AN EXPERIMENTAL STUDY ON KIND AND GENERIC READINGS ACROSS LANGUAGES: BARE PLURAL VS. DEFINITE PLURAL

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Introduction

To express kind and generic readings, Romance languages like Italian have been reported to use definite plurals but Germanic languages like English make use of bare plurals (Krifka et al., 1995; Chierchia, 1998; Dayal, 2004; Ionin et al., 2011). Greek patterns with Romance (Alexiadou et al., 2007; Lazaridou-Chatzigoga and Alexiadou, 2019). German is discussed as an exception, as both bare and definite plurals are used to express kind and generic readings (Longobardi, 1994; Krifka et al., 1995; Dayal, 2004; Schaden, 2012; Barton et al., 2015).

(1) **Italian**

  a. *(I) cani sono rari. *(kind)*
    the dogs are rare
    English: '(*The) dogs are rare.'

  b. *(I) cani amano giocare. *(generic)*
    the dogs love to.play
    English: '(*The) dogs love to play.'

(2) **Greek**

  a. *(Ta) pulja dodo ehun pleon afanisti. *(kind)*
    the birds dodo have already disappeared
    '(*The) dodo birds have already disappeared.'

  b. *(I) ghates ine aksiolatrefta plasmata. *(generic)*
    the cats are adorable creatures
    '(*The) cats are adorable creatures.'

(3) **German**

  a. (Die) Pandabären sind vom Aussterben bedroht. *(kind)*
    the pandas are from extinction facing
    '(*The) pandas are facing extinction.'

  b. (Die) Bieber bauen Dämme. *(generic)*
    the beavers build dams
    '(*The) beavers build dams.'

Previous work

Chierchia (1998):

▷ Arguments in English (4a) are mapped to kinds with the kind operator $\cap$ (function from worlds to the sum of all instances of the kind in that world). Arguments in Italian/Greek (4b) are mapped to properties; they receive a kind reading via $^\wedge\iota$.

▷ The definite determiner overtly realizes ι (and not $\cap$) and the Blocking Principle enforces overt over covert type-shifting.

▷ Generics (5) are often argued to be built on kinds; they involve a GN operator (Carlson, 1977; Krifka et al., 1995) which introduces quantification over situations.

(4) *Kinds*

  a. **Engl**: $rare(^\cap(dogs))$

  b. **Ita/Gr**: $rare(^\wedge\iota(dogs))$

(5) *Generics*

  a. **Engl**: GN $x, s\ [^{\cup\cap}\mathrm{dog}(x) \wedge C(x,s)]\ [love.play(x,s)]$

  b. **Ita/Gr**: GN $x, s\ [x \leq \iota\mathrm{dogs} \wedge C(x,s)]\ [love.play(x,s)]$

Dayal (2004):

▷ Dayal adopts Chierchia's semantics in (4a) for Germanic AND Romance languages.

▷ Cross-linguistic split derived via canonical ranking: $\iota >^\cap$; Romance lexicalizes both ι and $\cap$, English only ι.

▷ **German**: (i) patterns with Romance; (ii) Blocking principle inactive in kind/generic domain.

A comparative judgment study

Participants. 581 adult participants aged between 18 and 60 recruited online through Prolific/SONA: 152 English-speakers ($M = 29.5$), 155 German-speakers ($M = 24.5$), 122 Italian-speakers ($M = 23.4$), and 152 Greek-speakers ($M = 24.5$).

Materials and Method. In total, participants were presented with 4 sentences, each introduced by a different noun type (definite plural, bare plural, indefinite singular, definite singular), to be judged against 9 contexts (3 presented below). Participants performed FORCED-CHOICE between all possible pairs of alternatives: 6 pairs (includes all possible combinations) per context (6 pairs × 9 contexts = 54 trials per participant).

(6) GENERIC CONTEXT: *There are many pests in the world that make our lives difficult. They eat our supplies, disturb our sleep, or plainly get on our nerves. For example:*

  ▶ Mosquitos/The Mosquitos/The mosquito/A mosquito
    ... give(s) us itchy bites in the summer.

(7) KIND CONTEXT: *The constant growth of the human population on earth has taken and still is taking its toll on other life on the planet, plant or animal. For example:*

  ▶ Pandas/The pandas/The panda/A panda
    ... is/are almost extinct.

(8) GENERIC DISTANCE CONTEXT: *There is a place in town where people meet for a drink and a chat after work. As there are federal elections coming up soon, a lot of the discussions and debates revolve around politics. Yesterday, one guest seemed very upset and continuously complained that "voting is meaningless because ...*

  ▶ politicians/the politicians/the politician/a politician
    ... do/does whatever they want after the election anyway."

▷ THURSTONE SCALING derives a linear rating of all 4 nominal forms from two-way comparisons (Thurstone, 1927; Montag, 2006; Cattelan, 2012).

▷ THURSTONE METHOD includes FORCED-CHOICE in a more complex experimental design (see Marty et al. 2020 for advantages of binary FORCED-CHOICE in linguistics).

▷ From the percentage degree in which a noun type has been preferred in each pair, we derive a z-score for each noun type (Fig. 1,2).

Goals of this study

▷ The empirical facts about English have recently been challenged: Acton (2019) shows that generics can be expressed by definite plurals, though with the effect that the speaker distances themselves from the kind expressed (9).

(9) a. Americans love cars.

  b. The Americans love cars. $\rightsquigarrow$ *speaker distance from the kind Americans*

Motivation of quantative study:

① Verify the cross-linguistic picture (based on Italian, Greek, German, English).

② Investigate optionality between definite and bare plural in German.

③ Investigate speaker distance effect for English and German.

Results and discussion
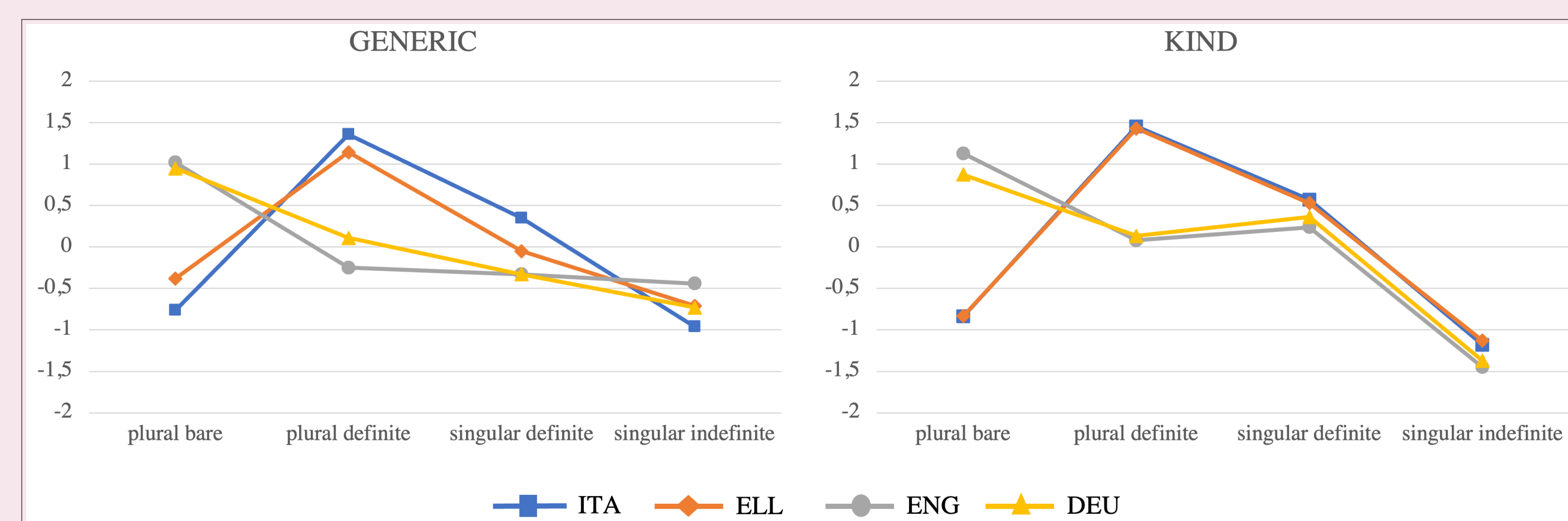
Main findings.

Fig. 1: KIND/GENERIC CONTEXTS (z-scores plotted on y-axis)

▷ We find 2 language clusters for KIND and GENERIC contexts (Fig. 1): For Italian/Greek definite plural best choice; for German/English bare plural best choice

▷ In DISTANCE context (Fig. 2), bare and definite plural equally acceptable in German; English definite plural has lower probability than bare plural, although it clearly is second best option (in contrast to Fig. 1)
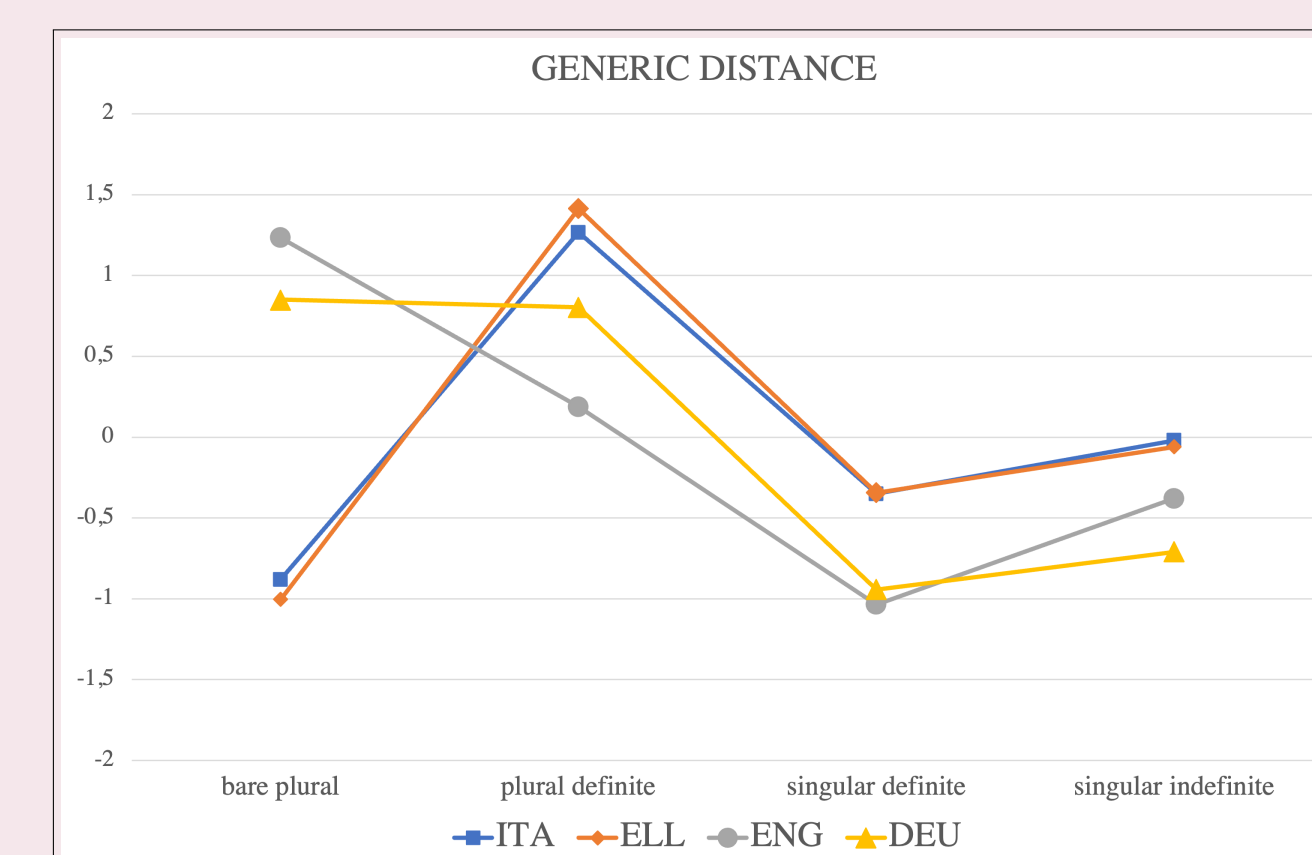

Fig. 2: DISTANCE CONTEXT (z-scores on y-axis)

Discussion.

▷ Our results support the universality of the Blocking Principle (*pace* Dayal 2004): German patterns with English in expressing kinds/generics with bare plurals. In this sense, German is not exceptional (*pace* Longobardi 1994; Krifka et al. 1995; Schaden 2012).

▷ Acton's (2019) prediction confirmed for German: Definite plural and bare plural used to an equal amount in context which singles out reading where speakers presumably distance themselves from the kind expressed.

▷ First use of THURSTONE SCALING in a linguistic domain.