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Questions in the study of Slavic facultative animacy: the view from psycholinguistics and first language acquisition of Polish

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Abstract: This paper explores the questions and challenges raised by the class of facultative animate nouns in Slavic languages, through the case study of Polish. Gender agreement paradigms in Slavic languages distinguish between agreement with masculine animate nouns and masculine inanimate nouns, specifically in the accusative case. Facultative animate nouns are those that, despite being conceptually inanimate, pattern with masculine animate nouns in their grammatical behavior. This class of nouns is especially numerous and productive in Polish, and we explore the implications this may have from multiple perspectives: formal accounts of the Polish gender categorization system, first language acquisition of Polish animacy agreement, and real-time language processing of agreement marking in Polish. Our aim is to motivate future work on facultative animacy in Polish and other Slavic languages.

keywords: animacy · gender · Polish · acquisition · psycholinguistics

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1 Introduction

A lesser studied corner of Slavic grammatical gender systems is the interplay of gender and animacy. Details vary between Slavic languages, but, in most, masculine animate nouns determine minimally different agreement paradigms from masculine inanimate nouns, specifically in the accusative case (for an overview, see Kosta 2003). These facts raise important questions regarding the nature of noun categorization in Slavic languages, not just from a formal perspective, but also from the perspective of language acquisition and language processing. These questions are further complicated by the existence of a subclass of masculine nouns that, despite their conceptual inanimacy, pattern with masculine animate nouns in their grammatical behavior (these nouns have also been referred to as *facultative animate* nouns, a term we adopt here for ease of exposition). Again, details vary across Slavic languages: in West Slavic languages like Polish and Czech, this class is highly productive, while in Russian this class is small and not productive. Studies of gender and agreement in Slavic languages are thus faced with the challenge of determining the nature of animacy agreement – whether this agreement is driven by a purely semantic feature with a finite number of exceptions, or whether this is agreement with a grammaticalized animacy feature, analogous to grammatical gender.

In the present paper, we present Polish as a case study, as in this language the facultative animate class is especially productive, as will be discussed in §2.2. By investigating Polish, we are able to build on existing work on agreement in gender and animacy from the formal perspective (§2.3), from the perspective of first language acquisition of gender (§3), and the perspective of real-time language processing of agreement marking (§4). While we can only provide tentative answers to the questions we raise, our goal is to highlight the opportunities available in these domains and to provide a roadmap for future research, which we hope will motivate further work on facultative animacy in Polish and in other Slavic languages.

2 Background

2.1 Gender & animacy in Polish

It is generally accepted that the gender of a noun is most reliably determined by the agreement marking that it determines on co-occurring elements, such as adjectives or

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	Singular			Plural		
Case	M	F	N	M	F	N
NOM	zielon-y	zielon-a	zielon-e	zielon-e	zielon-e	zielon-e
GEN	zielon-ego	zielon-ej	zielon-ego	zielon-ych	zielon-ych	zielon-ych
DAT	zielon-emu	zielon-ej	zielon-emu	zielon-ym	zielon-ym	zielon-ym
ACC	zielon-y	zielon-ą	zielon-e	zielon-e	zielon-e	zielon-e
INS	zielon-ym	zielon-ą	zielon-ym	zielon-ymi	zielon-ymi	zielon-ymi
LOC	zielon-ym	zielon-ej	zielon-ym	zielon-ych	zielon-ych	zielon-ych

Table 1: Sample agreement paradigm for masculine, feminine, and neuter genders in the singular and plural, illustrated using the adjective *zielon-y/-a/-e* 'green'.

verbs (Hockett 1958, Corbett 1991, Kramer 2015). While the morphophonological form of the noun may also contain cues to its gender category, in most languages the correspondences between gender and form are not one-to-one. As illustrated using the agreement marking paradigm for the adjective *zielon-y/-a/-e* 'green' in Table 1, Polish is considered to have three (global) genders: masculine, feminine, and neuter. These distinctions are evident only in the singular; agreement paradigms for the three genders are syncretic in the plural.

Much like in other Slavic languages, the role of animacy in the Polish grammatical gender system is restricted to a subpart of the paradigm, specifically to masculine nouns in the accusative singular (Table 2). The adjectival agreement suffix determined by masculine animate nouns in the accusative singular is *-ego*, syncretic with the masculine genitive singular, and the suffix determined by masculine inanimate nouns in the accusative singular is *-y*, syncretic with the masculine nominative singular (see examples (1) and (2)[1]). Animacy distinctions do not arise in the feminine or neuter.

(1) Masculine inanimate

a. Zielon-y zegar wis-i na ścian-ie.
green-M.NOM.SG clock(M).NOM.SG hang-PRS.3SG on wall(F)-LOC
'(The) green clock is hanging on (the) wall.' (Polish)

b. Kupi-ł-am zielon-y zegar.
buy-PST-1SG.F green-M.I.ACC.SG clock(M).I.ACC.SG
'(I) bought a green clock.' (Polish)

(2) Masculine animate

a. Zielon-y żółw je sałat-ę.
green-M.NOM.SG turtle(M).NOM.SG eat.PRS.3SG lettuce(F)-F.ACC.SG
'(The) green turtle is eating lettuce.' (Polish)

[1]An anonymous reviewer points out that masculine animate accusative inflection would also be used in (2-b) if the green turtle was a stuffed animal, and therefore technically inanimate. This is certainly an interesting point regarding Polish noun classification more generally and relevant to the discussion in §2.2, though the potential animacy of toys is beyond the scope of the present paper. We point the interested reader to Opfer & Gelman (2010).

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	Singular		Plural			
Case	Animate	Inanimate	Personal	De-virilized	Animate	Inanimate
NOM	zielon-y	zielon-y	zielon-i	zielon-e	zielon-e	zielon-e
GEN	zielon-ego	zielon-ego	zielon-ych	zielon-ych	zielon-ych	zielon-ych
DAT	zielon-emu	zielon-emu	zielon-ym	zielon-ym	zielon-ym	zielon-ym
ACC	zielon-ego	zielon-y	zielon-ych	zielon-ych	zielon-e	zielon-e
INS	zielon-ym	zielon-ym	zielon-ymi	zielon-ymi	zielon-ymi	zielon-ymi
LOC	zielon-ym	zielon-ym	zielon-ych	zielon-ych	zielon-ych	zielon-ych

Table 2: Sample agreement paradigm for masculine subcategories in the singular and plural, illustrated using the adjective *zielon-y/-a/-e* 'green'.

b. Kupiłam zielon-ego żółw-ia.
buy-PST-1SG.F green-M.A.ACC.SG turtle(M)-M.A.ACC.SG
'I bought (a) green turtle.' (Polish)

As evidenced in a comparison between (1) and (2), animate and inanimate masculine nouns differ not only in the adjectival agreement marking they determine but also in the case inflection on the noun. Declension class and grammatical gender are not equivalent but are tightly linked, and although case marking on the noun is not itself a determinant of gender category, it does reliably distinguish animate from inanimate masculine nouns in Polish and has been used as a diagnostic for (facultative) animacy (§2.2). Specifically, in the accusative singular, masculine animate nouns take the suffix *-a* (2), while masculine inanimate nouns take -∅ (1). Additionally, in the genitive singular, masculine animate nouns take the case suffix *-a* (ex. *czarn-ego ps-a* 'black-M.GEN.SG dog(M)-M.A.GEN.SG'), while masculine inanimate nouns take *-u* (ex. *czarn-ego stoł-u* 'black-M.GEN.SG table(M)-M.I.GEN.SG'), though note that the adjectival agreement suffix does not differ between animate and inanimate nouns in the genitive singular.

Returning to adjectival agreement paradigms, additional distinctions within masculine nouns arise in the plural. Though these are outside of the scope of the present paper, we briefly introduce them here (Table 2). First, masculine nouns referring to humans ("masculine personal" nouns, ex. *chłopiec* 'boy(M)', *lekarz* 'doctor(M)') determine distinct agreement in the nominative plural and accusative plural. Second, masculine nouns referring to humans but with a pejorative connotation (ex. *brzydal* 'ugly person(M)', *leń* 'lazy person(M)') pattern with masculine personal nouns in the accusative plural but with inanimate nouns in the nominative plural and all other cases in the plural. This category of nouns is also sometimes referred to as the de-virilized class.

If gender categories are indeed defined by the agreement marking they determine on associated elements, it is no surprise that the observed differences in agreement marking in subparts of the paradigm have led to a debate as to how to formally describe the gender system of Polish. At the center of this debate is whether (sub)classes

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of nouns with minimally different agreement paradigms constitute evidence of subdivisions of a single (masculine) gender category or rather evidence that Polish has more than three grammatical genders.

One commonly adopted approach (Mańczak 1956) posits that Polish has five gender categories: masculine personal (M1), masculine animate (M2), masculine inanimate (M3), feminine, and neuter. Evidence in support of this account comes from agreement marking specifically in the accusative case, and this account has been adopted in some formal grammars (ex. *Gramatyka współczesnego języka polskiego*, Dukiewicz & Urbańczyk 1984) as well as in some theoretical work on gender in Polish (ex. Przepiórkowski 2003).

Other accounts do not consider masculine animate nouns to constitute a distinct category. Szober (1963) argues that Polish has five gender categories but proposes a different structure: masculine, feminine, and neuter in the singular; personal and all others in the plural. Swan (2015) suggests Polish has four gender categories: masculine, feminine, neuter, and personal.

A different approach takes Polish to be a three-gender system but with animacy distinctions formalized as subcategories of the masculine gender category (Corbett 1983). Under this system, masculine, feminine, and neuter are the global genders, while masculine animate, masculine personal, and masculine de-virilized constitute subgenders of the masculine. Corbett defines a subgender to be a noun class with a minimally different agreement paradigm, whose differences from the global gender do not arise in the nominative singular, i.e. the citation form.

Recent psycholinguistic evidence is in line with the latter approach. Given the central role of agreement marking in the formal literature on gender categorization, Fuchs (2025a,b) investigated the real-time processing of the agreement marking that distinguishes masculine animate from masculine inanimate nouns, i.e. the adjectival accusative singular suffix *-ego*. In an eye-tracking study in the Visual World Paradigm (Tanenhaus et al. 1995), Fuchs found that when native speakers of Polish processed an adjective in the accusative case ending in *-ego*, they anticipated a masculine animate noun, as expected based on prior work (Szewczyk & Schriefers 2013, Szewczyk & Wodniecka 2020). Crucially, Fuchs manipulated the gender and animacy of visible competitors and found that both masculine inanimate competitors and feminine animate competitors reduced looks to the masculine animate target, more so than did feminine inanimate competitors. These results suggest that the processing of *-ego* activates two independent features – a masculine gender feature and an animacy feature – which each pre-activate matching nouns (i.e., masculine nouns regardless of animacy, and animate nouns regardless of gender, respectively).

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Thus far we have provided an overview of how the interplay of animacy and gender agreement has motivated investigations in both the formal and psycholinguistic literature on gender categorization in Polish. However, this literature has largely underestimated or deliberately set aside facultative animate nouns, which we turn to next.

2.2 Facultative animate nouns in Polish

As introduced in §1, a major challenge for the study of gender and animacy in Polish is the existence of a non-trivial number of facultative animate nouns – masculine nouns that, despite being conceptually inanimate, pattern with conceptually animate masculine nouns in their grammatical behavior (ex. Swan 1988, Schenker 1955). In the accusative singular, adjectives agreeing with facultative animate nouns take the *-ego* suffix, and the nouns themselves are inflected with the case suffix *-a* (3); in the genitive singular, facultative animate nouns take the case marker *-a* (4).

(3) a. Znalaz-ł-am star-ego papieros-a.
find-PST-1SG.F old-M.A.ACC.SG cigarette(M)-M.A.ACC.SG
'I found an old cigarette.' (Polish)

b. Kupi-ł-am czerwon-ego lizak-a.
buy-PST-1SG.F red-M.A.ACC.SG lollipop(M)-M.A.ACC.SG
'I bought (a) red lollipop.' (Polish)

(4) Kolor star-ego cukierk-a by-ł nie-apetyczn-y.
color(M).NOM.SG old-M.GEN.SG candy(M)-M.A.GEN.SG be-3SG.PST NEG-appetizing-M.NOM.SG
'(The) color of (the) old (piece of) candy was unappetizing.' (Polish)

It is worth noting that facultative animate nouns may not all be consistently used as such across the population of Polish speakers. Swan (1988) selected 300 reportedly facultative animate nouns and surveyed 30 native Polish speakers, asking them to rate each noun on a scale of 1-4, based on how likely speakers would be to inflect that noun with the accusative case marker *-a* if it were the object of a provided transitive verb. Based on results of the survey, Swan classified each noun as having "relative strong facultative animacy", "moderate facultative animacy", or "weak facultative animacy". That the average scores for most nouns fell on the full spectrum between 1 and 4 demonstrates that many nouns may not consistently be used as facultatively animate.

Even accounting for some inter-speaker variation, the class of facultative animate nouns in Polish is quite large. Swan (1988) suggests that there may be as many as 800 facultative animate nouns in Polish, though he notes that this category may have grown substantially since it was first documented in earlier work. Efforts have been

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made to list and classify the types of nouns that show this grammatical behavior (ex. Bogusławski 1986, Kosta 2003). Bogusławski (1986) listed the following: "(a) name of a being, or (b) the name of a dead being, or (c) a name of a dead body, or (d) a name of a mushroom, or (e) a brand name of an automobile, or (f) a brand name of an airplane, or (g) a name of a game, or (h) a name of a kind of dance, or (i) a name of a monetary unit, or (j) a name of a cigarette..." Kosta (2003) later augmented this list with additional categories: "(k) names of diseases ... (l) drinks ... and journals or buses." It has been noted that the class of facultative animate nouns in Polish appears to be quite productive (Żydek 1961). This is further supported by more recent work, in which native speakers of Polish productively used animate accusative case marking with both recent English loanwords and English nonce words (Fuchs 2014).

The breadth of the types of nouns that fall into this category has posed a challenge for attempts to generalize and formally define membership in the facultative animate class.[2] Saloni (1976) proposed a formal test for predicting which masculine nouns will behave grammatically like animate nouns and which will not. The test was as follows: nouns that can be referred to using the pronoun *kto* 'who' can be treated as (facultative) animate, whereas those that are referred to using *co* 'what' cannot. However, as noted by Swan (1988), this test fails to capture much of the facts, and the link between the form of a pronoun and the grammatical gender category of the referent noun is debatable. Janda (1996) proposes that nouns fall on a continuum between FIGURE and GROUND, wherein the prototypical FIGURE is the SELF and the prototypical GROUND contains "ambient intangibles and abstractions". All nouns fall on a spectrum between these endpoints, and nouns closer to SELF are more likely to be treated as animate. However, this does not clearly predict the behavior of many facultative animate nouns, and Janda notes that "the FIGURE-GROUND distinction is really a metaphor for how we relate to our world, both subjectively and objectively. It is well known that a metaphor is rarely reducible to an algorithm" (p. 343). Riley (1999) builds on Janda's proposal by proposing that facultative animate nouns belong to the category of "personal space nouns", which are a subset of FIGURE nouns that "are often directly in front of, or come in direct contact with our faces or bodies." This also fails to fully capture the empirical facts, as well as the inter-speaker variation in facultative animacy (Swan 1988) and the productivity of this class, i.e., that real and nonce English loanwords are assigned the facultative animate class regardless of conceptual animacy (cf. Fuchs 2014). Kosta (2003) is, to our knowledge, the first to formally suggest the idea of animacy as an abstract syntactic feature, although the term "grammatical animacy" had been used

[2] A discussion of hypotheses regarding the historical emergence of facultative animacy in Polish is beyond the scope of the present paper, but we point the interested reader to Swan (1988).

earlier (ex. Riley 1999). Speaking generally about the Slavic languages, Kosta proposes that animacy may be both a semantic feature and a syntactic one, referring to the latter as the "new animacy category".[3] Under Kosta's system, a conceptually animate masculine noun bears a semantic animate feature, whereas a facultative animate noun bears a syntactic animacy feature (p. 193). We explore this possibility in the context of the literature on gender categorization in Polish next.

2.3 Implications for the internal structure of the Polish gender system

Given the prevalence of facultative animate nouns in the Polish lexicon, a theory of gender in Polish would remain incomplete without accounting for their classification. From the formal perspective, we suggest that analyzing facultative animate nouns as nouns instantiating grammatical animacy allows them to be integrated into the noun categorization system of Polish under both prominent approaches to gender and animacy – the subgender approach (Corbett 1983, Fuchs 2025b) and what we call the M2 approach for ease of exposition (Mańczak 1956). In fact, we note that doing so is consistent with a cross-linguistically very common property of noun categorization systems, namely that gender categories typically consist both of a semantic core and of what has sometimes been referred to as "semantic residue" (Corbett 1991). The semantic core of a gender category is those nouns whose assignment to that category is predictable based on semantic properties of the referent (ex. Polish *kogut* 'rooster(M)', *byk* 'bull(M)', *kura* 'hen(F)', *krowa* 'cow(F)'). The gender assignment of nouns in the "semantic residue" is arbitrary, as their referents do not have sex-differentiable properties (ex. *stół* 'table(M)', *zegarek* 'watch(M)', *łyżka* 'spoon(F)', *latarka* 'flashlight(F)'). For these nouns, gender is an abstract grammatical feature. Despite the implications of the term "residue", it is important to note that these nouns make up a large part of gender categories in many languages.

Given this context, let us first consider facultative animate nouns within the M2 approach wherein Polish gender consists of five categories: M1, M2, M3, F, and N (ex. Mańczak 1956, assumed also by Dukiewicz & Urbańczyk 1984 and Przepiórkowski 2003). If this approach is on the right track and we take seriously the idea that a gender category can consist of both nouns with predictable semantic properties and nouns whose assignment to that category is arbitrary, then facultative animate nouns fit directly into the M2 category. The M2 noun class then consists of conceptually animate masculine nouns (the semantic core) and facultative animate nouns (the semantic residue).

[3] Kosta (2003) also notes that the syntactic animacy feature behaves differently from the semantic animacy feature with respect to θ-role assignment, though this is beyond the scope of the current work.

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Under the subgender approach, nouns are categorized with a gender feature and an independent (in)animacy feature. Facultative animate nouns are marked with a grammatical animacy feature, while conceptually animate masculine nouns are marked with a semantic animacy feature (Kosta 2003). If we assume categorization by animacy to be a type of noun categorization, similar to (grammatical) gender, then this is a natural extension of the animacy agreement system. One potential challenge is that, in the case of animacy, inanimate nouns being assigned to a prototypically animate noun class constitutes not just arbitrary assignment but in fact a direct conflict between the real-world properties of the referent and the assigned grammatical feature. However, we note that instances of such conflict between the semantic and formal properties of a word also exist for gender, ex. *dziewczę* 'girl(N)'.

Conceptually, then, the notion of animacy as an abstract grammatical or syntactic feature is consistent with the current understanding of noun categorization and can be accommodated under either prevailing approach to Polish noun categorization. We now turn to consider what questions and challenges facultative animate nouns pose for first language acquisition in Polish §3 and for real-time language processing in Polish §4.

3 Facultative animate nouns in first language acquisition

In first language acquisition, animacy distinctions (both non-linguistic and linguistic) appear early in the developmental trajectory. Looking first at non-linguistic animacy, research in the field of child development suggests that, by nine months of age, infants distinguish between animate and inanimate objects based on motion cues (Poulin-Dubois et al. 1996). Older children (ages 3-5) also predominantly use voluntary motion to distinguish between animate and inanimate objects. For instance, Gelman et al. (1983) found that children were above 95% accurate when categorizing objects as animate and inanimate, and that they explained their answers in terms of motion and agentivity (e.g. "the doll cannot throw a ball unless you make it"). This suggests that the non-linguistic ability to conceptually distinguish between animate and inanimate objects develops early and is robust by preschool age.

Considering animacy in a linguistic context, children are sensitive to conceptual animacy in language from a young age, even when the language they are acquiring does not have animacy- or gender-based noun categories. Conceptual animacy functions as a helpful tool for learning and accessing word meaning in early language acquisition. For instance, English-learning 19- and 24-month-old infants use animacy-related verb

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semantics to identify a novel noun, based on whether the verb requires an animate subject, like "eat" and "sleep" (Ferguson et al. 2014, 2018). Conceptual animacy also plays a role in acquisition of word order. Croatian-learning children produce adult-like ditransitive constructions, varying the order of the direct and indirect objects based on their animacy (Velnić 2019).

Not only are children acquiring Slavic languages sensitive to conceptual animacy in the ways discussed above, but they also encounter reflexes of animacy encoded in the broader noun categorization and agreement system in their language. It has been suggested that in acquiring gender categories of nouns, children rely both on noun-internal information, such as its morphophonological form, and on agreement between nouns and other parts of speech, such as articles, verbs, and adjectives (ex. Gagliardi & Lidz 2014). Agreement cues may be especially useful in Slavic languages, where nominal case paradigms are sometimes syncretic across different grammatical genders, but agreement can serve as a disambiguating cue. Grammatical gender has been shown to be acquired relatively early. In Romance languages like French and Spanish, evidence of abstract grammatical gender emerges between ages 2;6 and 3 (Melançon & Shi 2015, Lew-Williams & Fernald 2007). Among Slavic languages, a similar age range has been suggested for Polish and Russian, with the distinction between masculine and feminine genders emerging by age 2;4 for Polish (Dąbrowska 2006) and age 3 for Russian (Cejtlin 2003), although the neuter gender may take longer to be reliably acquired in both languages (Cejtlin 2003, Dąbrowska 2006).

Children learning Slavic languages need to master not only grammatical gender but also agreement in animacy, which is evident specifically in the accusative. Accusative case is the second most frequent case present in child-directed speech in Polish, accounting for around 19% of nouns in the input (Janssen 2016). Evidence from production studies suggests that Polish children begin to produce nouns in the accusative case around age 2 and are adult-like in their production of accusative case-marked nouns by around age 4 (Dąbrowska & Szczerbiński 2006).

A logical next question then is how facultative animate nouns might affect child learners in their acquisition of Polish noun categorization and agreement, and specifically how they acquire animacy distinctions in the accusative. The grammatical behavior of many masculine nouns might signal to the child learner that the distinction between animate and inanimate masculine noun categories is purely conceptual. However, if facultative animate nouns frequently occur in the accusative singular in the input, then Polish-learning children encounter conflicting cues, as these are conceptually inanimate objects showing grammatical behavior that patterns with conceptually

animate objects.

In investigating the acquisition of noun categorization in Polish, it is therefore important to determine whether these facultative animate nouns are indeed present in early input to child learners of Polish. In addition, evidence from speech production by child Polish speakers can give insight into whether they treat animacy agreement as purely conceptual, in which case we expect productions of facultative animate nouns with inanimate masculine agreement and/or case marking, or whether they are acquiring a grammaticalized animacy agreement feature, in which case we expect to find facultative animate nouns produced with animate agreement and/or case marking in the accusative.

3.1 Approach

We conducted a preliminary corpus search of both adult child-directed speech (CDS) and child production in Polish.[4] First, we examined CDS to determine if young children encounter facultative animate nouns in the input at early stages of language acquisition. If this is the case, then we can expect that children will produce facultative animate nouns on a similar timeline to other nouns learned by this age. Alternatively, facultative animate nouns might be unattested in Polish CDS, and instead be exceptions to animacy categorization that children only encounter at later ages. If this is the case, we do not expect early child productions of facultative animate nouns. Second, we examined child productions to determine if children do indeed produce facultative animate nouns and, if so, whether the nominal case marking and/or adjectival agreement marking show(s) evidence of children treating these nouns as grammatically animate or inanimate.

3.2 Materials and methods

To look for evidence of facultative animate nouns in CDS, we conducted a search of the Polish CDS corpus, available on the CHILDES database (children ages 0;10 and 6;1) (Haman et al. 2011). To look for whether and how children themselves produce facultative animate nouns, we conducted an analogous search of the Weist-Jarosz Polish corpus, with production data from four children between the ages of 1;7 and 3;2 (Weist & Witkowska-Stadnik 1986, Jarosz 2010). Given evidence that grammatical gender categories emerge around the age of 2-3 (§3), we specifically selected the latter corpus based on the ages of the children. This corpus is also annotated morphologically and provides English glosses.

[4] All scripts for querying the databases and results are available on the OSF repository for this paper at https://osf.io/aedkx/overview?view_only=1403aadc290740bf8bbba28cddecfe8b.

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In each of these corpora, we searched for the 18 lexical items that we used in the experimental design of our eye-tracking study (§4.2.2), as these were concrete, imageable nouns whose use as facultative animate we verified using a norming task with adult native speakers of Polish. We searched for each of these words in the uninflected form (i.e. nominative case) as well as in the accusative singular. Searching for the uninflected form shows which words children are familiar with in general. Searching for the inflected form in the accusative singular allows us to determine which of the words are heard and/or produced with the agreement and/or case marking that is specific to masculine animate nouns. Since nominative case is the most frequently occurring and is the earliest case acquired by children (Janssen 2016), more of the target facultative animate words may be present in the corpora in their base form than in their inflected forms.

3.3 Results

Looking first at adult speech, 16 out of the 18 target facultative animate nouns were present in the Polish CDS corpus in at least one form. The two nouns that are not attested are *gofr* 'waffle(M)' and *szampan* 'champagne(M)'. Additionally, 12 of the 18 nouns were present in an inflected form that ends in *-a*, which marks accusative and genitive case on masculine animate and facultative animate nouns (§2.1). This corpus does not include morphosyntactic annotations, so the case in each token had to be determined by hand. Turning to the child productions in the Weist-Jarosz corpus, we find that three of the four children produced at least one instance of a target facultative animate noun in the accusative case, inflecting it with the *-a* suffix (see examples in Table 3). The attested target nouns are *cukierek* '(piece of) candy(M)', *banan* 'banana(M)', and *papieros* 'cigarette(M)'; in total, we found 10 utterances containing these nouns. Interestingly, one of the children alternated between the animate (*cukierka* '(piece of) candy(M)') and inanimate (*cukierek*) accusative form of one of the nouns, at the same age (1;9). In all of the child production data, none of the target facultative animate nouns were produced exclusively with inanimate nominal case marking. A limitation of this corpus is that it did not contain agreement marking, largely due to the short length of utterances produced by children of this age.

3.4 Interim discussion

We first note that the number of observations is small, and only one of the corpora includes morphological tagging, which limits our ability to interpret the above data. Additionally, most of these children are very young, and their productions are short

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Name	Age	Noun	Example utterance
Marta	1;9	*cukierka*	da-my cukierk-a Pan-i Emilc-e give-PRES.1PL candy(M)-M.A.ACC.SG Miss(F)-DAT Emilka(F)-DAT 'We'll give (a piece of) candy to Miss Emilka.'
		cukierek	ma cukierek have.PRES.3SG candy(M).I.ACC.SG 'She/he has (a piece of) candy.'
Wawrzon	2;5	*cukierka*	ja nie chc-ę cukierk-a NOM.1SG NEG want-PRES.1SG candy(M)-M.A.GEN.SG 'I don't want (a piece of) candy.'
Bartosz	1;10	*papierosa*	pal papieros-a Tatuś smoke.IMP.PRES.2SG cigarette(M)-M.A.ACC.SG daddy(M).NOM 'Smoke (a) cigarette, Daddy.'

Table 3: Examples of attested child productions of facultative animate nouns in the Weist-Jarosz Polish corpus.

and largely limited to nouns and verbs. We therefore do not observe adjectival agreement and are limited to drawing conclusions from the nominal suffixes. Still, CDS data show that facultative animate nouns do occur in the accusative form in input to children acquiring Polish. Moreover, the data provide preliminary evidence for very early productions of facultative animate nouns in spontaneous speech by Polish children even under two years old, suggesting that children are familiar with at least some facultative animate nouns before the age of 2-3. Not only are they familiar with these nouns, but they appear not to generalize them to take inanimate agreement marking based on their conceptual (in)animacy. However, it is important to highlight some intra-speaker variation, as exhibited by one child's alternation between *cukierka* and *cukierek*. This data suggests that, while Polish 1- and 2-year-olds produce facultative animate nouns with animate case marking, they are not yet fully adult-like in these productions. This resembles early child productions of grammatical gender, which can be observed in child Polish speech by the age of 2;6, but which are not yet adult-like at that age (Janssen 2016).

Facultative animate nouns clearly present a puzzle from the perspective of child language acquisition, as they introduce conflicting cues regarding the role of animacy in the noun categorization system. Data from CDS show that facultative animate nouns are indeed present in the input to young Polish children, and do occur in the animate accusative. In our small sample size of child utterances, target facultative animate nouns appear with masculine animate nominal case marking in nine utterances, but with masculine inanimate case marking only in one, which would suggest that children do not treat facultative animate nouns as masculine inanimate based on their semantic cues but rather treat them as grammatically animate.

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Given the limitations of our small sample size, we hope that future work will carefully investigate facultative animacy in speech of Polish children on a larger scale. To look for evidence of masculine animate agreement marking on adjectives, corpora such as the Szuman corpus (Smoczyńska 1985) can be searched for naturalistic productions of older children, where adjectival agreement is more likely to be present. Additionally, the corpora that are available to us are over 25 years old. Given the productive nature of facultative animacy in Polish, future work can investigate data from more recent corpora and/or conduct experimental production studies to understand how facultative animacy is acquired by Polish children exposed to a highly productive facultative animate class.

4 Facultative animacy in language processing

We turn now to consider the implications of facultative animacy for language processing by adult native speakers of Polish. In the literature on real-time language comprehension, it is well established that agreement marking on a word that occurs before the target noun can serve as a cue that facilitates recognition of the target noun. The logic is as follows: when listeners process an agreement morpheme that occurs, for instance, on a pre-nominal adjective, they activate the feature encoded on that morpheme. If this feature corresponds to a node in the mental lexicon, this node is activated, which in turn spreads activation to all nouns in the lexicon that are connected to that node. When the listener then encounters the noun itself, that noun has been pre-activated, leading to faster retrieval. Grammatical gender categories are known to be represented in the mental lexicon in this way: each gender category maps onto an abstract node, which is connected to all the lemmas for words that are assigned to that gender (Salamoura & Williams 2007, Sá-Leite & Lago 2024). Research using eye-tracking in the Visual World Paradigm (VWP) (Tanenhaus et al. 1995) demonstrates that when an article or adjective inflected for gender precedes the target noun, recognition of the target noun proceeds faster if the target noun is the only noun in the visual display matching that feature (Guillelmon & Grosjean 2001, Wicha et al. 2004; for work on Slavic languages, see Sekerina 2015, Aumeistere et al. 2022, Fuchs 2023, Ivanova-Sullivan et al. 2024, Fuchs & Sekerina 2025).

Recent work using eye-tracking suggests that in Polish, which (sub)categorizes nouns not only for gender but also for animacy, (in)animacy is similarly represented in the mental lexicon and activated during processing of animate accusative agreement marking (Fuchs 2025a,b). Participants heard a sentence containing an adjective inflected with

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animate accusative *-ego* (ex. *Wskaż zielon-ego żółwi-a*. 'Indicate (the) green-M.A.ACC.SG turtle(M)-M.A.ACC.SG.') and fixated more on the masculine animate target when it was the only masculine animate candidate in the display, as expected based on prior work (Szewczyk & Schriefers 2013, Szewczyk & Wodniecka 2020). The novel and crucial observation was that participants fixated on the masculine animate target noun less if the display also contained a competitor that was masculine inanimate (ex. *widelec* 'fork(M)') or feminine animate (ex. *krowa* 'cow(F)'); the presence of feminine inanimate competitors (ex. *linijka* 'ruler(F)') did not affect fixations to the target. This suggests that processing *-ego* activated a masculine gender feature – which pre-activated all masculine nouns independent of animacy – and an independent animacy feature – which pre-activated all animate nouns independent of gender.

However, facultative animate nouns were not included in the experimental study in Fuchs (2025a,b), and the study could therefore only claim that the processing of *-ego* activates semantic animacy. It remains an open question whether the processing of *-ego* also activates a grammatical animacy feature. If we pursue this question by integrating facultative animate nouns into this experimental paradigm, a number of logical possibilities arise. First, if processing *-ego* activates masculine gender and semantic animacy but not grammatical animacy, then as in the previous study we expect partial activation of feminine animate competitors and masculine inanimate competitors, and we expect facultative animate nouns to pattern with other semantically inanimate masculine nouns.

Second, if *-ego* activates masculine gender, semantic animacy, and grammatical animacy, we once again expect partial activation of feminine animate competitors and masculine inanimate competitors. We expect activation of facultative animate competitors to be stronger than that of masculine inanimate competitors, given that facultative animate nouns match two of the features of *-ego* (though see §4.5 for limitations and further discussion of this interpretation). We do not articulate predictions for looks to facultative animate competitors relative to masculine animate competitors, as this requires commitment to the relationship and strength of the grammatical and semantic animacy features relative to each other, which we are unable to make *a priori*.

We consider two additional possibilities; though these would contradict prior findings (Fuchs 2025a,b), we take repeated testing and replication to be an important aspect of psycholinguistic research. One such possibility is that *-ego* activates masculine gender (and possibly grammatical animacy) but not semantic animacy, in which case facultative animate and masculine inanimate competitors should receive partial activation, but crucially feminine animate nouns should not. The final possibility returns to

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the M2 approach to Polish gender, predicting that if *-ego* activates a single M2 category feature (cf. §2.1 and §2.3), facultative animate competitors may be partially activated, but crucially neither masculine inanimate nor feminine animate competitors should be partially activated.

4.1 Approach

We build on the VWP eye-tracking study in Fuchs (2025a,b) to ask whether encountering the masculine animate accusative agreement suffix *-ego* during language comprehension activates a grammatical animacy feature. As in the previous study, participants view three candidate images on the screen and hear a sentence prompting them to click on the target image (ex. *Wskaż zielon-ego żółw-ia*. 'Indicate (the) green-M.A.ACC.SG turtle(M)-M.A.ACC.SG'). The prompt contains a pre-nominal adjective inflected in the accusative case and matching the gender and animacy of the subsequent noun. We fully counter-balance the study with target nouns that are masculine or feminine and animate or inanimate, as well as facultative animate.[5,6] However, we are interested primarily in results for masculine animate and facultative animate target nouns, as the auditory prompts for these target nouns contain an adjective inflected with *-ego*. Broadly, participants are expected to be highly successful and accurate at identifying and clicking on the target image on the screen, but their gaze patterns in the couple hundred milliseconds following when they hear the agreement suffix will reveal which competitors they consider and thus which are partially activated as a result of processing of the agreement features on *-ego*. Partial activation is evidenced by higher proportion of looks to a given competitor relative to the proportion of looks to a baseline feminine inanimate competitor, as the latter does not match any features hypothesized to be realized on *-ego* and should therefore receive no partial activation.

4.2 Materials and methods

4.2.1 Experimental conditions and predictions

Each display contained three images: the target, the competitor, and the distractor. We manipulate the gender and the animacy of all three. We illustrate the experimental conditions for masculine animate (MA) target nouns and facultative animate (MX) target nouns in Table 4. The experiment was fully counterbalanced, i.e., target nouns were

[5] We do not include neuter nouns in order to constrain the number of conditions and stimuli needed for a fully counterbalanced study.

[6] As a reminder, there are no animacy distinctions in the feminine agreement paradigm, but manipulating the animacy of feminine nouns in the experiment allows us to test questions of semantic animacy and to ensure animate nouns in the experiment were not exclusively masculine.

Target		**Competitor**		**Distractor**		**Target**		**Competitor**		**Distractor**	
Gen.	Anim.	Gen.	Anim.	Gen.	Anim.	Gen.	Anim.	Gen.	Anim.	Gen.	Anim.
M	**A**	M	A	F	I	**M**	**X**	M	X	F	I
M	**A**	M	I	F	I	**M**	**X**	M	I	F	I
M	**A**	F	A	F	I	**M**	**X**	F	A	F	I
M	**A**	M	X	F	I	**M**	**X**	M	A	F	I
M	**A**	F	I	F	I	**M**	**X**	F	I	F	I

Table 4: Subset of experimental conditions, with MA target nouns and with MX target nouns. See OSF repository for full list of experimental conditions.

also masculine inanimate (MI), feminine animate (FA), and feminine inanimate (FI); the full list of experimental conditions can be found in the OSF repository for this project.[7]

For a given target noun type, the distractor was held constant to not match either the gender or animacy of the agreement suffix in the prompt, ex. for an MA target noun, the distractor was always FI (ex. *linijka* 'ruler(F)'). There were five experimental conditions, based on the gender and animacy of the competitor. For an MA target, we expect the most looks to a competitor that is also MA, because this kind of competitor receives as much pre-activation as does the MA target item, until the onset of the noun itself in the prompt serves as a point of disambiguation. We expect least looks to the competitor when it is FI, because this competitor should receive no pre-activation from the processing of *-ego*. We expect more looks to the competitor when it is FA or MI than when it is FI, if *-ego* activates independent gender and animacy features, as in Fuchs (2025a,b). We expect more looks to an MX competitor than to an FI competitor at the very least because it matches the gender feature on *-ego*. If *-ego* activates semantic animacy only, then we expect looks to an MX competitor to be equivalent to looks to an MI competitor. If *-ego* also activates grammatical animacy, we expect the proportion of looks to an MX competitor to be higher than looks to an MI competitor. Predictions proceed analogously for MX target nouns.

4.2.2 Materials

Ninety-eight nouns were selected for use in the study: 20 MA, 20 MI, 18 MX, 20 FA, and 20 FI. Given work by Swan (1988) that shows inter-speaker variation in use of nouns as facultative animate, MX nouns were normed prior to designing the experiment, and only nouns consistently showing facultative animate adjectival agreement and nominal inflection were included. The following 18 MX nouns were used: *papieros* 'cigarette', *cukierek* '(piece of) candy', *grzyb* 'mushroom', *muchomor* 'Amanita mushroom', *szampan* 'champagne', *gofr* 'waffle', *pączek* 'donut', *baton* 'candy bar', *naleśnik* 'crepe', *pieróg*

[7]The OSF repository for this project is available at: `https://osf.io/aedkx/overview?view_only=1403aadc290740bf8bbba28cddecfe8b`.

'dumpling', *banan* 'banana', *ananas* 'pineapple', *kokos* 'coconut', *arbuz* 'watermelon', *lizak* 'lollipop', *tulipan* 'tulip', *kalafior* 'cauliflower', *pomidor* 'tomato'. All nouns were concrete and imageable, and corresponding images were colored pink, green, and brown. These images were arranged into visual displays of three images each, according to the experimental conditions in Table 4, with all images in a single display always appearing in the same color.

Visual displays were presented concurrently with auditory prompts of the structure *Wskaż [adjective-*ACC*] [noun.*ACC*]*. Prompts began with the command *wskaż* (750ms), which requires the direct object to appear in the accusative case. The verb was followed by a color adjective (*różow-* 'pink' / *brązow-* 'brown' / *zielon-* 'green') inflected in the accusative singular and matching the gender of the subsequent target noun; this was followed by the noun inflected in the accusative. All prompts were first recorded by a male native speaker of Polish with professional voiceover experience, born and raised in Poland and working in Poland at the time of recording. Single tokens of all key words were extracted, adjusted for duration, and concatenated, to ensure consistency in timing of critical cues across stimuli.

4.2.3 Procedure

The study was conducted using an SR Research EyeLink Portable Duo eyetracker. Participants sat facing a 17-inch laptop screen and received written instructions prior to completing three practice trials. This was followed by a 9-point calibration of the eyetracker. Gaze position was recorded monocularly at 1000Hz, and participants' heads were not stabilized.

Each trial lasted 5 seconds total. First, participants were presented with the visual display with one image covered by an opaque square.[8] After 500ms of looking time, the audio prompt was played. The box covering one of the images disappeared 200ms after the onset of the target noun in the auditory prompt (Figure 1). Participants were instructed to click on the target item as fast as possible, and as soon as they did a green box appeared around the target item. Mouse position was reset to the center of the screen at the beginning of each trial.

There were two experimental lists of 250 trials each, with no filler trials, and participants were pseudo-randomly assigned to one of these two lists; the ordering of trials

[8]This is an implementation of the Covered Box paradigm, a variant of the target-absent Visual World Paradigm (Schwarz et al. 2016, Fuchs 2025a,b). Animate items are known to attract more gaze fixations than inanimate items in VWP displays (Downing et al. 2004, New et al. 2007). In order to ensure that looks after the agreement suffix onset in the present study were driven by linguistic mechanisms, rather than being inflated by non-linguistic biases towards animates, on each trial, a box covered either the target or competitor until after noun onset. For more details on the use of this paradigm in studies investigating animacy in the VWP, see Fuchs (2025a).

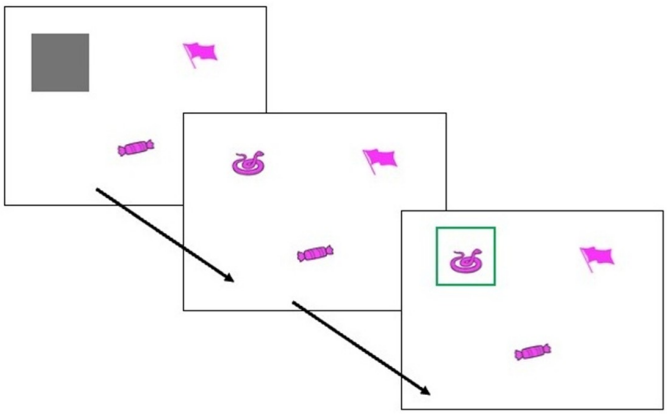

Figure 1: Illustration of the time course of each experimental trial.

within each list was randomized for each participant. Each list was additionally split into three blocks, and participants were given a self-timed break between blocks; calibration was repeated prior to the start of the second and third blocks. Participation in the study took approximately 30 minutes.

4.3 Participants

Forty-seven native speakers of Polish participated in the study. All participants were recruited and tested at a university in a major Polish city. All participants also reported growing up in Poland and using Polish in their daily professional and/or academic lives at the time of testing. The average age of participants was 21.7 (sd = 2.0).

4.4 Data preparation and results

We extracted fixation data using DataViewer (Ltd 2025) and then processed and cleaned it using R package `eyetrackingR` (Forbes et al. 2023) in R version 4.1.2. (R Core Team 2021). Given the predictions in §4.2.1, we analyzed data for trials in which the target was MA (§4.4.1) or MX (§4.4.2) and was initially covered by the opaque square, similar to Fuchs (2025a,b). Looks to competitors were compared across conditions using cluster-based permutation analyses (CPAs) (Maris & Oostenveld 2007), following current best practices for analyzing results from eye-tracking studies in the VWP (Ito & Knoeferle 2022). Analyses were conducted using R package `clusterperm` (Barr 2022). Data were binned into time bins of 50ms, and the interest region was set from the onset of the agreement suffix to 3000ms from the start of the trial. A pre-specified generalized mixed effects model was fitted in each time bin included in analysis, predicting the empirical logit of the proportion of fixations to the competitor by condition, with by-participant and by-item random intercepts.

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For each target type, we first conducted an analysis across all conditions, treatment-coding the condition variable to set the FI competitor as the baseline – we expect least looks to this competitor (cf. §4.2.1). Any increase in looks to a competitor relative to the FI competitor would be indicative of that competitor receiving partial activation from the processing of the features on *-ego*. We then conducted a secondary analysis for each target noun type, subsetting the data to compare looks to MX competitors directly to looks to MA and MI competitors. To correct for two tests run on each data set, we apply a Bonferroni correction to all p-values.

4.4.1 MA target nouns

The proportion of looks to competitors when the target noun was MA is plotted in Figure 2. Visual inspection of the plot suggests that, relative to the baseline FI competitor, proportion of looks to all other types of competitors was higher.

The results of the CPA are consistent with this, showing a significant contrast between looks to the FI competitor and each of the following: MI competitor (2650-2800ms, cluster mass statistic=30.8, p=0.002), FA competitor (2500-2900ms, cluster mass statistic=90.4, p=0.002), MX competitor (2300-2900ms, cluster mass statistic=825, p=0.002), and MA competitor (2300-2900ms, cluster mass statistic=720, p=0.002). The secondary analysis comparing looks to MX competitors with looks to MA competitors and MI competitors found a significant contrast between MX and MI competitors (2300-2900ms, cluster mass statistic=509, p=0.002) but no significant contrast between MX and MA competitors.

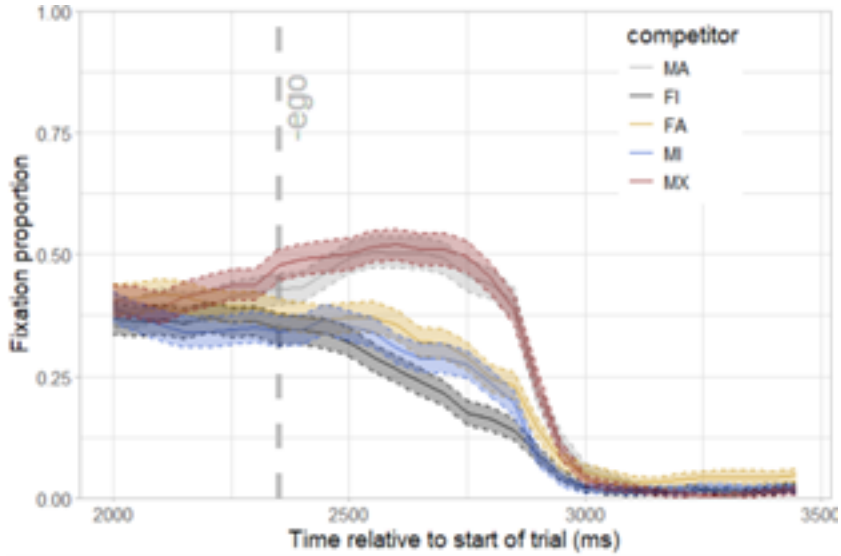

Figure 2: Looks to different types of competitors when the target is masculine animate (MA) and the adjective is inflected with *-ego*.

4.4.2 MX target nouns

The proportion of looks to competitors when the target noun was MX is plotted in Figure 3. Visual inspection of this plot suggests that, relative to the baseline FI competitor, proportion of looks to all other types of competitors was higher.[9]

Results of the CPA are again consistent with this, showing a significant contrast between looks to the FI competitor and each of the following: MI competitor (2300-2450ms, cluster mass statistic=35.2, p=0.002; second cluster at 2650-2850ms, cluster mass statistic=31.1, p=0.002), FA competitor (2550-2850ms, cluster mass statistic=61.7, p=0.002), MX competitor (2350-2900ms, cluster mass statistic=616, p=0.002), and MA competitor (2300-2900ms, cluster mass statistic=893, p=0.002). The secondary analysis comparing looks to MX competitors with looks to MA competitors and MI competitors found a significant contrast between MX and MI competitors (2450-2900ms, cluster mass statistic=299, p=0.002) as well as a significant contrast between MX and MA competitors (2500-2700ms, cluster mass statistic=30.2, p=0.002).

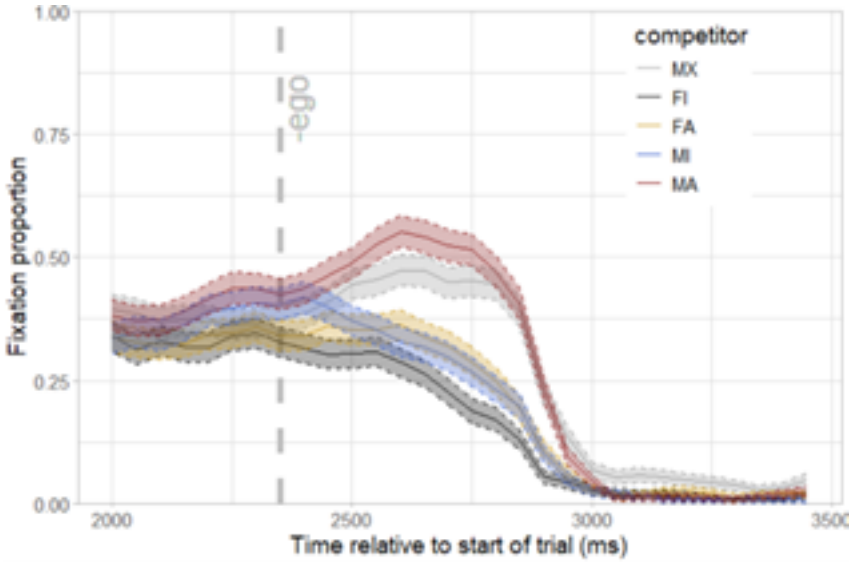

Figure 3: Looks to different types of competitors when the target is facultative animate (MX) and the adjective is inflected with *-ego*.

4.5 Interim discussion

First, converging results from §4.4.1 and §4.4.2 show that participants look to MI and FA competitors more than to FI competitors. Recall that MI competitors match the

[9] A post-hoc analysis suggested by an anonymous reviewer reveals that, at 2900-3330ms, the direction of the effect reverses for the contrast between MX and MA competitors (cluster mass statistic=164, p=0.002). This period of more fixations to the MX competitor over the MA competitor could reflect re-evaluation of the MX competitor after lexical retrieval of an MX target has been completed. However, this effect occurs after our analysis window and the processes it may reflect are outside the scope of this study.

masculine feature on *-ego* but not the animacy feature, and FA competitors match the animacy feature but not the gender feature. We thus replicate prior findings (Fuchs 2025a,b) that suggest that the processing of *-ego* activates a masculine gender feature and a semantic animacy feature.

As far as the MX competitors, results suggest that participants look more to MX competitors as compared to the baseline FI competitors, indicating MX competitors receive at least some partial activation from the processing of *-ego*. Notably, MX competitors also receive a higher proportion of looks than MI competitors do, which constitutes fairly clear evidence that processing *-ego* does not activate only semantic animacy. It is unclear whether there is a distinction between MX and MA competitors. When the target noun is ultimately MA, there are no observable differences between MA and MX competitors, but when the target is ultimately MX, we observe more looks to MA competitors than to MX competitors. Although we did not have clear expectations for this comparison, these results are nevertheless suggestive of stronger activation of MA competitors relative to MX competitors driven by the processing of *-ego*.

These findings constitute tentative evidence that *-ego* activates grammatical animacy in addition to semantic animacy and masculine gender.[10] However, we want to proceed with caution in interpreting these results for two reasons. First, we did not have *a priori* reasons to expect a difference in the results, however small, based on whether the target noun itself is MA or MX – both are preceded by an adjective inflected with *-ego*. Second, as pointed out to us by colleagues, one possible limitation of the present experimental method is that looks to MA and MX competitors following an adjective inflected with *-ego* may be driven at least in part by transitional probabilities between the agreement suffix and the immediately following noun, rather than purely based on access to morphosyntactic features on the agreement suffix. Indeed, the question of whether gaze patterns in similar VWP studies are driven more by surface transitional probabilities (the probabilistic account) or by access to underlying featural information (the syntactic account) has been a topic of some debate (ex. van Heugten & Shi 2009, Lew-Williams & Fernald 2010, Melançon & Shi 2015), though the evidence generally supports the syntactic account. Still, we cannot rule out this possibility entirely.

In future work, we aim to test the question of the existence of a grammatical animacy feature via complementary methodologies that are also often used to probe the representation of categorizing features in the mental lexicon (for overview, see Sá-Leite & Lago 2024). For instance, if we find evidence that facultative animate nouns prime

[10]Note that this is also consistent with *-ego* activating some other feature specific to facultative animate nouns, such as FIGURE (cf. Janda 1996, Riley 1999). Though there are several conceptual and empirical challenges to such an account, as discussed in §2.2, our work alone does not provide a way of adjudicating between the possible ways of formalizing the distinguishing feature of facultative animate nouns.

masculine animate nouns more strongly than typical masculine inanimate nouns do in a masked priming study, this would be independent evidence that the Polish mental lexicon includes nodes for semantic animacy as well as a node for grammatical animacy. This would be similar to what has been proposed for semantic and grammatical gender in the mental lexicon (see discussion in Sá-Leite et al. 2019), though we leave an exploration of the full gender and animacy system in the Polish mental lexicon for future work.

5 Conclusions & implications for other Slavic languages

Our goal in the present paper was to use the case study of Polish to highlight the exciting questions and opportunities in investigating the role of facultative animacy in the noun categorization system of a Slavic language. Prior formal and psycholinguistic work on Polish has provided important insight into the interplay of gender and animacy in noun categorization, with particular focus on agreement marking paradigms, but this work has largely ignored or down-played the presence of facultative animate nouns. Meanwhile, the class of facultative animate nouns in Polish is numerous, and the available evidence suggests it continues to be productive. We suggest that this has major implications from several perspectives. From the formal perspective, theories of gender and animacy in Polish need to be expanded to account for this class of nouns, which we propose is possible with recourse to commonly recognized properties of gender categories. From the perspective of first language acquisition, it is important to determine how conflicting cues from facultative animate nouns impact children's acquisition of animacy distinctions in agreement marking. From the psycholinguistic perspective, questions arise regarding whether processing of the relevant agreement marking activates not only semantic animacy in the mental lexicon but also grammatical animacy. At this stage, we provide only preliminary answers to many of these questions, but we hope to have demonstrated the potential impact that contributions from various perspectives on facultative animacy may have, and we invite future work to pursue these matters.

It is also important to highlight that the case study of Polish is merely an entry point into the study of facultative animacy in Slavic languages, rather than representative of the status of facultative animacy across all Slavic languages. As discussed, while animacy intersects with gender in the noun categorization systems of most Slavic languages, these languages vary in how numerous and how productive their facultative animate classes are. West Slavic languages (Polish, Czech, Slovak, and Sorbian) are gen-

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erally considered to have productive facultative animate subclasses, whereas in other Slavic languages, like Russian, this category is small and not productive (Riley 1999, Kosta 2003). Based on where a given Slavic language falls on this spectrum, we may expect variation with respect to the status of grammatical animacy. Languages with a large and productive facultative animacy class may indeed have grammaticalized or be in the process of grammaticalizing animacy, but languages with small and unproductive facultative animate classes may continue to categorize nouns by semantic animacy only, with facultative animate nouns constituting a small number of exceptions rather than driving the grammaticalization of the animacy feature. We see this typological variation in facultative animacy in Slavic as a domain for fruitful investigation into a distinguishing property of Slavic gender systems, and we invite future work to seize this opportunity.

Abbreviations

1	first person	LOC	locative
3	third person	M	masculine
A	animate	N	neuter
ACC	accusative	NEG	negation
DAT	dative	NOM	nominative
F	feminine	PL	plural
GEN	genitive	PRS	present
I	inanimate	PST	past
INS	instrumental	SG	singular

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