusative plural, formerly a collective rather than a count plural. The semantic development is accompanied by morphological change: in the case of the neuter nominative-accusative plural, a derivational suffix became an inflectional ending, while, in the case of feminine gender, a derivational suffix became the marker of an inflectional class. The two morphological developments are different, and there is no reason for assuming that one of them implied the other. However, when discussing the semantic aspect of the change, it is generally assumed that either collective preceded feminine or the other way around. In my paper I suggest a different solution by considering that the two developments must be kept separated.

Keywords: abstract, collective, feminine, gender, individuation, animacy, derivational suffix, inflectional suffix

1. Introduction

In the present paper I review once again the problem of the Indo-European feminine gender, of the original function of the suffix $*-h_2$, and of the relation between its two developments, i.e. neuter plural ending, and theme vowel associated with the feminine gender. Given the limits of the paper, I cannot summarize more than a century of research on the matter.¹ I will start with some well known facts, and proceed to discuss what I think is misleading in current theories about the relative chronology of the changes in which the suffix $*-h_2$ is involved. I will suggest that one should give up trying to establish a relative chronology between the two

1. A survey of the issue can be found in Leco-Lemos (2003).

developments, because they remained separate from the very beginning, and that it is the original function of the suffix as a marker of abstract nouns that can explain how it could turn into the ending of the nominative/accusative neuter plural on one side, and into an inflectional class marker and gender marker on the other, following different paths.

2. Some previous explanations

Litscher (2004) summarizes as follows what he calls some generally accepted facts (“seit langem bekannten und allgemein akzeptierte Fakten”):

- a. the feminine gender is a recent innovation; and
- b. the suffix involved was in origin a collective suffix.

As uncontroversial as they may seem at first look, the two statements are quite different. While (a) is indeed a fact, supported by an array of well known morphological data, (b) hides an interpretation: in fact, the original meaning of the suffix is not reconstructed simply as collective, but rather, already in Brugmann’s work, as abstract, and secondarily collective. This is an important point, because the tendency to treat abstract and collective as a single value of the suffix has resulted in the fact that most attempts at describing the evolution of the suffix $*-h_2$ take for granted that the feminine in some way derives from the collective. Thus, Tichy (1993) assumes that some collective nouns were reinterpreted as feminine while the suffix was still derivational (i.e. before it became the inflectional ending of the nominative/accusative neuter plural), while Litscher (2004) suggests that the suffix became an inflectional ending before being reinterpreted as the marker of the feminine gender.

All explanations that connect the collective with the feminine, either as a derivational suffix, or as an inflectional ending, raise problems. Litscher points out that Tichy’s description of the development implies that the rise of gender concord, in which the reconstructed demonstrative $*tah_2$ played a major role, happened when the suffix was derivational, but concord by means of derivational suffixes is unknown elsewhere in Indo-European. His own solution is to reconstruct a change by which the collective suffix turned into the inflectional ending of the nominative/accusative neuter plural, but was then reinterpreted as the marker of the feminine, again because “*einzelne durch Kollektiva ausgedrückte Konzepte als belebte Wesen aufgefasst wurden*”. After these ‘concepts’ were felt as referring to animate beings, the corresponding nouns could no longer be treated as neuters inflectionally: this led to the creation of new feminine endings (i.e. the endings of the $-ā$ - declension), on the model of masculine nouns of the thematic declension.

At this stage, the inflectional ending $-a$ was reinterpreted as a (derivational) gender marker. Abstract nouns were attracted into the feminine gender, so the initial relation between collective and abstract remains unexplained.

Beside other problems, current explanations imply an accidental origin of the feminine: some collective nouns happened to refer to feminine beings, and were the source of the ‘spread’ of the feminine. For example, according to Tichy (1993) it all started with the word $*h_2wid^h_2eweh_2$, an ancient collective, indicating the relatives of a dead person, and later ‘widow’. In this respect, current theories do not differ much from Brugmann’s (1891) hypothesis, according to which the word for ‘woman’, $*g^wenā$ ($*g^wenh_2$), was in origin an abstract noun from an otherwise unattested verb ‘give birth’, which caused the suffix to be re-interpreted as gender marker.

3. Setting the issue in a new perspective

In Section 2 we have seen various problematic aspects of the alleged development *collective* > *feminine*: either one has to reconstruct agreement through derivation, or to ignore that the fact that abstract nouns are associated with feminine gender in the Indo-European languages is a consequence of the original value of the suffix $*-h_2$, which should not be disposed of so easily. Besides, there is apparently no other way to explain this development than through coincidence, an explanation that should preferably be avoided.

In order to find a new solution, I would like to suggest that there is no relation between the collective and the feminine, but that both developments go back to the original function of the suffix, i.e. to build derived abstract nouns, which could secondarily also have a collective meaning. If we give up the idea of deriving the feminine from the collective, a new scenario rises, summarized in Table 1:

Stages 1 and 2 are chronologically ordered, whereas stages 2a and 2b represent two separate developments:

2. a. a derivational suffix turns into an inflectional one, preserving (part of) its meaning;

Table 1. Development of Suffix $*-h_2$

1. derivational suffix (non-obligatory)
2. a. neuter nouns:
inflectional suffix (nominative/accusative plural, obligatory)
b. i. $-ā$ - stems:
marker of inflectional class (‘theme vowel’, obligatory)
ii first class adjectives:
marker of inflectional class and feminine gender (obligatory)

- b. a non-obligatory, meaningful suffix turns into a theme vowel, i.e. a purely grammatical, obligatory item, which is also interpreted as the marker of a noun class (i.e. of a grammatical gender).

In what follows, I will try to substantiate my hypothesis, by showing (a) how abstract and collective relate to each other, and (b) how nominal classification in Indo-European changed from a system based on degrees of individuation to a system based on referential gender (sex and, partly, animacy).

4. Abstract and collective

That abstract and collective are neighboring concepts is certainly not a new idea.² However, it can be useful to discuss the issue, in order to understand mechanisms of semantic change.

Abstract nouns are of several types: in particular, they can be non-derived, as *love* in English, or they can be formed out of another word with a derivational suffix. This was apparently the nature of PIE nouns formed with the suffix $*-h_2$. But how do we know that the semantic extension was from abstract to collective, and not the other way around? Indeed, some studies of semantic change seem to demonstrate that change proceeds from concrete to abstract (see for example Sweetser 1990). However, in the specific case of abstract/collective suffixes, there is plenty of evidence that change can proceed in the direction from abstract to concrete: suffice it to mention English nouns such as *police*, *administration*, or *nobility* (names of institutions or classes that also indicate their members).

In general, in the case of abstract nouns, semantic change leading from abstract to concrete is well attested, as in the case of action nouns turning into nouns of 'result', as is the case of Latin deverbal nouns formed with the suffixes *-tio* and *-tus* and the corresponding nouns in the Romance languages. While such nouns in Latin only indicate actions (e.g. *ingressus* 'the action of entering', 'the beginning of an activity'), in the Romance languages they also indicate concrete referents, as Italian *ingresso* 'entrance'.³

As for the relation between abstract and collective, one can observe some important similarities, which concern the internal structure of abstract and collective entities, as well as mass nouns. Let us start with the latter. Mass nouns indicate referents that have no internal structure: in the terms of Talmy (2000) they are

2. See for example Ledo-Lemos (2003: 123–125), with some examples from Latin.

3. The concrete meaning already existed in Latin, but only at a late epoch, see Fruyt (1996), who mentions a passage from Tacitus. Examples of several Indo-European suffixes that attest to this change are given in Nussbaum (1986).

multiplex continuous.⁴ The same is true of collectives, as opposed to count plurals: while count plural nouns are multiplex discrete, i.e. they indicate a collection of separate uniplex entities, collective referents again are continuous, because they do not refer to a collection of individuals, but to a mass (exactly as mass nouns). Because they do not present an analyzable internal structure, mass and collective nouns rank lower on a scale of individuation than count plurals and count singulars do. Since they cannot be internally analyzed, in spite of being multiplex, and do not indicate a single, well individuated entity, mass and collective nouns are less concrete than count nouns, even if they refer to concrete entities. For this reason, abstract suffixes often come to indicate collectives: as their name implies, abstract entities, too, have a low degree of concreteness.

As an example of a suffix that is currently undergoing semantic extension from abstract to collective, I would like to mention Italian *-istica*. This suffix is connected with *-istico*, which derives relational adjectives from nouns, similar to English *-istic*; the feminine of the adjective can be turned into an abstract noun, and corresponds to English *-istica* (*linguistica* = *linguistics*). Recently, the suffix has started to be used for the derivation of collective nouns, without necessarily passing through abstract ones: i.e. it is the suffix that has acquired a new function/meaning, not some abstract nouns that have turned into collective nouns. Below are some examples:

- (1) *Per ottenere il passaporto compilare la relativa modulistica.*
'In order to receive a passport one must fill in the relevant forms.'
- (2) *Manca su questa materia un'adeguata manualistica.*
'On this topic there are no adequate handbooks.'
- (3) *Sconto del 20% su tutta la sanitaristica in esposizione.*
'20% discount on all sanitary ware on display.'

The above examples contain nouns formed with the suffix *-istica*. They are grammatically singular, but refer to a plurality. The corresponding plural of the non-derived count nouns has the same meaning:

- (1)' *Per ottenere il passaporto compilare i relativi moduli.*
- (2)' *Mancano su questa materia adeguati manuali.*
- (3)' *Sconto del 20% su tutti i sanitari in esposizione.*

4. Talmy (2000) indicates plexity and continuity among possible features of referents. Plexity refers to the presence of units: one unit referents are uniplex, other referents are multiplex. Multiplex referents, in their turn, can be conceived as formed by separate units (discontinuous) or by an amorphous mass (continuous).

Note that the nouns with *-istica* in the examples are only collective: in other words, there are no abstract nouns *modulistica*, *manualistica* and *sanitaristica*. Again, it is not the case that some abstract nouns have turned into collective for reasons connected with the meaning of the base of derivation; on the contrary, it is the suffix which has acquired a new meaning, namely that of concrete collective. This, I think, should also be reconstructed as a parallel to the semantic development of the suffix **-h₂* in its semantic extension from abstract to collective.

After the extension to collective, the suffix **-h₂* came to have two quite different functions:

- a. collective: used with concrete inanimate nouns to indicate a mass, a plurality that cannot further be analyzed: it indicates a feature of referents that could also have another value (the same referents could be singular);
- b. abstract: derives action nouns from verbs; it indicates a type of referent: the function is classificatory.

At this point, the suffix, with its two different meanings, took two different paths of development. From (a) it became increasingly obligatory, it was integrated into the inflection of neuter nouns, which did not have a count plural, and became what we know from the Indo-European languages as the nominative/accusative plural neuter. From (b) it developed into the marker of a noun class, as we will see in the next section.

5. Noun classification and individuation

The hypothesis that the PIE gender system was at an early stage a system of nominal classification based on different degrees of individuation was first suggested by Ostrowsky (1985).⁵ I would like to elaborate on this idea, focusing on the special status of abstract referents.

On an individuation scale, the entities that rank higher (i.e. the most individuated ones) are human beings, which have the following features:

- a. intentionality/rationality: human beings are thought to act voluntarily, based on rational thought;
- b. control: human beings can cause a state of affairs to come into being;
- c. discourse prominence: because human beings are especially interested in other human beings, they are frequent topics of discourse, as opposed to inanimate entities (and animals).

5. Throughout the paper, I use the terms "noun class" and "gender" as synonyms, following Corbett (1991).

Nouns that refer to human beings are frequently found in transitive sentences, where they are syntactically subjects and semantically agents, besides being often topics. Note however that nouns with human referents are also frequently objects/patients: in other words, human beings are extremely versatile, as shown by the fact that they can even be caused to act, i.e. they can function as causees, or intermediary, or even instruments.

Inanimate entities on the other hand are much less versatile: typically, they cannot move, and consequently cannot exert control and bring about states of affairs. Nouns that refer to inanimate entities often occur in transitive sentences as direct objects/patients, and most often are not discourse topics. Usually, inanimate entities are acted upon by human beings, not only as the goal of their activity, but often also as instruments: a typical feature of inanimate entities is that they can be manipulated by agents. Given the limited extent of their participation in events, inanimate nouns rank low on the scale of individuation.

However, not all inanimate entities correspond to the above description. For example, natural forces can bring about events, even if they do not act volitionally/rationally; they can be manipulated only to a limited extent, so they usually are not acted upon or used by human beings. Among inanimate referents that can be said to have an in-between status between human beings and inanimate concrete entities are the referents of abstract nouns. Consider for example emotions: emotions are very relevant for human beings, not only because they cannot be manipulated (not even to the limited extent to which natural forces can be), but also because they typically cause human beings to act. The following sentences represent some typical beliefs of human beings about emotions:

- (4) *His ambition led him to disaster.*
- (5) *She is devoured by envy.*
- (6) *Faith can move mountains.*

Another frequent type of abstract nouns is represented by action nouns (which are precisely the group of nouns typically feminine in the Indo-European languages). Action nouns refer to events (not necessarily actions), and often occur in sentences in which their effects on human beings are focused, such as:

- (7) *Victory in the previous game encouraged the home team.*
- (8) *A good walk will keep you healthy.*
- (9) *Inflation caused many to go out of business.*

Abstract referents are not as versatile as human beings, but they are certainly much more likely to appear in a variety of states of affairs, playing different roles, than inanimate concrete entities. They are also much more likely to be chosen as

discourse topics. Action nouns often imply a human activity, intentional and rational, so their possible agency derives from the agentive nature of the state of affairs in which the corresponding verb can occur, as in (7) and (8). In other cases, abstract nouns can refer to events whose causes are generally felt by human beings as unclear: for this reason, they look very much like natural forces, as is the case of *inflation* in (9).⁶ For all these reasons, some abstract nouns rank higher than concrete inanimate nouns on the scale of individuation.

We are now in a position to sketch a reconstruction of the PIE noun class system, based on the above remarks regarding the individuation of human, abstract, and inanimate concrete referents as in Table 2:

Table 2 Prototypical features of Proto-Indo-European genders

I HUMAN	II ABSTRACT	III INANIMATE CONCRETE
concrete	abstract, non-manipulated	concrete, manipulated
+intentional	-intentional	-intentional
+control	+control	-control
highly individuated	moderately individuated	non-individuated
plural count	-	collective

6. From individuation to gender

The suffix **-h₂*, in origin a derivational suffix that formed abstract nouns, was reinterpreted as the marker of a noun class, the class of nouns which had a middle position on the individuation scale. Through its extension, it became the marker of an inflectional class (a theme vowel). Nouns in this inflectional class started to look more and more similar to nouns in the thematic declension, on account of the occurrence of the newly created long stem vowel: consequently, the same vowel was extended to adjectives which followed the thematic declension. At this point, from the morphological point of view, the system looked very much like the system of inflectional paradigms that we can reconstruct for late PIE, with *-o*-stems, *-ā*-stems, and athematic declension.

The last development was a change in the feature that organized the noun class system, which switched from individuation to referential gender. The first two genders, which contained highly individuated and moderately individuated referents, were reinterpreted as indicating the two referential genders masculine and

6. That economics is held to escape human control is clearly shown by metaphors commonly connected with free market, starting with Adam Smith's 'invisible hand' (i.e. the hand of God).

feminine, while the gender of non-individuated entities remained virtually unchanged, as shown in Table 3:⁷

Table 3. Late Proto-Indo-European gender system

GENDER I (HUMAN)	GENDER II (ABSTRACT)	GENDER III (CONCRETE INANIMATE)
masculine	feminine	neuter

7. The pre-prehistory of PIE gender: the two gender system

It is commonly held that the system outlined in Table 3 originated from an older two gender system, in which the relevant feature for assignment of nouns to either class was animacy. In this original system, the animate and the inanimate gender must be understood as prototypical categories (as virtually all genders in all gender systems), which means that some entities could be assigned to a certain gender even if they did not share all prototypical features. A well known case is constituted by generic words for animals, or for young animate beings including children, which were assigned to the inanimate gender, not because they referred to inanimate entities, but because they lacked many features of animacy (such as rationality and/or capability to procreate). Possibly, nouns could be assigned to either gender on formal grounds as well. The prototypical nature of such categories as noun classes must be kept in mind, because nearly all genders contain what Corbett (1991: 13) calls 'semantic residue'.⁸ The existence of a semantic residue accounts for possible gender assignment opacity at all stages.

The three gender system reconstructed in Table 3, in which three noun classes were kept distinct, according to varying degrees of individuation, was brought about by a sub-distinction within the inanimate gender: in other words, the inanimate gender split into two genders or classes, inanimate concrete, least individuated, and abstract, moderately individuated and morphologically marked by the suffix **-h₂*. When the system changed again, and switched to gender assignment based on referential gender, the feminine gender was enlarged by words that had human female referents, which previously belonged to the class of human beings (i.e. highly individuated referents), together with nouns with human male referents. The three stage development is outlined in Table 4:

7. This system is also reconstructed in Matasović (2004).

8. In Corbett's definition, "The semantic residue comprises nouns whose gender is not assigned according to a positive semantic criterion" (1991: 13).

Table 4. the Indo-European gender system: summary of the evolution

STAGE 1	ANIMATE		INANIMATE	
STAGE 2	HUMAN		ABSTRACT	CONCRETE
STAGE 3	MASCULINE	FEMININE	NEUTER	

As is well known, a two gender system is attested in the Anatolian branch of Indo-European, and quite a lot of ink has been spilled in the attempt to establish whether Anatolian lost the feminine gender or whether it split from PIE before the feminine gender was established. The limits of this paper do not allow me to discuss this matter in detail; see Matasović (2004) and Luraghi (forthcoming) on the distribution of abstract nouns across genders in the ancient Indo-European languages. Note that, having disconnected the development *abstract* > *feminine* from the development *abstract* > *collective*, my hypothesis accommodates the Hittite data with no need to reconstruct further, more or less ad hoc, changes.

8. Summary and conclusions

In the above sections, I have offered a new explanation for the rise of the PIE three gender system. In my explanation, I have suggested that the suffix $*-h_2$, which originally served the purpose of deriving abstract nouns, underwent two different changes: on the one hand, it was reinterpreted as a collective suffix, and as such it became grammaticalized as a case ending, the nominative/accusative neuter plural. On the other hand, it became the marker of a noun class, in a threefold noun class system, based on the degree of individuation of referents. Noun classes in this system were human (highly individuated), abstract (moderately individuated), and concrete inanimate (least individuated). The suffix then became a theme vowel, and as such the marker of the $-ā$ - declension. Later, the relevant feature for assignment into one of the three noun classes changed from individuation to referential gender, thus yielding the familiar three gender system, with masculine, feminine, and neuter.

With respect to earlier explanations, the one outlined in this paper has several advantages:

1. it does not raise the problem of the chronological relation between the development of the $*-h_2$ suffix into an inflectional ending and its reinterpretation as a gender marker: one does not have to posit the derivation of the gender marker from an inflectional ending, or to suppose that a derivational suffix could serve the purpose of agreement;

2. it avoids resorting to the chance factor and explaining the creation of the feminine gender as due to the accidental occurrence of collective nouns with human female referents;
3. rather than advocating the decisive role of certain words or pronouns, it explains the evolution of the suffix in connection with the creation of a whole classification system;
4. it also accounts for the Hittite data, without the need of reconstructing any further hypothetical changes.

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