Don't give me that attitude!
Anti-*De Se* and Feature Matching of German D-Pronouns[*]

Alexander Göbel

University of Massachusetts, Amherst

1.   Introduction

In addition to a regular P(ersonal-)Pro(noun) like *she* in English, the German pronominal system offers a few other ways to refer to animate entities in a discourse. The focus of this paper will be what I will refer to as DPros, which are - loosely - derived from PPros via a *d-* prefix and overlap morphologically with the definite article, as shown in (1).[1] DPros have been studied primarily for their referential properties, as illustrated in (1) where the PPro shows a bias towards the subject, while the DPro strongly prefers the object as antecedent.[2] Based on these and similar data, Bosch & Umbach (2007) have argued that DPros are anti-topical, which has recently given way to characterizing DPros as anti-perspectival/logophoric (Hinterwimmer & Bosch 2016, 2018).

(1)   *David$_d$* wollte mit *Linus$_l$* ins   Kino, aber { **er**$_{d/(?)l}$ / **der**$_{\#d/l}$ } wurde krank.
        D.   wanted with L.   in-the cinema but   he.P   he.D   became sick
        David$_d$ wanted to go to the movies with *Linus$_l$* but **he**(PPro$_{d/(?)l}$/DPro$_{\#d/l}$) got sick.

This paper elaborates on the characterization of DPros as anti-logophoric by focusing on their behavior in attitude contexts. As shown in (2), taken from Wiltschko (1998), the DPro is prohibited from co-referring with the attitude holder *Peter*.[3] However, there are two

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[1]The additional forms I won't discuss here are the *dies-* and *jen-* paradigms, which resemble *this* and *that* in English in terms of encoding proximal/distal deixis but are more formal register, in contrast to DPros, which are rather colloquial, see Patel-Grosz & Grosz (2017).

[2]I will omit referents outside the sentence here - which are in principle always possible - and focus exclusively on within-sentence reference.

[3]Wiltschko (1998) takes (2) to show that D-pros resist binding, which has since been shown by Hinterwimmer (2015) to be inaccurate (see also Hinterwimmer & Brocher 2018).

exceptions to this pattern, which will constitute the empirical scope of this paper. First, co-reference depends on the attitude ascription involved, with co-reference being blocked *de se* but possible if the DPro is construed *de re*, contrary to judgments reported in Hinterwimmer & Bosch (2018). Second, co-reference is possible if the attitude holder is instantiated via a DPro or an epithet (Hinterwimmer & Bosch 2018, Patel-Grosz & Grosz 2017). I will refer to these properties as anti-*de se* and feature matching respectively. The contribution of this paper is to provide a formal analysis that derives these properties by appealing to an expressive component of DPros that has not received much attention (but see Bosch & Umbach 2007, Sichel & Wiltschko 2018).

(2)   *Peter$_p$* hat geglaubt, dass { **er$_p$** / *__der__$_p$* } dumm ist.
       P.   has believed that   he.P   he.D   stupid is
       Peter$_p$ has believed that **he**(PPro$_p$/*DPro$_p$) is stupid.

2.   Core Data

This section presents the two exceptions to the generalization that co-reference with an attitude holder is blocked for DPros. The first exception concerns attitude ascriptions, that is, the relation an attitude holder bears toward herself. The attitude ascriptions we will be concerned with here are those where (i) an attitude holder refers to herself in a self-conscious way (*de se*, see Pearson 2015 for a more formal definition) or (ii) refers to herself by accident without being aware that she is doing so (*de re*). The scenarios in (3a)-(3b) serve to illustrate each of the cases.

(3)   a.   *De Se Context*
             Donald reads an old tweet of his, which he is impressed by, and says: "I will become president!"

       b.   *De Re Context*
             Donald reads a screenshot of a tweet with the author cut off, which he is impressed by, but does not realize it is his own. He says: "Whoever wrote this will become president!"

While the *de se*/*de re* distinction has been taken to not affect the availability of co-reference for PPros, other pronominal expressions have been reported to show specific restrictions. For instance, PRO in (4) can only be used felicitously in the *de se* context in (3a) but not in the *de re* context in (3b) (Chierchia 1989).

(4)   Donald$_d$ expects [PRO$_d$ to become president].

On the flipside, DPros don't allow co-reference in *de se* contexts, but do when construed *de re*, shown in (5), that is, they are anti-*de se*. [4] DPros thus constitute the mirror image to PRO in (4). Other expressions that have been reported to be anti-*de se* are epithets (Patel-Grosz 2012), which have also been characterized as anti-logophoric by Dubinsky & Hamilton (1998), illustrated in (6). I will come back to this parallelism between DPros and epithets in the next section.

(5) $Donald_d$ glaubt,   dass **der**$_d$ gewinnen wird.   *(# in (3a), ✓ in (3b))*
      D.   believes that he.D win   will
      $Donald_d$ thinks **he**(DPro$_d$) is going to win.

(6) $Nero_n$ thinks that #[**the damn traitor**]$_n$ will be invited to the reception.

The second exception to be discussed here concerns cases where the attitude holder herself is instantiated with a DPro and thus matches in features, which has already been noted by Hinterwimmer & Bosch (2018), see (7a), and corroborated by a separate corpus study, whose results I will omit here for space reasons. As (7b) shows, this pattern also extends to epithets, providing further evidence for the similarity between DPros and epithets.

(7) a. Der_x glaubt, **der**$_x$ kann das alles   – dem$_x$ zeige ich's jetzt.
          he.D believes he.D can   that everything   he.D show I-it   now
          'He(DPro$_x$) believes that **he**(DPro$_x$) can do all of that – I'll show him(DPro$_x$).'

     b. $Otto_o$ ist wirklich unglaublich blöd. [*Dieser Idiot*]$_o$ glaubt,   **der**$_o$ kann
          O.   is really   incredibly stupid this   idiot   believes he.D can
          mich öffentlich beleidigen und sich dann Geld   von   mir ausleihen.
          me   publicly insult   and self then money from me borrow
          '$Otto_o$ is really incredibly stupid. [*That idiot*]$_o$ believes that **he**(DPro$_o$) can
          insult me in public and then borrow money from me.'

3.   Analogy with Epithets

So far, we have seen DPros resemble epithets with respect to their anti-*de se* property and both of them licensing co-reference of a DPro if used to instantiate the attitude holder. Another aspect of similarity that will be crucial to the upcoming analysis is that DPros often convey a negative attitude towards their referent. For example, while using the PPro in (8) would qualify as a neutral report, the DPro conveys a sense of ridicule. Following Sichel & Wiltschko (2018), I will refer to this contribution as *n-effect*.[5]

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[4]This data is based on the judgments from 6 native speakers, but differs from judgments reported by Hinterwimmer & Bosch (2018), who take co-reference in a case like (5) to be blocked for both *de se* and *de re*. I will come back to this divergence in section 5.

[5]Sichel & Wiltschko argue that this n-effect only arises when the DPro isn't used to discriminate between referents, as is the case in (8), but not (1). However, the n-effect itself seems to be subject to speaker-variation as well, independently of the conditions proposed by the authors. For current purposes, I will put the question under what condition the n-effect arises aside and assume it to be available in the data presented here.

(8)   [*Context*: Trump$_t$ gave another speech at a rally.]
        { Er$_t$ /Der$_t$ }   wollte eine Spaceforce einführen.
         he$_P$ he$_D$ wanted a   space-force introduce
        'He(PPro/DPro) wanted to establish a space force.'

If present, the n-effect closely resembles the contribution of epithets like *that bastard*. I will follow Potts (2005) in treating the semantic contribution of epithets as expressive content. Expressive content falls into the category of not at-issue content, as indicated by its projection behavior: the negative attitude conveyed by the epithet in (9) is not part of Sue's belief worlds but attributed to the speaker, as evidenced by the infelicity of (9b).

(9)   Sue believes that **that bastard** Kresge should be fired.

        a.   She has a high opinion of him otherwise though.

        b.   #I have a high opinion of him though.

More specifically, Potts (2007) argues that one characteristic feature of expressive content is its *nondisplaceability*. That is, expressive content always has to be attributed of the utterance situation itself and cannot be used to report on other times or possibilities. This property is further illustrated in (10), where the contribution of *damn* does not partake in the quantificational claim but is restricted to the utterance situation.

(10)   Whenever I pour wine, the **damn** bottle drips.

        a. $\neq$ For every wine-pouring situation, there is a bottle-dripping situation & the speaker has a negative attitude in <u>each</u> bottle-dripping situation

        b. $\approx$ For every wine-pouring situation, there is a bottle-dripping situation & the speaker has a negative attitude toward <u>the current</u> bottle-dripping situation

Regarding the syntax of epithets, I will adopt a variant of Patel-Grosz (2012, 2014), who argues for a treatment of epithets as null pronouns modified by a nominal appositive, as in (11). A full lexical entry is shown in (12), which encodes the negative attitude of the speaker[6] as a definedness condition to account for its projection behavior. The evaluation to the actual world is fixed via a constant '@'.[7]

(11)   [*pro* [the idiot]]
         equivalent to [he, [the idiot]]

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[6]This strict anchoring to the speaker's perspective is a simplification, as it has been noted by Potts (2007) and empirically shown by Harris & Potts (2009), Harris (2012) that epithets can receive an interpretation where the evaluation is shifted towards another entity's perspective.

[7]Potts (2005) himself discusses the idea to derive the properties of expressive content in a similar way, which he refers to as scope-shifting, but dismisses it quickly. However, his dismissal is mostly focused on expressive adjectives like *damn*, which may require a different treatment than epithets.

(12) $[[\text{the idiot}]]^{w,g} \approx [[\ [pro_i \ [[\text{the idiot}] \ @]] \ ]]^{w,g} =$
        SPEAKER has a negative attitude toward g(i) in @ . g(i)

This treatment differs from Potts' original approach that handled not at-issue content on a separate semantic dimension. The main reason for diverging from the multidimensional semantics is that epithets have been shown to allow binding, as illustrated with the example from Patel-Grosz (2012) in (13).[8] To capture this possibility, there would have to be at least some interaction between the expressive and the at-issue dimension (see also Anderbois et al. 2015 for an argument against multi-dimensionality with respect to appositives).

(13)   [Every artist]$_a$ brought a woman who loves [**the idiot**]$_a$.

With these assumption about epithets in place, we can return to DPros. Critically, DPros share their non-displaceability with epithets, as shown in (14).

(14)   Immer wenn *Trump$_t$* eine Pressekonferenz gibt, schmust **der$_t$** mit der Flagge.
        always when T.   a   press-conference gives cuddles he.D with the flag
        'Whenever *Trump$_t$* holds a press conference, **he**(DPro$_t$) cuddles with the flag.'

    a. $\neq$ For every press-conference situation involving Trump, there is a flag-cuddling situation & the speaker has a negative attitude toward Trump in each flag-cuddling situation

    b. $\approx$ For every press-conference situation involving Trump, there is a flag-cuddling situation & the speaker has a negative attitude toward Trump in the current flag-cuddling situation

Given these similarities, I will give DPros conveying an n-effect an analogous analysis to epithets, shown in (15). The n-effect is thus located in the *d-* prefix, while the PPro corresponds to a regular pronoun that fixes the reference.

(15) $[[\text{DPRO}]]^{w,g} \approx [[\ [\text{d-} \ @] \ \text{PPRO}_i \ ]]^{w,g} =$
        SPEAKER has a negative attitude toward g(i) in @ . g(i)

4.   Analysis

This section provides the formal analysis of the two exceptions to blocked co-reference of DPros with an attitude holder.

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[8]Potts (2005: 173) already notes the existence of such cases and the problems they may pose for his account. However, he argues against a direct binding account crossing the dimensions by virtue of the intuition that switching the quantifier to *no* or *few* does not change the expressive content. Instead, he proposes that an epithet "bound" by a quantifier should be thought of as conveying a generic meaning (wrt. (13), artists are generally idiots). However, since it is not fully spelled out how this reading is supposed to be generated, I will instead pursue a different solution.

4.1   Deriving Anti-*De Se*

For the analysis, I will adopt the semantic account of attitude ascriptions by Percus & Sauerland (2003a,b). On this view, attitude verbs quantify over world-individual pairs and are functions from concept generators to properties. It is via these concept generators, which relate the '*res*' in the actual world to the concepts that the attitude holder identifies them as in her belief worlds, that the *de re* reading is derived, while the *de se* reading comes about via a bound reading of the belief-counterparts that the attitude holder identifies as. Furthermore, I will assume a Lewisian counterpart theory which prohibits transworld identity. The respective lexical entry for *think* is shown in (16).

(16) $[\![$ think $]\!]^w =$
$[\lambda\Phi: \lambda x$: There is an acquaintance based concept generator G for x in w such that: $\forall <w',y> \in$ Dox-Alt(x,w) . $\Phi(G)(w')(y) = T]$

With these assumptions in place, let's turn to deriving for the anti-*de se* property of DPros (and epithets). The solution I propose here is that DPros cannot be read *de se* because their expressive component has to hold in the actual world, while the argument - the attitude holder's counterpart - only exists in the belief worlds. Thus, there is a *metaphysical clash* between the expressive component of DPros and the semantics of *de se*. The respective LF and truth conditions for a sentence like (17a) are shown in (17b)-(17c) respectively.

(17)   a.   *Donald$_d$* glaubt,   dass **der$_d$** gewinnen wird.
             D.   believes that he.D win   will
             Donald$_d$ thinks **he**(DPro$_d$) is going to win.

        b.   *simplified de se-LF*:
             [thinks [λG$_3$ [λw$_2$ [4 [[@ d-] er$_4$] [will win]]]]]]

        c.   *de se truth conditions for complement clause*:
             $\forall <w',y> \in$ Dox-Alt(x,w) :
             NEG-ATT(*spkr*, *y*) in @ . y will win in w'

In contrast, since the DPro is interpreted via concept generator rather than being bound in the *de re* reading, the negative attitude can be predicated of an argument that exists in actual world, thus avoiding a clash. See (18) for the respective LF and truth conditions.

(18)   a.   *simplified de re-LF*:
             [thinks [λG$_3$ [λw$_2$ [[[@ d-] er$_4$] G$_3$] [will win]]]]]

        b.   *de re truth conditions for complement clause*:
             $\forall <w',y> \in$ Dox-Alt(x,w) :
             NEG-ATT(*spkr, Donald*) in @ . G(Donald) will win in w'

4.2   Deriving Feature Matching

The solution I want to pursue to capture the feature matching cases is one couched in a system of feature-transmission à la Kratzer (2009). The core idea behind adopting this approach is that what superficially appears as a DPro in the embedded clause in the feature matching cases does correspond to a minimal pronoun that receives its (uninterpreted) features from the attitude holder.[9] The critical case that needs to be accounted for here is feature matching under a *de se*-construal, since co-reference would be blocked there otherwise due to the metaphysical clash laid out in the previous section.

A sample case we might want to derive is given in (19). First, let's assume the presence of a [D]-feature at the higher DPro[10], which needs to be passed down to the lower DPro represented as a minimal pronoun, as shown in the *de se*-LF from above in (20a) representing the baseline. As a first step, the DPro agrees with the attitude verb such that the verb receives the [D]-feature (20b).[11] Next, the verb transmits its feature onto the pronominal binder through the concept generator and world binder via multiple instances of Predication (20c). Once the features are on the pronominal binder, the minimal pronoun can receive them by virtue of being bound (20d) and gets spelled out as in (19).

(19) $DPro_i$ thinks $DPro_i$ is smart.

(20)   a.   *Baseline*
        [$DPro_{[D]}$ [thinks [λG_3 [λw_2 [4 [$\emptyset_4$ [is smart]]]]]]]

        b.   *Agree*
        [$DPro_{[D]}$ [$thinks_{[D]}$ [λG_3 [λw_2 [4 [$\emptyset_4$ [is smart]]]]]]]

        c.   *(Multiple) Predication*
        [$DPro_{[D]}$ [$thinks_{[D]}$ [$\lambda G_{3[D]}$ [$\lambda w_{2[D]}$ [$4_{[D]}$ [$\emptyset_4$ [is smart]]]]]]]

        d.   *Feature Transmission under Binding*
        [$DPro_{[D]}$ [$thinks_{[D]}$ [$\lambda G_{3[D]}$ [$\lambda w_{2[D]}$ [$4_{[D]}$ [$\emptyset_{4[D]}$ [is smart]]]]]]]

Notably, this account of feature transmission is contingent on the mechanisms involved in generating a *de se*-reading, namely the pronoun in the embedded clause being bound to the counterpart of the attitude holder. Moreover, since the features are transmitted to the minimal pronoun rather than the pronoun being born with them, it avoids the metaphysical issues that were argued to be responsible for the blocked *de se*-reading. In contrast, even

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[9]The formal definitions of the necessary ingredients are omitted here for space reasons below, but see the original paper as well as modifications from a class handout on embedded tenses from a seminar on Semantic Variation in Tense and Aspect, taught by Seth Cable at UMass in the Fall of 2015, which can be accessed under https://people.umass.edu/scable/LING720-FA15/Handouts/4.Embedded-Tense.pdf.

[10]This feature is meant to be theoretically neutral for the purposes of exposition. See section 5 for some discussion on the possible nature of this feature.

[11]For presentation purposes, I will focus on the [D]-feature here. Left implicit are features for person, number and gender. A potential concern here would be that the [D]-features on the DPro are not visible at the verb and have to be assumed to be implicitly present.

though the *de re*-mechanism lacks this binding and thus the ability for feature transmission, it does not face the issues of the *de se*-readings to begin with. Consequently, we would expect both *de se* and *de re* readings to be available in feature matching configurations, while maintaining the asymmetry between the two when the attitude holder does not carry any [D]-features.

5.   Conclusion

This paper investigated the behavior of German DPros with respect to co-reference in attitude clauses. Two exceptions to the generalization that DPros cannot co-refer with an attitude holder, namely *de re* contexts and cases of feature matching, were discussed and derived formally. The restriction against *de se* was derived by appealing to a metaphysical clash between the expressive component of DPros, which require evaluation in the actual world, and the semantics of *de se*, which quantifies over counterparts in the attitude holder's belief worlds. Feature matching was analyzed using the feature transmission system of Kratzer (2009), with the embedded DPro starting off as a minimal pronoun and receiving its features from the higher DPro or epithet, thus avoiding the metaphysical clash. This analysis also covers the behavior of epithets and thus extends findings from Patel-Grosz (2012, 2014). Before concluding, there are two issues that are worth elaborating on.

The first issue concerns the diverging judgments reported here and in Hinterwimmer & Bosch (2018), according to which co-reference with an attitude holder is blocked under both *de se* and *de re*. In contrast to Hinterwimmer & Bosch, the account presented here critically relies on the n-effect conveyed by DPros to derive the pattern.[12] However, as mentioned in section 3, there is quite some variation across speakers with respect to how strongly they take DPros to convey this effect and the conditions under which it occurs are far from clear. The speakers that the data reported here is based on crucially associate DPros with the n-effect quite strongly. Hinterwimmer & Bosch's judgments might thus differ due to the absence of the n-effect. While this requires further empirical research, data from experiments conducted by the author of this paper in collaboration with Petra Schumacher suggest that the extent to which individual speakers perceive DPros to convey an n-effect might indeed affect the availability of co-reference readings.[13]

Even if the divergence in judgments turned out to be due to the strength of the n-effect, the pressing question would be why this should be the case. One possible way of approaching this issue would be to take the characterization of DPros as anti-logophoric, that is, disallowing co-reference with the perspective center, seriously. It might be that the n-effect renders the speaker's perspective more prominent such that the attitude holder no longer constitutes the perspective center. In the absence of the n-effect, the attitude holder would remain the perspective center and thus be blocked independently of the attitude

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[12] Also note that H&B look at embedded clauses with V2, which might interact with perspective (see Truckenbrodt, this volume).

[13] An alternative explanation suggested by Patrick Grosz (p.c.) and motivated by findings in Patel-Grosz (to appear) would be that the diverging judgments are due to a systematic difference between the pronominal systems in dialects of Northern and Southern German, with the latter offering an additional clitic form. However, the strength of the n-effect has been proven a better predictor than regional dialect so far.

ascription involved. However, while this approach may sound plausible, it would require adjustments to the analysis proposed here, which was centered around the semantics of *de se* vs *de re* rather than formally encoding the perspective center. Alternative paths might be theories that realize perspective overtly in the syntax, such as Charnavel (to appear) and Sundaresan (2012, 2018). I will leave an exploration of these alternatives for future research.

The second issue I want to discuss concerns the nature of the features used to account for feature matching and possible extensions to other expressions reported as anti-logophoric. While the analysis in section 4.2 treated the relevant feature on DPros maximally neutral as a [D]-feature, the data pattern already requires assuming this feature to be also present in epithets. We might thus think of this feature as specifying expressive content. An alternative would be to relate this research to actual logophors and treat DPros and epithets as carrying a negative version of von Stechow (2003)'s [LOG]-feature, specifying a prohibition against co-reference with the perspective (or logophoric) center.

Potential insight to this issue might come from comparisons with other supposedly anti-logophoric expressions. For instance, Yashima (2015) argues for third-person pronouns in Japanese being anti-logophoric. Critically, the Japanese pronoun system encodes honorificity, which has been analyzed as expressive content by Potts (2005), suggesting a possible extension of the account proposed here to these cases. In contrast, another expression that has been claimed to be anti-logophoric is the clitic *ce* in French, which does not have an obvious expressive component. Future research will have to show to what extent anti-logophoricity is a heterogeneous phenomenon or receive a unified treatment.

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Alexander Göbel
agoebel@umass.edu