

# ***Die, das, der: An empirical study of the teaching and learning of German noun gender***

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## **Abstract**

This article reports the findings of a study conducted on a group of Irish university students to identify the effect which training in noun gender would have on their assignment of gender to nouns in German. The study focuses on a specially designed set of rules, which was introduced to the students to promote their acquisition of gender and to increase their accuracy with it. Students were also trained in the use of mnemonics which deal specifically with German noun gender. The findings are very positive and show a marked improvement in students' accuracy in assigning gender to a list of German nouns. The findings also show that when students have learned gender rules they can then transfer this knowledge to assigning gender more accurately in written production.

## **Background**

German is one of the more complex languages because it has four classifications for nouns — masculine, feminine, neuter, and one general plural. Grauberg (1971), as cited by Rogers (1987: 49), together with Delisle (1985: 61) and numerous other researchers have found grammatical gender to be a major problem for learners of German at all levels. The difficulty arises because learners of German see no logic to the assignment of gender. Several studies (e.g. Zubin and Köpcke 1981; Poplack, Pousada, and Sankoff 1982; Rogers 1987) have investigated the origins of gender assignment but unfortunately for the L2 learner, nothing to date has proved conclusive.

### *Gender assignment*

Linguists have long debated whether the origins of gender are semantic or syntactic. It is not clear if a noun is assigned its gender because of its synchronic phonological, syntactic, and semantic characteristics or simply because gender has been passed down through generations of native speakers. Several studies have

introduced theories which favour arbitrary assignment, and others which favour semantic, phonological, and morphological regularities. Maratsos (1979), cited by Zubin and Köpcke (1981: 439), shares 'the traditional belief that gender is an arbitrary categorization which defies rationality' by saying 'no underlying rationale can be guessed at'.

Zubin and Köpcke (1981: 439) advance the theory that if children can form generalizations about gender, then the basis for this must be 'an extensive set of phonological and semantic regularities'. They refer to MacWhinney (1978) and the evidence that German children can assign gender by using the phonological and semantic characteristics of nouns. Poplack, Pousada, and Sankoff (1981) looked at gender assignment of English loanwords in German to get some general indications of how gender may have been assigned in the past. They refer to the findings of several researchers, who have come up with the following hypotheses: 'Arndt (1970) claims it is graphemic and morphological, and an earlier study by Reed (1942) cites analogical, suffixal, and physiological criteria as well as association of English *the* with the German feminine determiner *die*' (Poplack, Pousada, and Sankoff 1981: 5). Gender can also be assigned to loanwords logically by adhering to the rule: loanwords take their gender from the closest lexical equivalent. Delisle (1985: 55) claims that 'gender is to a large extent arbitrary, ... however assignment in German is subject to certain regularities' and that 'native speakers of German employ strategies when assigning gender'. This study concludes that gender assignment is a combination of both arbitrary and systematic assignment and that the cues which exist in relation to systematic assignment should form an integral part of the teaching and learning of German noun gender.

#### *Gender acquisition by L1 and L2 learners*

In order to appreciate the acquisition of gender in German for L2 learners, it is useful to look at the different stages L1 learners go through. McNeill (1966), as cited by Tucker, Lambert, and Rigault (1977: 15), believes with Chomsky that we are born with a Language Acquisition Device (LAD) 'which receives primary linguistic data — essentially a corpus of speech from fluent speakers within hearing range — as input and has grammatical competence as output'. The Language Acquisition Device, as defined by Ellis

(1994: 24), enables learners to work on what they hear and to extract the abstract rules that account for how the language is organized. A child therefore can use immediately the linguistic data it hears and through practice can reach perfection. According to Mills (1978), cited by Rogers (1987: 56), 'children learning languages with extensive systems seem to be acquiring these from age three years onwards'. Rogers (1987: 57-8) refers to studies by MacWhinney (1978) which show that 'the onset of article acquisition in German occurs from age 2 onwards'.

Carstensen's (1980) study (cited by Delisle 1985: 60) compares second language learners to children learning a first language and points to the fundamental difference between the two, i.e., that second language (L2) learners bring 'the knowledge of a first language to the task of learning a second'. The result is that L2 learners often assign gender based on semantic properties, which in many instances is not the case in German (e.g., assigning *die* to the following typically feminine nouns: 'Cover-Girl (*das*), Eyeliner (*der*), Make-up (*das*)'). The priority for the L2 learners — children and adults, in studies by Wichter (1982) and Carstensen (1980) — was initially to be able to converse with others, probably either work colleagues or German children in the playground or crèche.

Ellis (1994: 110) has a similar view: 'certain semantic features (for example, person) appear to be acquired before others (for example, gender)'. Eventually L2 learners become concerned, either consciously or unconsciously, with accuracy and the use of correct gender and at that stage would either start to pay particular attention to gender by learning it or by applying some rules governing gender. Ellis (1994: 359) lists the following examples of studies into learners' implicit and explicit knowledge of grammatical rules: Tucker, Lambert and Rigault (1977), Seliger (1979), Hulstijn and Hulstijn (1984), Sorace (1985), and Green and Hecht (1992). Other studies (e.g. Spitz 1965, Strong 1976, Wilmots and Moonen 1999) have investigated the use of rules, generally morphological (e.g. nouns ending in *-heit* and *-keit* are feminine) and semantic (e.g. seasons and months are masculine), and the assistance they can offer the L2 learner. These rules range from as few as six to more than 60. Some rules focus on monosyllables, loanwords, or nouns in general.

*Difficulties for L2 Learners and L2 teachers*

In 1976 the Goethe Institute commissioned a 3 year study entitled 'Lehrschwierigkeiten im Fach 'Deutsch als Fremdsprache' ['Difficulties of teaching in the subject "German as a foreign language" ' – *ed.*], which was conducted by Götze, Kemme, and Latzel (1979). As a result of this extensive research, and having consulted another similar study by Spitz (1965), the Goethe Institute concluded: 'Bei jedem Substantiv muß der Artikel gelernt werden' ['with each noun, the article must be learnt' – *ed.*] (Götze 1982 cited by Sperber 1989: 150).

Unfortunately this recommendation by the Goethe Institute is not sufficient to guarantee satisfactory accuracy with noun gender; it is very broad ranging and does not provide the learner with very much assistance. In spoken German, for example, the L2 learner will avoid interruptions in the flow of speech to remember the correct gender of nouns and will inevitably over-generalize or choose a gender on an ad hoc basis. In the case of new vocabulary, the L2 learner has often no way of identifying gender if the new vocabulary is incorporated into a text, which invariably introduces different cases and plurals and thus makes the learning process more difficult.

Rogers (1987: 53) warns that 'even an excellent memory or a good knowledge of rules for gender assignment can be no guarantee that gender will be correctly expressed'. The challenge for the teacher, therefore, does not end once the rules, whichever ones they might be, have been taught. Only through repeated and regular reference to the rules can a teacher hope to achieve a higher degree of accuracy in their application.

**Designing a set of rules**

The intention for this stage of the study was to create a concise set of rules, which governed a majority of German nouns relevant to L2 learners. This set of rules does not focus on English loanwords or monosyllables, as they have already been thoroughly investigated by Carstensen (1980) and Zubin and Köpcke (1981) respectively. Wilmots and Moonen (1999: 213-14) introduce a very practical approach to the three different gender types and this has been applied in designing this set of rules. They recommend 'die herkömmliche Reihenfolge zu modifizieren: statt der/die/das ist

die/das/der vorzuziehen, u.a. weil dies dem zunehmenden Schwierigkeitsgrad der Paradigmen entspricht: die mit 2 Formen, das mit 3 Formen, der mit 4 Formen'.<sup>1</sup>

The set of 40 rules used in this study follows three guidelines: (1) presentation under 3 headings in the order *die* (feminine), *das* (neuter), *der* (masculine), (2) main focus on feminine and neuter nouns; masculine nouns emerge then almost by a process of elimination, as suggested by Spitz (1965) cited by Rogers (1987: 54), and (3) reference to the form (spelling) and the meaning of nouns as advised by Strong (1976: 76).

Each heading contains a very concise listing of morphological properties (e.g. suffixes *-heit*, *-keit*, etc.) and semantic criteria (e.g. words of similar meaning such as names of days, months etc.). This writer mentions only very obvious and frequently used exceptions, e.g., *der Kaffee* 'the coffee' is an exception to the rule that nouns ending in *-e* are feminine. Suffixes were listed phonologically to form a rhyme, which is a mnemonic strategy suggested by Sperber (1989: 152).

The aim was to design a short set of rules which would appeal optically due to its brevity and phonologically due to its rhyming character. It is by no means an exclusive list. It focuses on rules and does not extend to exceptions. This allows students to concentrate on a limited number of rules and not be confounded by exceptions. Supplementary to the list of rules is a list of examples which reinforces the rules for students while also clarifying some of them (e.g. points on the compass such as *der Norden* 'the North'). Offering both rules and examples to students gives them a choice of working from one or other or both, depending on their personal preference.

Previous and more in-depth studies have concluded efficiency rates ranging from Spitz's (1965) 20 rules covering 90-96% of nouns to Strong's (1976) six general rules (expanded to 26 rules in total) covering 52.1% of 1,448 nouns. Spitz's rules sound very promising but because they evolve consecutively it must be argued that they would prove both difficult to learn and to apply spontaneously when required. Strong's (1976) rules are in parts quite

<sup>1</sup> to modify the conventional sequence: instead of *der/die/das*, *die/das/der* should be preferred, among other reasons because this corresponds to the increasing level of difficulty of the paradigms: *die* with two forms, *das* with three forms, *der* with four forms. [ -ed.]

vague, e.g., 'Nouns are generally masculine which end in -g (but not -ung), -f, and -tz'. More recently, Zubin and Köpcke (1981: 440) established 24 phonological gender rules governing 90% of 1,466 monosyllabic nouns. Similarly, these rules are also quite difficult to learn. According to Zubin and Köpcke (1981: 443) some depend on the learner's knowledge of another set of rules, e.g., 'nouns forming plural with -n are feminine'. Zubin and Köpcke (1981: 440) even suggest a rule which offers a choice of gender, e.g., 'nouns with long vowels are masculine or neuter'.

Wilmots and Moonen (1999: 213-4) present two rules, which they call *Hauptregel und Merkmalsklassen* ['Main rule and classes based on characteristics']. The *Hauptregel* refers to living things whose biological gender can be differentiated as feminine *die* or masculine *der*. The *Merkmalsklassen* consist of nouns that are assigned to one of the three gender categories according to certain features they possess. Wilmots and Moonen then continue to list a total of 53 features in the order *die, das, der*.

### Learning strategies

Ehrman (1996: 163) has defined learning strategies quite simply as 'activities and behaviors we use to learn'. The autonomous language learner will employ appropriate strategies to promote learning. Learning strategies can be classified as metacognitive, cognitive, affective, and social, and in fact researchers have proposed several other classifications. Skehan (1998: 264) explains that metacognitive strategies are broad ranging and include such activities as goal-setting, planning, monitoring, evaluating, and channelling attention. Skehan views cognitive strategies as being more directly involved with learning particular items and includes strategies like memorization and inferencing. Wenden and Rubin (1987) and Oxford (1990) have conducted comprehensive studies of learning strategies and show that the use of learning strategies will improve proficiency and create greater self-confidence. This article focuses on learning strategies which have been suggested and recommended to assist learners in the acquisition of noun gender.

### *Mnemonics*

'Mnemonics', meaning 'aiding memory', have been used for hundreds of years. Atkinson (1975: 828) points out that language learning involves learning, memorizing, storing, and retrieving information. Mnemonics therefore appear to offer the learner assistance in this task.

Several researchers have published studies on the numerous mnemonic techniques that exist (cf. Altmann and Raettig 1973, Bellezza 1981, Levin 1981, and Cohen 1984, to name but a few). Sperber (1989: 150) in particular was somewhat critical of the Goethe Institute's recommendation that the article should be learned with every noun. In his view it does not really reduce the demands put on L2 learners' memory. As a result of his extensive research, Sperber (1989: 150-169) developed a *Konzept zur Erleichterung des Genusproblems* ['concept for the easing of the gender problem']. It consists of at least 10 different mnemonics varying from aural to visual devices. Some of these are outlined here:

- (1) A high number of feminine nouns end in *-e*, *-ei* and *-ie*. Therefore an association with the *e* in the article *die* could prove to be an effective technique in remembering the gender of feminine nouns.
- (2) The '*clustering*' of suffixes to form acronyms or 'Quasi-Wörter' for each gender. Sperber (1989: 152) gives this example for feminine nouns:

#### Suffix

*-heit, -ung, -keit, -ei, -schaft, -ion*

#### Acronym

*die Heitungkeiteischaf tion*

- (3) Sperber (1989: 152) suggests rhymes developed from semantic properties of nouns relating to the three gender classifications, e.g. *Maskulina*:

*Jahreszeiten, Tageszeiten, Tage der Woche, Monate, Bezeichnungen der Niederschläge (der Regen, der Schnee usw.), viele alkoholische Getränke, mit Bier als Ausnahme.*<sup>2</sup>

<sup>2</sup> Seasons, times of day, days of the week, months, terms for precipitation (rain, snow, etc.), many alcoholic drinks, with beer as an exception. — *ed.*

This mnemonic was adapted when devising the set of rules used in this empirical study, which consciously listed the suffixes and semantic properties phonologically to form a rhyme e.g. 'Feminine are nouns ending in *-enz*, *-ik*, *-ion*, *-tät*, *-ur*, *-itis*'. One student in fact gave unsolicited positive feedback on this by saying 'I learned the rules in a rhyme'.

- (4) The use of a melody or a jingle can assist the learner in the learning process. This technique was mentioned by this empirical research when one student made the suggestion, 'you could put music to the rules'.
- (5) Visual 'clustering' of nouns of the same gender. Incorporating between 10 and 20 nouns creates a picture or a scene denoting a particular gender. Sperber (1989: 153) describes this method as 'besonders innovativ und erfolgsversprechend' ['especially innovative and promising'].
- (6) Sperber (1989: 155) creates interactive memory images for individual nouns. Firstly, the three genders are recoded to form symbols for feminine, neuter, and masculine nouns, e.g. a ballerina, an airplane, and a lion. Secondly students have to use their imagination and instead of trying to learn the German for lettuce, for example, in the traditional way all they have to think of is a lettuce in the shape of a lion's head or a lion eating a head of lettuce.
- (7) Use of colours, e.g. blue for masculine, pink for feminine, and green for neuter. This could be done by using coloured pens, underlining nouns in different colours, or listing nouns of the same gender on pages of individual colour. Sperber (1989: 169) develops this further to create interactive memory images where students could imagine a blue lion or a pink ballerina, etc.

Mnemonics are, however, quite time consuming to implement and put many demands on the learner's imagination. This in itself is probably the crucial factor in the success of mnemonics. If the teacher can activate the learner's imagination then they have succeeded in introducing an element of novelty and enjoyment into the classroom and will probably find the long-term results very positive.



### Classroom research

Classroom research was carried out on a group of third-year honours students of German at NUI Maynooth in 1999. The group consisted of 14 females aged between 20 and 22, all of Irish nationality. The objective of this research was to investigate whether students could learn several gender rules to improve their gender acquisition and assess the effect this would have on their accuracy. During the study, students were introduced to learning strategies for these gender rules. Students familiarized themselves with the application of the rules through exercise and practice.

#### *Control*

As part of their continuous assessment students complete two *Kommentare*, which are essays (of approx. 120 words) written during class time. *Kommentar* 1 was written one month prior to this training and *Kommentar* 2 one week following this training. The *Kommentar* is corrected in such a way that marks are deducted for grammar errors, but use of complex syntactical constructions is viewed favourably. Rogers (1984, cited in Rogers 1987: 49) shows that gender errors represent 8% of all errors 'occurring in a sample of written free compositions'. It can be assumed therefore that if students can improve their accuracy with gender then they can also reduce further grammar errors such as congruence.

#### *Methodology*

The research was conducted over five sessions in the scheduled language classes at NUI Maynooth. Two questionnaires were used to obtain information from the students before and after the training. Students were asked about the learning strategies that they employ, their knowledge of gender rules, their views on current methods of vocabulary learning, and subsequently their reaction to this training. The questionnaires consisted of multiple choice, direct yes-or-no, and open-ended questions.

In order to provide a comparative evaluation of their accuracy with noun gender, students were given a pre-training test and a post-training test. Each test consisted of a list containing 100 German nouns to which the students were asked to add the appropriate gender. Elementary vocabulary was taken from the book *Themen Neu 1* (Aufderstraße et al. 1992) used by the students in First Year. Nouns were chosen randomly but attention was paid to

choose primarily nouns which adhered to the gender rules being learned.

### *Training procedures*

The training involved an inductive rather than a deductive approach. Students discover the rules for themselves, thereby enhancing learner autonomy. This approach aimed at encouraging the students to have a more personal identification with the rules and therefore a longer-lasting knowledge of them.

To make the learning process for the students interesting, challenging, and interactive, a range of exercises and a variety of social forms of learning were introduced, e.g. individual work, pair work, group work, and homework. The exercises included students inducing the rules governing gender themselves, listing examples for these rules, filling in gender gaps in a text, identifying the gender of nouns in a newspaper article, correcting gender errors in a letter, and translating into German.

### **Research findings**

Prior to the training students were given Questionnaire 1, which set out to collect information on students' perception of noun gender, familiarity (if any) with the rules for identifying gender, and satisfaction with how vocabulary learning is addressed currently at NUI Maynooth. Seventy-one percent of students are unhappy with the current method of vocabulary learning because vocabulary is left to them to learn and it is not routinely tested. Some 79% of students always learn the noun together with its gender. All students agree that it is important to know correct noun gender. Fifty percent of students were familiar with gender rules and 71% of these had previously learned gender rules. Sixty-four percent of students could list some rules, on average two rules per student. The most frequently listed rule was that nouns ending in *-ung*, *-keit*, and *-e* are feminine.

Questionnaire 2, distributed after training, collected information on students' perceptions of the benefits of this noun gender training, their knowledge of these gender rules, and their confidence with gender. Students were asked to suggest how this training could be introduced into the syllabus. All students are now satisfied that they know these gender rules and are more confident

about gender. All students were able to list some rules, on average 23 per student. Two students listed all 40 rules that had been introduced in the course of the empirical study. All students found training useful because they were previously not familiar with the rules and were now given guidelines on how to learn them. Some 93% of students stated that they would use the handouts for exam revision. The most frequently listed rules were (a) nouns ending in *-ung* and *-e* are feminine and (b) *-er* nouns and months are masculine. Eighty-six percent of students felt that regular testing and more emphasis on vocabulary learning was important, while 93% thought that this training could be incorporated into the syllabus, either specifically in first year or in special classes on gender for a limited period.

The findings are impressive because they demonstrate the students' ability to learn rules and apply them accordingly when encouraged to induct the rules themselves and when given sufficient opportunity to practise them in a novel and challenging approach.

### *Test results*

Results from the pre-training test (Test 1) on the gender of 100 nouns can be seen in Table 1 below. The results of the first test were very varied, ranging from one student making no errors to another student making 56 errors. In total the students made 250 errors, on average 18 errors per student. Some 79% of students had stated that they 'always learn the noun together with its gender'. The results of this test, however, show that this method alone does not guarantee sufficient accuracy with noun gender.

The student who made 56 errors completed only 60 of the nouns. Sixteen of these were incorrect and the remaining 40 nouns left blank were also marked incorrect. Similarly, the student with the second-lowest score of 43 errors completed 70 nouns, 14 of which were incorrect and 30 incorrect as they were left blank. The student with the third lowest score represented a similar case. These three were the only students who left blanks in the test. This demonstrates that these students had difficulty with the exercise and lacked confidence, which led them to leave blanks rather than guess the gender, a strategy which would have given them a 33% chance of being correct. The student who made 56 errors stated that she was not familiar with the rules and could not list any of

them. The other two students both stated that they were not familiar with the rules but went on to list one rule each. This leads to the conclusion that there is a correlation between knowledge of gender rules and the number of errors a student makes. Students who could list as many as 13 rules only made between 0 and 15 errors. However, students who could only list up to two rules made between 16 and 56 errors.

Results from the post-training test (Test 2) on the gender of a different list of 100 nouns were considerably less varied than for Test 1. These are also shown in Table 1. In total the students made 107 errors on Test 2, an average of eight errors per student. Error levels ranged from two students making one error to another student making 16 errors. Only three students failed to give all nouns, two of whom either left one blank or three blanks. These students made four, nine, and 13 errors respectively. Students who listed 15, 17, and 19 rules made the highest number of errors — 16, 13, and 11 respectively. This falls below the average number of rules listed per student of 23. Here again it can be seen that there is a correlation between knowledge of gender rules and the number of errors students make. Where students were able to list between 18 and 40 of the 40 rules the error levels are as low as eight errors or less. However, as students were only able to list up to 26 of the 40 rules, the error levels increase from eight to as many as 16 errors.

*Table 1: Comparison of results from Test 1 and Test 2*

Student	Test 1 errors	Test 2 errors	Improvement
1	0	1	×
2	3	4	×
3	3	8	×
4	4	4	=
5	10	16	×
6	13	9	✓
7	15	9	✓
8	16	8	✓
9	16	10	✓
10	20	7	✓
11	20	11	✓
12	31	1	✓
13	43	13	✓
14	56	6	✓
<i>Total errors</i>	<i>250</i>	<i>107</i>	✓
<i>Average errors</i>	<i>18</i>	<i>8</i>	✓

*Comparison of results from Test 1, Test 2, and Kommentare*

As shown in Table 1, the overall comparison of the results from both tests is very positive. The total number of errors made by students was reduced by 57% from 250 to 107. The average number of errors made per student was reduced by 55% from 18 to eight. Table 1 shows the individual results for each student. It is quite obvious that students who made 13 or more errors in Test 1 benefited most from this training as they all made improvements in Test 2. Students who made 10 or fewer errors in Test 1 remained more or less at this level, with the exception of one student who made 16 errors (but this is not regarded as significant).

A comparison of the number of gender errors made by students between the *Kommentare* 1 and 2 and Test 1 and 2 can be seen in Table 2 below.

*Table 2: Comparisons of Kommentare 1 and 2 and Tests 1 and 2*

Student	Errors <i>Kom 1</i>	Errors <i>Kom 2</i>	Imp	Errors Test 1	Errors Test 2	Imp
1	2	2	=	0	1	×
2	1	3	×	3	4	×
3	5	5	=	3	8	×
4	1	1	=	4	4	=
5	3	7	×	10	16	×
6	6	2	✓	13	9	✓
7	4	1	✓	15	9	✓
8	5	5	=	16	8	✓
9	3	5	×	16	10	✓
10	5	4	✓	20	7	✓
11	7	1	✓	20	11	✓
12	3	6	×	31	1	✓
13	4	1	✓	43	13	✓
14	4	2	✓	56	6	✓
<i>Total errors</i>	53	45	✓	250	107	✓
<i>Avg.errors</i>	4	3	✓	18	8	✓

Overall, the results for the *Kommentare* are very positive. The total number of gender errors made by students was reduced by 15% from 53 to 45. The average number of gender errors made per student was reduced by 25% from four to three. Students 14 and 13, who made the highest number of errors in Test 1, were successful in reducing their errors in Test 2 and *Kommentar* 2. Five of the nine students who made the most improvements in both tests

also made the most improvements in the *Kommentare*. According to Rogers (1987: 49), in written production gender accounts for 'the largest single group of errors in a straightforward frequency count'. The improvements that these students made in their *Kommentare* demonstrates that they could use their new knowledge of gender assignment to improve their accuracy in written compositions.

## Conclusion

The L2 learner is faced with the mammoth task of acquiring German noun gender. Researchers such as Tucker, Lambert, and Rigault (1977: 13) have found that native speakers, 'even very young children, have no apparent difficulty choosing the gender of nouns', and MacWhinney (1979, cited by Rogers 1987: 57) identified frequent case errors among native speakers, but very few gender errors. However, Wichter (1982) and Rogers (1987) identify gender acquisition in German as a complexity for L2 learners even at advanced levels. Achieving mastery involves a very slow procedure.

Mnemonics have been shown by Levin (1981) and Brown and Perry (1991) to help learners learn faster and recall better. They introduce a practical element of novelty into the classroom, and have a positive long-term effect. Sperber (1989) developed a range of mnemonics dealing specifically with German noun gender.

The research of the present empirical study found that prior to this training 64% of students could list gender rules, on average two rules per student, and post-training 100% of students were able to list some rules, on average 23 rules per student. Two students listed all 40 rules. Test results indicate a reduction of more than 50% in the total number of errors made by students. The results of a comparison of the two written essays or *Kommentare*, which were used as further source of data, were also positive. This indicates that when students have learned gender rules they can transfer this knowledge to assigning gender more accurately in written production.

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