



Brief article

Morphological priming survives a language switch

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ARTICLE INFO

Article history:

Received 16 June 2011

Revised 23 May 2012

Accepted 29 May 2012

Available online 26 June 2012

Keywords:

Psycholinguistics

Bilingual language processing

Language production

Morphological processing

Language switching

ABSTRACT

In a long-lag morphological priming experiment, Dutch (L1)–English (L2) bilinguals were asked to name pictures and read aloud words. A design using non-switch blocks, consisting solely of Dutch stimuli, and switch-blocks, consisting of Dutch primes and targets with intervening English trials, was administered. Target picture naming was facilitated by morphologically related primes in both non-switch and switch blocks with equal magnitude. These results contrast some assumptions of sustained reactive inhibition models. However, models that do not assume bilinguals having to reactively suppress all activation of the non-target language can account for these data.

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1. Introduction

For most people multilingualism is a fact of life (Edwards, 1994). Therefore, studying the representations of multiple languages and their interactions is very informative to our understanding of language processing. Strikingly, the majority of multilinguals are successful in keeping two or more languages apart (e.g. avoiding intrusions). A still debated question is how this is accomplished.

Some models of monolingual speech production assume that representations may compete for selection at certain levels (e.g. the lexical–syntactic level, Levelt, Roelofs, & Meyer, 1999). Eventually, the representation that wins the competition will be selected for production. The ease with which selection takes place depends on the activation levels of the competitors. When representations other than the target are highly activated,

selection will take longer (i.e. longer RTs; Levelt et al., 1999; Schriefers, Meyer, & Levelt, 1990). Under this assumption, bi- or multilinguals not only have to face competitors from the same language, they would potentially have to cope with competitors from other languages as well. Indeed, there is abundant evidence suggesting that in bilinguals, the lexicons of both languages are activated in parallel (Colomé, 2001; Green, 1986; Kroll, Bobb, & Wodniecka, 2006; Preston & Lambert, 1969; but see Costa, La Heij, & Navarrete, 2006). How then do multilinguals succeed in producing their intended language without interference from the non-intended language(s)?

Basically, two types of models have emerged to account for this question. The first type consists of models that assume that (a) activated words in both languages compete for selection (e.g. Hermans, Bongaerts, De Bot, & Schreuder, 1998) and (b) this competition is resolved by sustained reactive inhibition of the non-target language (inhibition model; henceforth IM). The best-known representative is the Inhibitory Control model (Green, 1986, 1998). This model proposes that from a conceptual level activation is sent to the lexicon where a cognitive control system con-

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trols further processing. This system activates a central mechanism, which determines the task at hand, for instance, if one needs to produce a word in L2, the mechanism acts as a controller by increasing L2 activation and suppressing L1 activation. Support that reactive inhibition is involved in keeping languages apart comes from studies that require participants to switch between languages (e.g. Meuter & Allport, 1999). A frequently observed pattern in these studies is that it is harder to switch back from L2 to L1 than from L1 to L2, presumably due to larger inhibition needed to suppress L1 when speaking in L2 (for a recent review see Kroll, Bobb, Misra, & Guo, 2008).

In contrast, there are models that do not assume sustained reactive inhibition of the non-target language (henceforth called non-IM; e.g. Costa, Miozzo, & Caramazza, 1999; Costa & Santesteban, 2004; La Heij, 2005; Poulisse & Bongaerts, 1994). This view is supported by data from Costa et al. (1999) who carried out experiments with Catalan–Spanish bilinguals. Participants were presented with picture–word pairs containing the name of the to-be-named picture (in Catalan) such as TAULA ‘table’ on which the Spanish translation was superimposed (i.e. mesa). If competition exists between languages, presenting an identical target name in the non-intended language would hypothetically lead to the highest amount of competition (and greatest necessity for inhibition). However, facilitation was found, which indicated that only target language items were considered for lexical selection (i.e. no competition and no need for non-target language inhibition). Furthermore, Costa and Santesteban (2004), using a switching task, not only showed *symmetric* L1–L2 switching costs for highly proficient bilinguals, but also for switching between L1 and their *unbalanced* L3. Therefore, they proposed that (balanced) bilinguals may invoke a qualitatively different selection mechanism than sustained reactive inhibition (especially when L2 proficiency is high).

Employing the Semantic Competitor Priming paradigm (SCP), Lee and Williams (2001) also explored bilingual language control. In this paradigm (adapted from Wheeldon & Monsell, 1994) a trial comprised five events. First, three descriptions were given to which participants should respond (in L1) using the correct definition (e.g. “sensory organ for seeing”, response: “eye”). After that participants needed to name two successive pictures (filler and target). If a previously named definition was semantically congruent with a target picture (e.g. “nose”), then prolonged RTs were observed compared to unrelated ones. Lee and Williams (2001) manipulated the language of the preceding filler picture and found that when the language changed to L2, semantic competitor priming disappeared for the target picture in L1 (but not when the filler picture was also in L1), to which they held inhibition of the language not in use (L1) responsible (two control experiments showed that this could not be attributed to a simple within-language effect in disguise). More recently, Hong and MacWhinney (2011), also using the SCP-paradigm, supported this conclusion but additionally found that language proficiency, classroom experience and immersion also played an important role. They proposed that less-proficient bilinguals may initially rely on inhibitory control but when proficiency in L2 increases, the two languages may become relatively independent.

To further investigate the issue of whether or not reactive inhibition of a non-target language is present during production, this paper focuses on the morphological level (after lexical selection) by conducting a long-lag priming experiment including a language switch. Specifically, we investigated whether potential inhibition of the L1 (Dutch) is present when faced with *numerous* L2 (English) items presented in between the L1 prime and L1 target.

The long-lag morphological priming paradigm uses morphologically related prime words to precede to-be-named target pictures at a distance of several trials (Zwitserlood, Bölte, & Dohmes, 2000). In this paradigm, a prime word and target picture share a free morpheme, such as *pineapple* and APPLE. In the Zwitserlood et al. (2000) study, a semantically related (pear – APPLE) and phonologically related condition (attic – APPLE) were included to differentiate morphological from semantic and phonological priming. In the immediate naming paradigm, all three conditions showed effects on naming latencies (i.e. semantic interference, phonological and morphological facilitation). However, in the delayed variant *only* the morphologically related primes significantly influenced RTs. Apparently, effects of phonological or semantic priming are short-lived whereas priming effects of free morphemes resulted in faster target naming latencies surviving at least 7–10 intervening trials.¹

Koester and Schiller (2008, 2011) replicated these results in Dutch, demonstrating its robustness. They found significant morpheme-priming effects for both transparent (e.g. *carwash*) and opaque compounds (e.g. *hogwash*, i.e. a word for which the meaning cannot be derived from its constituents). Another important observation (in line with Zwitserlood et al., 2000) they made is that mere form overlap again did not facilitate picture naming. For example, the Dutch prime *jasmijn* ‘jasmine’ did not facilitate picture naming for the Dutch target JAS ‘coat’. This suggests the existence of a separate morpheme level in language production.

The long-lag morphological priming paradigm provides a novel opportunity to further investigate whether and to what extent a language is inhibited during word production in bilinguals, specifically, by inserting L2 items between a (long-lagged) L1-prime and target. IM and non-IM make different predictions regarding the priming effect. According to the IM, presenting participants repeatedly with L2 stimuli in the intervening trials (which also have to be named) would require substantial reactive inhibition of active L1 nodes (strongly activated, therefore in need of significant inhibition). It would therefore be expected that the morphological priming effect is cancelled out. The non-IM, on the other hand, does not make that assumption and would predict that morphological priming survives unhindered, even though a different language is presented repeatedly between the prime and the target. In the following experiment, we tested whether the L1 long-lag morphological priming effect remains even when potentially large reactive inhibition of the L1 should occur.

¹ We thank an anonymous reviewer for pointing this out to us.

2. Experiment: long-lag morphological priming using switch and non-switch blocks

2.1. Method

2.1.1. Participants

Thirty-six Dutch–English bilingual speakers (25 female; mean 20 years) took part in this experiment. All participants were English Language and Culture students at Leiden University and completed a questionnaire to obtain general and language-specific information. Participants were requested to rate their English proficiency on a scale of 1–10 (1: very poor – 10: native-like). The average self-assessment was 8.4 ($SD = 0.8$). Participants also provided their English high school exam grades: average 8.0 ($SD = 0.9$). The average proportion of time using English per day for reading was 72%, speaking 36% and listening 63%. All participants gave informed consent and took part in an off-line English proficiency assessment task (Meara & Buxton, 1987).


2.1.2. Stimulus material

The target stimulus set consisted of 36 black-and-white line drawings of concrete objects. Stimuli were largely similar (approximately 70%) to Koester and Schiller's (2008, 2011). Target pictures were preceded by compound prime words from three relatedness conditions: *opaque*, *transparent*, and *unrelated* with seven or eight intervening trials (see Table 1 for an example and the Appendix for an overview).

The number of syllables, word frequency, number of phonemes, word length in letters, and stress position were controlled for (all F 's < 1; see Table 2). The target morpheme was in the word-initial or word-final position (distributed equally across conditions). In “tree house”, for example, the target morpheme “tree” is in word-initial position and in “apple tree” it is in word-final position.

We included 80 Dutch filler words and 50 English filler words to allow for the creation of the intervening trials.

Table 1
An example of a target with its respective conditions and primes.

Prime type	Example (prime)	Example (target)
Transparent	tongzoen (French kiss)	 tong (tongue)
Opaque	landtong (finger of land)	
Unrelated	vloerkleed (rug)	

Additionally, 30 pictures were selected that could be used as both Dutch and English fillers. Identical pictures could be used in Dutch and English since a colored frame around the picture indicated the language the picture was to be named in. Intervening trials consisted of both words and pictures. Koester and Schiller (2008, 2011) and Zwitserlood et al. (2000), Zwitserlood, Bölte, and Dohmes (2002) demonstrated that morphological priming effects survive lags between 7 and 10 intervening trials. We decided to employ only 7 and 8 intervening trials to reduce the experiment's length. To make the purpose less transparent, we changed the position of the intervening pictures and we also included catch trials (not analyzed), i.e. sequences of pictures and words that did not correspond to the order in which target trials were presented to avoid order expectation.

2.1.3. Apparatus and procedure

The experiment was conducted in a soundproof booth, using a SRBOX (Psychology Software Tools) with built-in voice-key. The experiment was designed and controlled using E-prime 2.0 (Psychology Software Tools). The procedure was similar to Koester and Schiller's (2008, 2011; adapted from Dohmes, Zwitserlood, & Bölte, 2004). Participants were given 5 min to familiarize themselves with the targets' Dutch and English picture names by studying a booklet. Subsequently, the experimenters assessed whether participants correctly remembered the picture names. Participants were instructed to name the pictures and read out loud the words that appeared on the screen as quickly and accurately as possible; red words and pictures were to be named in Dutch, and blue words and pictures were to be named in English. After having received the instructions, a practice block was administered. Ten stimuli were presented to familiarize the participants with the procedure and to assess whether the voice-key was adjusted optimally. Subsequently, all experimental stimuli were presented in four blocks, with short breaks in between. Two blocks were so-called switching blocks (including intervening English trials) and two blocks consisted solely of Dutch words and pictures, in which all stimuli were presented in white on black background (see Fig. 1 for overview). The order between blocks was counterbalanced.

Each trial began with the presentation of a fixation cross for 250 ms, followed by a blank screen for 250 ms. Next, the stimulus, either a word or a picture, was presented in the center of the screen for 400 ms. During the switch block, the color of the word or the colored frame around the picture indicated the target language. After that, participants had 1100 ms to name the word or picture. Subsequently, the experimenter scored the validity of the trial by assessing target language errors, word errors,

Table 2
Mean (SD) number of syllables, word frequency, number of phonemes, word length in letters, and stress position per condition.

	# Of syllables	Word frequency per million	# Of phonemes	Word length	Stress position
Opaque	3 (0.56)	145 (348.0)	8 (1.4)	9 (1.6)	1 (0)
Transparent	2 (0.56)	149 (241.1)	8 (1.5)	9 (1.4)	1 (0.2)
Unrelated	2 (0.49)	97 (89.6)	8 (1.3)	9 (1.5)	1 (0.3)

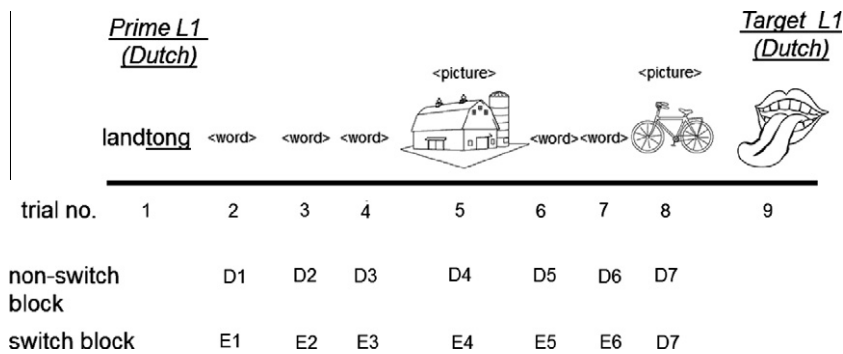


Fig. 1. An example of a long-lag prime-target sequence for both the non-switch and switch blocks (D = Dutch trial, E = English trial).

and voice-key errors. No feedback was provided during the experiment. The stimulus preceding a critical target (e.g. trial No. 8 in Fig. 1) always constituted a picture to be named in Dutch (to avoid additional switching costs and keep the switch and non-switch blocks comparable).

2.1.4. Design

A 2 (Block Type: switch vs. non-switch) × 3 (Prime Type: opaque vs. transparent vs. unrelated) design was implemented. Six different experimental lists were created. These six lists consisted of two different orders and three different distributions. Each participant only saw a particular target picture twice, once in the non-switch condition and once in the switch condition resulting in 72 (2 × 36) target trials per participant over all blocks. An example of a target's prime distribution across participants is shown in Table 3.

This way, no participant received a target in the same condition twice while assuring that all targets were tested in all conditions. Furthermore, intervening trials did not contain any phonologically or semantically related items to the target picture.

2.1.5. Results

A 2 × 3 repeated measures ANOVA with subjects (F_1) and items (F_2) as random factors was conducted. Errors (2.0%), voice-key malfunctions (3.0%), and reaction times that deviated more than 2.5 SDs from the mean per participant per condition (0.9%) were excluded from the analyses. There was a main effect of Block Type, $F_1(1, 35) = 20.18$, $MS_e = 13,436$, $p < .001$; $F_2(1, 35) = 80.23$, $MS_e = 3501$, $p < .001$, $\min F(1, 52) = 16.12$, $p < .001$, indicating that on average trials in the switch block took 71 ms longer to be named compared to non-switch block trials. There was also a main effect of Prime Type, $F_1(2,70) = 17.80$, $MS_e = 3676$, $p < .001$; $F_2(2, 70) = 13.08$, $MS_e = 4106$, $p < .001$, $\min F(1,$

68) = 7.53, $p < .001$, and no interaction between Block Type and Prime Type, all $F_s < 1$. Subsequent paired t -tests (see Table 4) showed that both opaque and transparent primes facilitated picture naming compared to control primes with the effect size being the same for both non-switch and switch blocks.

2.1.6. Discussion

We were able to replicate the morphological priming effect in the non-switch block, previously found by Zwitserlood et al. (2000) and Koester and Schiller (2008, 2011) using similar materials and experimental set-up. Crucially, morphological priming effects were also obtained in the switch block with identical magnitude to the non-switch block. In neither the switch- nor the non-switch block there was a significant difference between the opaque and transparent conditions, i.e. both prime types showed a similar amount of priming. This indicates that even when the contribution of the individual components of the compound to the meaning of the whole compound is not obvious, its morphemic representation is still activated. We attribute the fact that on average stimuli were named 71 ms slower in the switch than the non-switch block to additional processing costs which occur when faced with a more demanding (difficult) switching task opposed to a non-switching task (see Costa & Santesteban, 2004).

Our results clearly demonstrated that the morphological priming effect survived numerous intervening trials that were of a different language, which is in line with models, which do not assume sustained reactive inhibition. If such inhibition for Dutch is not required when facing English intervening stimuli, activation levels for Dutch remain high. This ultimately results in faster naming latencies when the Dutch target picture has to be named. If, on the other hand, sustained reactive inhibition of a language would be required, active Dutch items would have to be suppressed

Table 3
Distribution of the primes across participants.

	Participant A	Participant B	Participant C
Non-switch	strikvraag (opaque) 'trick question'	strikknoop (transparent) 'slipknot'	zandbank (unrelated) 'sandbank'
Switch	strikknoop (transparent) 'slipknot'	zandbank (unrelated) 'sandbank'	strikvraag (opaque) 'trick question'

Table 4

Reaction times (RTs; SD between parentheses) and percentage Errors (%E) for both non-switch and switch blocks, including effect size (*d*) and paired comparisons.

	Non-switch		Switch	
	RT	%E	RT	%E
Opaque	748 (90)	0.3	821 (98)	0.3
Transparent	737 (83)	0.3	806 (88)	0.3
Control	794 (87)	0.3	865 (97)	0.4
Comparisons	ΔRT	ΔE	ΔRT	ΔE
O–C	46 (95)	0.0	44 (105)	0.0
T–C	57 (80)	0.0	59 (98)	–0.1
O–T	11 (80)	0.0	15 (74)	0.0

repeatedly during the English intervening trials in the switch-blocks. Additionally, highly active representations would experience greater inhibition compared to less-active representations. Therefore, the similarity of the magnitude between switch- and non-switch blocks seems not to favor *reactive* inhibition in our data. Given that our results show faster naming latencies for targets preceded by morphologically related primes in the *switch* blocks with identical magnitude to the non-switch blocks, we propose that our data are not in line with accounts assuming that all active nodes of a language not in use should be reactively inhibited.

One may, however, propose that an inhibition mechanism, to avoid intrusions, only has to “dampen” the activation to some extent (instead of being an all-or-nothing phenomenon). Therefore, it might be that as our switch occurred during the trial before the target, the prime was again reactivated before the target appeared, and hence caused the priming effect. However, as the specifics underlying such a potential “dampening” scenario for our data currently are not clear (e.g. amount/period of dampening) further experiments (e.g. manipulating lag distance) will need to be undertaken to assess its potential.

Similarly, it is conceivable that at the morphological level (i.e. long lasting effect) there may have been no need for selection which may similarly have led to the persistence of particular relative activation differences and the re-surfacing of the effect once inhibition is released.² Our current findings do not allow a dismissal of models that do not assume inhibition of *all* active nodes, but instead assume that inhibition is confined to the translation equivalents of the response words (i.e. local inhibition). Colzato et al. (2008), for instance, proposed that selection of a word in the target language involves selective activation for that specific word, resulting in the inhibition of the translation equivalent in the non-target language. For example, when Dutch–English bilinguals name the picture of a *frog* in English (“frog”), according to this view only the Dutch translation equivalent (“kikker”) would be inhibited.

Costa and Santesteban (2004) discussed that a comparison of the overall speed of naming in the L1 and L2 over all

items per language (in the switch blocks) could be used as an index reflecting global inhibition³. Therefore, we averaged all items, which were named in the switch blocks separately for Dutch and English (e.g. all pictures/words including all fillers). A subsequent *t*-test showed that although on average Dutch items (742 ms) were named somewhat slower compared to English (736 ms), this difference was statistically not significant, $t(35) < 1$, therefore not indicating any potentially greater sustained inhibition for L1 compared to L2. However, the possibility should be entertained that our participants might have been *well-balanced* bilinguals³ (as they were highly proficient English Language and Culture students). Costa and Santesteban (2004) have proposed that balanced and unbalanced bilinguals may use a qualitatively different lexical selection mechanism. This view is further corroborated by Hong and MacWhinney's results (2011), which also indicated that high- (but not low-) proficient bilinguals were able to avoid L1–L2 interference. Therefore, language selection mechanisms may operate differently depending on proficiency level with highly proficient bilinguals not needing to rely extensively on inhibitory control. If this account also holds for our data, similar experiments using *unbalanced* bilinguals may be able to reveal inhibition of L1 (or L2) when performing the long-lag priming task.

To conclude, we reported data demonstrating that reading aloud a morphologically related word before the presentation of the target picture facilitates picture naming, even when numerous L2 items intervene. These findings are difficult to interpret within accounts adhering to sustained reactive inhibition but are in line with accounts, which do not make this assumption.

Acknowledgments

The authors would like to thank Dirk Köster for his help with the creation of the stimuli and Wido La Heij for useful suggestions on this manuscript. RV's research is currently sponsored by a Canon Foundation in Europe fellowship.

² We thank an anonymous reviewer for pointing this out to us.

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Appendix A. Appendix (experimental stimuli)

Target (English translation)	Opaque prime (English translation)	Transparent prime (English translation)	Unrelated prime (English translation)
strik (<i>bow tie/knot</i>)	strikvraag (<i>trick question</i>)	strikknoop (<i>slipknot</i>)	zandbank (<i>sandbank</i>)
kruis (<i>cross</i>)	kruisraket (<i>cruise missile</i>)	kruistocht (<i>crusade</i>)	netelroos (<i>nettle rash</i>)
parel (<i>pearl</i>)	parelhoen (<i>guinea fowl</i>)	parelsnoer (<i>string of pearls</i>)	aardkorst (<i>earth crust</i>)
melk (<i>milk</i>)	melkweg (<i>milky way</i>)	moedermelk (<i>mother's milk</i>)	dakterras (<i>terrace</i>)
steen (<i>stone</i>)	tandsteen (<i>scale</i>)	straatsteen (<i>paving stone</i>)	deurklink (<i>door handle</i>)
hand (<i>hand</i>)	handleiding (<i>manual</i>)	handdoek (<i>towel</i>)	bloedworst (<i>black pudding</i>)
spijker (<i>nail</i>)	spijkerrok (<i>jeans skirt</i>)	spijkerbed (<i>bed of nails</i>)	bergtop (<i>mountain top</i>)
zon (<i>sun</i>)	zondag (<i>Sunday</i>)	zonlicht (<i>sun light</i>)	haarband (<i>hair ribbon</i>)
kat (<i>cat</i>)	katzwijn (<i>faint</i>)	kattenbak (<i>cat box</i>)	eiwit (<i>egg white</i>)
sla (<i>salade</i>)	slavink (<i>meatball rolled in bacon</i>)	slakom (<i>salade bowl</i>)	brillenglas (<i>glass of glasses</i>)
broek (<i>trousers</i>)	lollbroek (<i>clown</i>)	zwembroek (<i>swimming trunks</i>)	dansvloer (<i>dance floor</i>)
kast (<i>closet</i>)	ribbenkast (<i>rib cage</i>)	koelkast (<i>refrigerator</i>)	bushalte (<i>bus stop</i>)
voet (<i>foot</i>)	voetveeg (<i>scape goat</i>)	voetstap (<i>foot step</i>)	hooiwagen (<i>harvest spider</i>)
brug (<i>bridge</i>)	ezelsbrug (<i>mnemonic</i>)	loopbrug (<i>foot bridge</i>)	vakschool (<i>trade school</i>)
hond (<i>dog</i>)	zeehond (<i>seal</i>)	waakhond (<i>watch dog</i>)	blokfluit (<i>recorder</i>)
jas (<i>coat</i>)	grapjas (<i>funny person</i>)	jaszak (<i>coat pocket</i>)	tentzeil (<i>canvas</i>)
stoel (<i>chair</i>)	paddenstoel (<i>mushroom</i>)	rolstoel (<i>wheel chair</i>)	proeftijd (<i>probation</i>)
vogel (<i>bird</i>)	pechvogel (<i>unlucky person</i>)	roofvogel (<i>bird of prey</i>)	stormwind (<i>gale</i>)
kers (<i>cherry</i>)	waterkers (<i>watercrest</i>)	kersenpit (<i>cherry stone</i>)	laurierblad (<i>laurel leaf</i>)
muis (<i>mouse</i>)	vleermuis (<i>bat</i>)	veldmuis (<i>field vole</i>)	schoonzus (<i>sister in law</i>)
tong (<i>tongue</i>)	landtong (<i>finger of land</i>)	tongzoen (<i>French kiss</i>)	vloerkleed (<i>rug</i>)
kaas (<i>cheese</i>)	pindakaas (<i>peanut butter</i>)	kaasschaaf (<i>cheese slicer</i>)	spaargeld (<i>savings</i>)
ezel (<i>donkey</i>)	ezelsoor (<i>dog ear</i>)	pakezel (<i>pack mule</i>)	schaakclub (<i>chess club</i>)
pot (<i>pot</i>)	potlood (<i>pencil</i>)	theepot (<i>teapot</i>)	zangkoor (<i>choir</i>)
boter (<i>butter</i>)	boterbloem (<i>buttercup</i>)	roomboter (<i>butter</i>)	sprinkhaan (<i>grasshopper</i>)
ster (<i>star</i>)	sterrenbeeld (<i>sign of the zodiac</i>)	morgenster (<i>morning star</i>)	borstvoeding (<i>breast feeding</i>)
vlinder (<i>butterfly</i>)	vlindermes (<i>kind of knife</i>)	nachtvlinder (<i>moth</i>)	hersenschim (<i>illusion;fantasy</i>)
kogel (<i>bullet</i>)	kogelbiefstuk (<i>round steak</i>)	kanonskogel (<i>canon's ball</i>)	mierenhoop (<i>anthill</i>)
goud (<i>gold</i>)	goudvis (<i>gold fish</i>)	bladgoud (<i>gold leaf</i>)	vulpen (<i>fountain pen</i>)
ekster (<i>magpie</i>)	eksterroog (<i>corn</i>)	eksternest (<i>magpie nest</i>)	barman (<i>bartender</i>)
neus (<i>nose</i>)	wijsneus (<i>know all</i>)	neusgat (<i>nostril</i>)	aktetas (<i>briefcase</i>)
appel (<i>apple</i>)	aardappel (<i>potato</i>)	appelmoes (<i>apple sauce</i>)	havenhoofd (<i>break water</i>)
kasteel (<i>castle</i>)	luchtkasteel (<i>daydream</i>)	kasteelheer (<i>lord of the manor</i>)	brandstof (<i>fuel</i>)
vos (<i>fox</i>)	sloddervos (<i>slob</i>)	vossehol (<i>fox hole</i>)	kruidnagel (<i>clove</i>)
boot (<i>boat</i>)	boothals (<i>boat-neck sweater</i>)	roeiboot (<i>rowing boat</i>)	kunstgebit (<i>false teeth</i>)
klok (<i>clock</i>)	klokhuis (<i>core</i>)	kerkklok (<i>church bell</i>)	bivakmuts (<i>balaclava</i>)

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