

UNIVERSIDADE DE SÃO PAULO  
FACULDADE DE FILOSOFIA, LETRAS E CIÊNCIAS HUMANAS  
DEPARTAMENTO DE LETRAS CLÁSSICAS E VERNÁCULAS

Caio Borges Aguida Geraldes

Case Attraction on Infinitive Clauses of Ancient Greek:  
A case study on Herodotus, Plato and Xenophon

*Atração de caso em orações infinitivas do grego antigo:  
Estudo de caso em Heródoto, Platão e Xenofonte*

Versão Corrigida

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Dissertation presented to the Graduate Program in Classics at the Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo, in partial fulfillment of the requirements for the degree of Master of Arts.

Concentration Area: Classics

Supervisor: José Marcos Mariani de Macedo (USP)

SÃO PAULO

2020

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Faculdade de Filosofia, Letras e Ciências Humanas da Universidade de São Paulo

G354c      Geraldles, Caio Borges Aguida  
            Case Attraction in Infinitive Clauses of Ancient  
            Greek: A case study on Herodotus, Plato and Xenophon  
            / Caio Borges Aguida Geraldles; orientador José Marcos  
            Mariani de Macedo - São Paulo, 2020.  
            139 f.

            Dissertação (Mestrado)- Faculdade de Filosofia,  
            Letras e Ciências Humanas da Universidade de São  
            Paulo. Departamento de Letras Clássicas e Vernáculas.  
            Área de concentração: Letras Clássicas.

            1. Grego Antigo. 2. Sintaxe. 3. Platão. 4.  
            Heródoto. 5. Xenofonte. I. Macedo, José Marcos  
            Mariani de, orient. II. Título.

**ENTREGA DO EXEMPLAR CORRIGIDO DA DISSERTAÇÃO/TESE****Termo de Ciência e Concordância do (a) orientador (a)**

Nome do (a) aluno (a): Caio Borges Aguida Geraldês

Data da defesa: 04/12/2020

Nome do Prof. (a) orientador (a): José Marcos Mariani de Macedo

Nos termos da legislação vigente, declaro **ESTAR CIENTE** do conteúdo deste **EXEMPLAR CORRIGIDO** elaborado em atenção às sugestões dos membros da comissão Julgadora na sessão de defesa do trabalho, manifestando-me **plenamente favorável** ao seu encaminhamento e publicação no **Portal Digital de Teses da USP**.

São Paulo, 15/02/2021



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(Assinatura do (a) orientador (a))



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Trabalho aprovado. São Paulo 4 de dezembro de 2020.

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SÃO PAULO

2020



À vó Irene, *in memoriam*



# Acknowledgements

Aos meus pais, Ricardo e Regina, e à minha irmã, Bárbara; pelo apoio e acolhimento incondicionais, qualquer trabalho seria impossível sem vocês.

A F. Paixão pelos dias e pelo dia a dia e ao Benedito por vir com ela. Não há como separar os dois, que direta e indiretamente sempre me leram, ouviram e me levaram para caminhar e correr, a despeito das minhas reclamações.

Ao meu orientador Zé Marcos, ꣳꣳꣳ, pelo incentivo à pesquisa e pelo ensino do muito que sei, especialmente por ensinar a pesquisar e estudar. Aos colegas do GELIEA pela oportunidade de aprender o que não tinha quem ensinasse e ensinar o que se estava aprendendo. Um agradecimento especial ao *aharvíd* Alex e à Patrícia por ensinarem o caminho das pedras. Aos professores Douglas, Paula, Daniel, João Carlos, Aprigliano, Luciana, Marcos e Hasegawa, e agradecimentos especiais à professora Esmeralda que sem saber me fez perceber que o objeto desse trabalho daria pano pra manga.

Aos notáveis frequentadores da tia Bia — a extensão acadêmica propriamente dita — Márcio, Frate e Tarsila. A *Herr* Thiago, pela centena de horas de grupos de leitura. Aos demais colegas de porta de biblioteca por me ouvirem falar mais do que devia sobre línguas mortas, Samuel, Livia, Isabella, Cláudia e Fernanda. À cena virtual acadêmica que me incentiva a falar mais do que deveria sobre línguas mortas e me ensina em mesma medida, especialmente Aline, Marina e Everton pela ajuda com as traduções do francês e alemão e à Clara por “emprestar a intuição de grego.” A Taís, que preenche todas as categorias citadas acima. Aos amigos queridos Rebeca, Andrea, Lucca, Igor, Stéphanie e Pita pela amizade. Aos remadores pelas manhãs, especialmente Farah, Moa, Yves, Taeko, Andrea, Celso e a André pelas *sapatadas*. Aos *Latin American Classicists* de Oxford, Adir, Fabiana e José, pela recepção, almoços e cafés.

I am deeply grateful for Philomen Probert for the constant attention and hospitality during my time in Oxford; I did learn quite a bit after every discussion we had. The most neo-latin thanks possible for Martina, for all the things and all the stuff they thought me and for being so kind. Also many thanks to Jesper, ꣳꣳꣳ, Nana, and Ryan for the talks and eventual ramblings.

A todos os desenvolvedores de aplicações gratuitas utilizadas na pesquisa, análise e redação desse texto. A todos os funcionários das instituições de pesquisa em que estive, especialmente a Vera e Alexandra. Last but not least, I am thankful to FAPESP for granting me the financial support necessary for the completion of this master's research, by means of the grant nº 2017/23334-2, São Paulo Research Foundation (FAPESP); and the international grant nº 2019/18473-9, São Paulo Research Foundation (FAPESP). This study was also partly financed by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES) – Finance Code 001.



# Abstract

In this dissertation we discuss the syntax of case attraction in the infinitive clauses of Ancient Greek, in which a constituent of the infinitive clause acting as the predicative of its subject has the case assigned from a matrix clause's argument, thus violating the prediction of locality. The main goal is to provide a strong account on the distribution of the phenomenon since the works on the topic from the 16th century to the current date did not deal with this issue and assumed that the distribution was either random or related to arbitrary variables. At the first chapter, we present how the phenomenon appears and how it has been discussed in scholarly bibliography, including both the older philological accounts and the modern minimalist discussions concerning it. The second chapter presents the reader to the selection of texts used as a corpus (Herodotus, Plato and Xenophon) and the criteria employed to analyse the data thereby gathered. We show at the third chapter the quantitative analysis of the distribution of case attraction in relation to variables previously considered to be correlated to it and to the variables linguistically expected to be so. Lastly at fourth chapter we further discuss the implications of our distributional findings to our comprehension of the phenomenon in Ancient Greek, particularly on pragmatic and semantic grounds, as well as its relation to similar phenomena cross-linguistically. We argue that although optional, the case attraction is favoured by environments where the target of attraction holds preeminent pragmatic or semantic functions, a tendency known to interact with similar phenomena in other languages displaying double outcomes of agreement.

**Keywords:** Ancient Greek; Agreement; Attraction; Pragmatics



# Resumo

Nessa dissertação, discutimos a sintaxe da atração de caso em orações infinitivas do grego antigo, na qual um constituinte da oração infinitiva que serve de predicativo do sujeito da mesma recebe o mesmo caso de um argumento da oração matriz, violando assim a previsão de localidade. O nosso intuito principal é oferecer um arrazoado completo da distribuição do fenômeno, posto que os trabalhos feitos nesse tópico desde o século XVI até a atualidade não lidaram com essa questão e assumiram que a distribuição era ou aleatória ou relacionada a variáveis arbitrárias. No primeiro capítulo, apresentamos como o fenômeno se dá e como ele foi discutido na bibliografia, incluindo tanto os comentários filológicos mais antigos quanto a discussão do minimalismo atual sobre ele. O segundo capítulo apresenta ao leitor a seleção de textos usada como corpus (Heródoto, Platão e Xenofonte) e os critérios empregados na análise dos dados daí obtidos. Mostramos no terceiro capítulo a análise quantitativa da distribuição da atração de caso em relação às variáveis previamente correlacionadas a ela e às variáveis que se espera por razões linguística o serem. Por fim, no quarto capítulo nós discutimos as implicações das nossas descobertas quantitativas para nossa compreensão do fenômeno em grego antigo, tendo em vista particularmente a pragmática e semântica; bem como sua relação a fenômenos similares através das línguas. Argumentamos que embora seja opcional, a atração de caso é favorecida em ambientes nos quais o alvo da atração possui funções pragmáticas ou semânticas proeminentes, tendência que se reconhece interagir com fenômenos semelhantes em outras línguas que apresentam duplo resultado para concordância.

**Palavras chave:** Grego Antigo; Concordance; Atração; Pragmática



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# List of abbreviations and acronyms

AcI, DcI, GcI	<i>accusativus/dativus/genetivus cum infinitivo</i>
AG	Ancient Greek
AGR	Agree syntactic feature
C(P)	Complementizer (projection)
INFL(P)	Inflection (projection)
ECM	Exceptional Case Marking
LDA	Long Distance Agreement
N/C Topic	New or Contrastive Topic
T	Tense syntactic feature



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# 1 Introduction

The concept of *case attraction* is often employed to denote the phenomenon observed in relative clauses like (1), also called in the Ancient Greek grammatical scholarship *attractio relativi*, or relative attraction.<sup>1</sup> In (1-a), the nominative case of the relative pronoun is expected, since it is the subject of the embedded clause, while in (1-b) the genitive case is unexpected, resulting from the *attraction* to the case of an absent genitive object for the main verb (μετέδωκεν).

- (1) a. ... στυγών-∅ ἧ μ' ἔτικτ-εν  
 ... hating-NOM.SG.M REL(NOM.SG.F) PRO(1SG.ACC) gave-birth-3SG  
 ... hating she who gave me birth. (Eur.Alc.338)
- b. ἡ πόλι-ς ᾧν ἔλαβ-εν ἅπα-σιν μετέδωκ-εν  
 DET(NOM.SG.F) city-NOM.SG.F REL(GEN.PL.N) obtained-3.SG all-DAT.M.PL. shared-3.SG  
 The city shared with every one what it had obtained. (Isoc.4.29.3)

There is a reasonable amount of analyses made on this phenomenon in Ancient Greek (henceforth AG) and similar ones from Latin, Gothic, German, Iranian languages and Georgian.<sup>2</sup> The common opinion on the subject is that there must exist a PRO element before the attracted relative that prompts the attraction as in (2), taken from Kakarikos (2014, p. 290).

- (2) ἡ πόλις pro<sub>i</sub> ᾧν<sub>i</sub> (for ᾗ-ACC) ἔλαβεν ἅπασιν μετέδωκεν  
 city.NOM.F.SG PRO.GEN.N.PL REL.GEN.N.PL obtained.3.SG all.DAT.M.PL. shared.3.SG  
 The city shared with every one what it had obtained. (Isoc.4.29.3)

At the first glance, the examples in (3) display a slightly similar phenomenon, and thus have been also called *attraction*. In both sentences, the oblique object (squiggly line) of the matrix sentence is followed by a participle (underlined) that might or not agree with its antecedent. In (3-a), as in (1-a), there is not *attraction* because the predicate gets its case from the embedded clause, i.e., from the infinitive verb. As for (3-b), it is an instance of attraction, since there is case agreement between μοι and ἐλθόντι.

<sup>1</sup> There is also a kind of attraction known as *attractio inversa*, see §1035 Goodwin (1900) and further §555.4ff. Kühner and Gerth (1898) for descriptive accounts.

<sup>2</sup> The first mentions date way back to Sánchez de las Brozas's *Minerva* (1587) and to the *Grammaire du Port-Royal* (1660) accordingly to Wackernagel (1924); see also Langslow (2009, p.37 n7 and pp.72ff). Old and modern accounts include Jacob Grimm (1858), Förster (1868), Bach (1888), Lindskog (1896), Förster (1902), Wackernagel (1924, I p.51ff.), Tuite (1984), Harbert (1990), Pittner (1995), Scott Grimm (2007), Kakarikos (2014), Meyer (2015), and Probert (2015, pp.162–98, 2016).

- (3) a. συμβουλεύει τῷ Ξενοφῶντι ἐλθόντα εἰς Δελφοὺς ἀνακοινῶσαι τῷ θεῷ  
 advice.3SG X.DAT.SG going.ACC.SG to-Delphi ask.INF the-god.DAT.SG  
 περὶ τῆς πορείας.  
 about-the-travel  
 He advises Xenophon to go to Delphi and ask the god about the travel. (Xen. Anab. 3 1 5)
- b. ἀφῆκε μοι ἐλθόντι πρὸς ὑμᾶς λέγειν τᾶληθῆ.  
 allowed.3SG I.DAT.SG going.DAT.SG in-front-of-you say.INF the-truth.ACC.  
 He allowed me to go and speak the truth in front of you. (Xen. Hell. 6 1 13)

Besides the linguistic differences between the two kinds of attraction, there is a clear discrepancy in the number of works dealing specifically with each of them, while one might find many works exclusively devoted in explaining the former type, there are just a few works on the later, as we will make clear in section 1.2.

## 1.1 The environment of attraction

The case attraction in infinitive clauses takes place when the following conditions are true. First, there must be a matrix verb  $V_m$ , which governs an oblique object  $X_{obl}$  and an infinitive verb  $V_{inf}$ . Another nominal element  $Y$ , namely a noun or adjective / participle, is also necessary, since the attraction must take place in a category that expresses case. This model only represents the elements participating on the phenomenon and the most basic relations between them. The word order in AG is relatively free and the model (4) do not presuppose any particular ordering.

$$(4) \quad [ V_m - X_{obl} - Y - V_{inf} ]$$

The elements in (4) must be related in such a way that: 1.  $V_m$  governs the oblique case of  $X_{obl}$ ; 2.  $V_m$  governs the infinitive  $V_{inf}$ ; 3.  $X_{obl}$  (henceforth  $X_i$ ) is co-referential to  $Y$ ; 4.  $Y_i$  predicates the null subject of  $V_{inf}$ ; and 5. the referent  $i$  of  $X_i$  and  $Y_i$  is also the logical subject of the infinitive  $V_{inf}$ . The model can thus be represented as (5), assuming that the case of  $X_i$  can only be oblique.<sup>3</sup>

$$(5) \quad [ V_m - [ X_i ] - [ Y_i - V_{inf} ] ]$$

a. [  $V_m$  συμβουλεύει ] [  $X_i$  τῷ Ξενοφῶντι ] [  $Y_i$  ἐλθόντα ] εἰς Δελφοὺς [  $V_{inf}$  ἀνακοινῶσαι ] τῷ θεῷ  
 περὶ τῆς πορείας.

b. [  $V_m$  ἀφῆκε ] [  $X_i$  μοι ] [  $Y_i$  ἐλθόντι ] πρὸς ὑμᾶς [  $V_{inf}$  λέγειν ] τᾶληθῆ.

<sup>3</sup> It is possible to assume a model in which  $X_i$  could also have NOM or ACC case. This is unhelpful because: 1. nominatives are not governed in AG; 2. accusatives are the default case for infinitive subjects, and their predicate complementizers / modifiers, thus rendering impossible to tell whether or not the case of  $Y_i$  is determined by default case marking or agreement with  $X_i$ .

There are more complex examples that fit this structure, as (6) in which there are two infinitival clauses with different  $V_{inf}$ s governed by the same  $V_m$  and a second main clause with a somehow unusual word order.

- (6) ἐνταῦθα καὶ [ $V_m$  παραγγέλλει ] [ $X_i$  τῷ τε Κλεάρχῳ ] [ $Y_i$  λαβόντι ] [ $V_{inf}$  ἦκειν ] ὅσον ἦν αὐτῷ στρατεύμα καὶ [ $X_i$  τῷ Ἀριστίπῳ ] [ $Y_i$  συναλλαγέντι ] πρὸς τοὺς οἴκοι [ $V_{inf}$  ἀποπέμψαι ] πρὸς ἑαυτὸν ὃ εἶχε στρατεύμα· καὶ [ $X_i$  Ξενία τῷ Ἀρκάδι ], ὃς αὐτῷ προειστήκει τοῦ ἐν ταῖς πόλεσι ξενικοῦ, [ $V_{inf}$  ἦκειν ] [ $V_m$  παραγγέλλει ] [ $Y_i$  λαβόντα ] τοὺς ἄλλους πλὴν ὅποσοι ἱκανοὶ ἦσαν τὰς ἀκροπόλεις φυλάττειν.  
At that time he also sent word to Clearchus to come to him **after gathering** the entire army which he had, and to Aristippus to effect a reconciliation with his adversaries at home and send him the army which he had; and he sent word to Xenias the Arcadian, who commanded for him the mercenary force in the cities, to come **after gathering** his troops, leaving behind only so many as were necessary to garrison the citadels. (Xen. Anab. 1.2.1, trans. Brownson (1998), with small modifications in bold)

The structure in (5) allow us to exclude from our data sentences like (7-a), which are easily divided as (7-b). The structure proposed above could wrongly include sentences like (7-a), by reading it as (7-b). The translation is logically wrong and it is not contextually adequate. For reaching the translation (7-a), the structure (7-c) is needed.

- (7) a. βουλευομένῳ δέ οἱ ἔδοξε ἐπὶ μὲν Καρχηδονίους τὸν ναυτικὸν στρατὸν ἀποστέλλειν ...  
He took into consideration and decided to dispatch the naval army against the Carchedonians ... (our translation, Hdt. 3.17)
- b. \* [ $Y_i$  βουλευομένῳ ] δέ [ $X_i$  οἱ ] [ $V_m$  ἔδοξε ] ἐπὶ μὲν Καρχηδονίους τὸν ναυτικὸν στρατὸν [ $V_{inf}$  ἀποστέλλειν ] ...  
??? He decided to took in consideration and to dispatch the naval army against the Carchedonians.
- c. [ $X_i$  βουλευομένῳ δέ οἱ ] [ $V_m$  ἔδοξε ] ἐπὶ μὲν Καρχηδονίους τὸν ναυτικὸν στρατὸν [ $V_{inf}$  ἀποστέλλειν ] ...

Further, one might say that the order of the constituents is the only instrument to separate sentences as those in (5) and (7). This is not the case since sentences like (8) are not rare. Using the definition in (5), it should be possible to read λογιζομένῳ as a  $Y_i$  (8-b). Just like in (7), the semantics of the sentence only work contextually if we assume that λογιζομένῳ is in the same syntactical level as αὐτῷ, so “flagged” as  $X_i$ .

- (8) a. ὥστε οὐκ ἐδόκει [ $X_i$  αὐτῷ ] δυνατὸν εἶναι ἀμαχεί παρελθεῖν, [ $X_i/Y_i$  λογιζομένῳ ] ὅτι εἰ μὲν νικῶν, πάντα ταῦτα ἀναλύσοιτο εἰ δὲ ἀποθάνοι, καλὴν τὴν τελευτὴν ἡγήσατο ἔσεσθαι πειρωμένῳ τῇ

πατρίδι ἀρχὴν Πελοποννήσου καταλιπεῖν.

... he thought for these reasons that it was not possible for him to pass by the enemy without a battle, since he reasoned that if he were victorious, he would make up for all these things, while if he were slain, he deemed that such an end would be honourable for one who was striving to leave to his fatherland dominion over Peloponnesus. (Xen. Hell. 7.5.18; trans. **Brownson (1921)**)

- b. \*ὥστε οὐκ [<sub>V<sub>m</sub></sub> ἐδόκει ] [<sub>X<sub>i</sub></sub> αὐτῷ ] [<sub>V<sub>inf</sub></sub> δυνατὸν εἶναι ] ἀμαχεῖ παρελθεῖν, [<sub>Y<sub>i</sub></sub> λογιζομένῳ ] ὅτι εἰ μὲν νικῶν, πάντα ταῦτα ἀναλύσοιτο εἰ δὲ ἀποθάνοι, καλὴν τὴν τελευτὴν ἡγήσατο ἔσεσθαι πειρωμένῳ τῇ πατρίδι ἀρχὴν Πελοποννήσου καταλιπεῖν.

??? ... he thought for these reasons that it was not possible for him to pass by the enemy without a battle reasoning that if he were victorious, he would make up for all these things, while if he were slain, he deemed that such an end would be honourable for one who was striving to leave to his fatherland dominion over Peloponnesus.

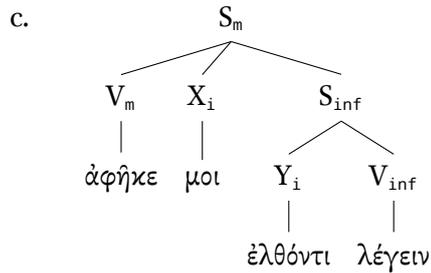
In all examples quoted to this point the  $Y_i$  is a participle and the way to tell apart an example like (3) and one like (7) and (8) is by means of formulating different informational structures. In (3), both events denoted by the participle ἐλθόντ- are prior or concomitant to the event denoted by the infinitive but not to the event denoted by the matrix verb, while in (7) and (8) the events denoted by βουλευομένῳ and λογιζομένῳ are prior or concomitant to the event of the matrix verb δοκεῖ. A similar reasoning could be applied to distinguish examples with regular adjectives, although there are but a few examples to my knowledge, most of them relying on interpretative nuances. In the example in (9), it seems that the second reading is more likely the right one: what is enough to them is to live with each other while still being unmarried. The first reading could be paraphrased as “it is enough for those, the unmarried ones, to live with each other”, which is a perfectly sound statement, but somewhat inadequate for the argument drawn in the section.

- (9) ἀλλ’ ἐξαρκεῖ αὐτοῖς μετ’ ἀλλήλων καταζῆν ἀγάμοις. (Plat. Symp. 192b)
- a. ἀλλ’ ἐξαρκεῖ [<sub>X<sub>i</sub></sub> αὐτοῖς ] μετ’ ἀλλήλων καταζῆν [<sub>X<sub>i</sub></sub> ἀγάμοις].  
But it suffices them, being unmarried, to live with each other.
- b. ἀλλ’ ἐξαρκεῖ [<sub>X<sub>i</sub></sub> αὐτοῖς ] μετ’ ἀλλήλων καταζῆν [<sub>Y<sub>i</sub></sub> ἀγάμοις].  
But it suffices them to live with each other unmarried.

So we must distinguish two kinds of adjectival elements: those embedded in the infinitival clause and those adjoined to  $X_i$  in the matrix clause. Those adjoined to the main clause must always agree in case to  $X_i$  by normal agreement rules, while those embedded in the infinitival clause may agree or not to  $X_i$  depending on whether or not the attraction takes place. Thus we should refine our structural frame to something like (10-b) corresponding to a c-structure (10-c), opposed to those at (11).

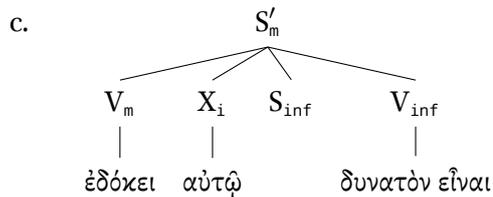
(10) a.  $[V_m \text{ ἀφῆκε } ] [X_i \text{ μοι } ] [Y_i \text{ ἐλθόντι } ] \text{ πρὸς ὑμᾶς } [V_{inf} \text{ λέγειν } ] \text{ τάληθῆ.}$

b.  $V_m X_i Y_i V_{inf} \Rightarrow [Matrix V_m X_i [Infinitive Y_i V_{inf} ] ]$



(11) a.  $\acute{\omega}\sigma\tau\epsilon \text{ οὐκ } [V_m \text{ ἔδόκει } ] [X_i \text{ αὐτῷ } ] [V_{inf} \text{ δυνατόν εἶναι } ] \text{ ἀμαχεὶ παρελθεῖν, } [X_i \text{ λογιζομένῳ } ] \dots$

b.  $V_m X_i 'Y_i' V_{inf} \Rightarrow [Matrix V_m X_i X_i' [Infinitive V_{inf} ] ]$



This structure has two main uses in this work. First, it allows us to establish a local vocabulary to describe the environment where case attraction takes place. Later, it was a tool to select in our queries which sentences were to be considered as *data points*, allowing the exclusion of cases where the only syntactic and semantic reading of the sentence was that the predicative was not part of the embedded infinitival clause, but rather part of the matrix clause.

## 1.2 Previous assessments

Before moving on to the main part of this work, it is necessary to discuss how the phenomenon of case attraction has been discussed in the literature, and which factors have been assumed to be conditioning or influencing its occurrence.

### 1.2.1 Grammars and Syntax manuals

As above mentioned, the type of case attraction that takes place in predicates in infinitive clauses of a oblique object in the matrix clause has not received the same attention when compared to the one acting over relative pronouns, making a notably erratic appearance in grammatical and syntactical scholarship of AG: (i) it is called attraction in [Buttmann \(1826, §142\)](#), [Hocheder \(1833\)](#), [Kühner and Gerth \(1898, §475\)](#), [Humbert \(1945, p. 84\)](#), [Smyth \(1956, p.278, p.440\)](#), [Cooper and Krüger \(1997, p.774, pp.988f.\)](#), and [Napoli \(2014, pp.212f.\)](#), (ii) also called assimilation by [Stahl \(1907, pp.643f.\)](#); (iii) commented but unnamed in [Krüger \(1852\)](#), [Goodwin \(1900, p. 203\)](#), [Schwyzer \(1950, II p.368\)](#), [Cooper and Krüger \(2002, p. 2500–1\)](#), [Rijksbaron \(2002, p. 105\)](#), and [Boas et al. \(2019, pp.587f.\)](#); and lastly

(iv) undiscussed in Goodwin (1881), Adrados (1992) and Crespo, Conti, and Maquieira (2003).

All these works seem to assume that the case attraction is a non-obligatory phenomenon, but only few of them present a further account. Besides Buttman and Hocheder's accounts, that we will later explore, the older and seemingly most influential account is that of Kühner and Gerth (1898, II, pp.24ff.), who argue that the attraction is more expected if the infinitive is a copula, and the embedded nominal, an adjective and that a feeling of cohesion is felt when the attraction is seen. The explanation is rather loose:

If adjective or substantive predicative determinations are added to the infinitive, they occur either in the same case as the personal object due to **Attraction** or in the Accusative by the neglect of the **Attraction**.

(a) *Genetivus c. Inf.* Δέομαί σου προθύμου εἶναι oder γενέσθαι. This is the **habitual construction** of predicates with the copula εἶναι and γενέσθαι. (...) But when a predicate with εἶναι and γενέσθαι is a substantive, the substantive and the next determination occur, **in general**, in the accusative. (...)

(b) *Dativus. c. Inf.* Συμβουλευώ σοι προθύμῳ εἶναι oder γενέσθαι. (...)

Note 1. Sometimes both constructions are found together. S. El. 960ff. ἦ πάρεστι μὲν στένειν ... ἐστερημένη, | πάρεστι δ' ἀλγεῖν ... γηράσκουσιν.

Note 2. Within the attraction, ἔξεστιν ὑμῖν γενέσθαι εὐδαιμοσιν, conveys **the feeling that the subject of the infinitive is the same as the object of the governing verb** is very much alive, while within the accusative construction, on the other hand, ἔξεστιν ὑμῖν γενέσθαι εὐδαιμονας, it is in **the background**. It is not rare that this relationship is left completely ignored by the employ of the simple *Accusativus cum Infinitivo*: ἔξεστιν ἀπιέναι ὑμᾶς (...). In this case, the infinitive is set so apart from the governing verb that it has its own subject, while the other stays without an object. (...) (KÜHNER; GERTH, 1898, II p.24ff., our emphases)<sup>4</sup>

<sup>4</sup> Our translation. Original text:

*Wenn zu dem Infinitive adjektivische oder substantivische Prädikatsbestimmungen treten, so stehen dieselben entweder vermittelt einer **Attraktion** mit dem persönlichen Objekte in gleichem Kasus oder mit Vernachlässigung der **Attraktion** im Akkusative.*

(a) *Genetivus c. Inf.* Δέομαί σου προθύμου εἶναι oder γενέσθαι. Dies ist die **gewöhnliche Konstruktion** adjektivischer Prädikate bei der Kopula εἶναι und γίνεσθαι. (...) Wenn aber bei εἶναι und γίνεσθαι das Prädikat ein Substantiv ist, so steht das Substantiv und die nähere Bestimmung **in der Regel** im Akkusative. (...)

(b) *Dativus c. Inf.* Συμβουλευώ σοι προθύμῳ εἶναι oder πρόθυμον εἶναι. (...)

*Anmerk. 1. Zuweilen finden sich beide Konstruktionen vereinigt. S. El. 960ff. ἦ πάρεστι μὲν στένειν ... ἐστερημένη, | πάρεστι δ' ἀλγεῖν ... γηράσκουσιν. (...)*

*Anmerk. 2. Bei der Attraktion: ἔξεστιν ὑμῖν γενέσθαι εὐδαιμοσιν wirkt **das Gefühl, dass das Subjekt des Infinitivs zugleich Objekt des regierenden Verbs ist, noch lebendig nach**; bei der akkusativischen Ausdrucksweise dagegen: ἔξεστιν ὑμῖν γενέσθαι εὐδαιμονας tritt es **in den Hintergrund**. Nicht selten wird auf dieses Verhältnis überhaupt keine Rücksicht genommen, indem der einfache Accusativus cum Infinitivo gebraucht wird: ἔξεστιν ἀπιέναι ὑμᾶς (...). Der Infinitiv löst sich dann in der Weise vom regierenden Verb ab, dass er sein eigenes Subjekt hat, während jenes objektlos bleibt. (...)*

Another “expanded” explanation of case attraction occurs in Cooper and Krüger (1997). Although there are no interpretations on the distribution of attraction in Krüger (1852, 407ff.), Cooper proposes that the difference in the frequency of *agreement* between Genitive and Dative instances of attraction is due to lexical reasons, and that, if the main verb is a participle, the attraction is more common (COOPER; KRÜGER, 1997, p. 774):

55.2.5 When an idea associated with a verb which has a dependent infinitive is expressed in the dative or genitive, and then the same idea occurs as the subject of the subordinate infinitive, it is likely to be expressed in this connection in the same case, dative or genitive. This is especially true if the leading verb is a participle. There is some competition here from the accusative as the most natural case for the subject of an infinitive. (...) Moreover the dative is so used rather more often than the genitive, probably because the genitive is not constructed with verbs as often as the dative and so simply occurs less often with leading verbs than the dative. But both the dative (A), and the genitive (B) occur often enough so that they must be considered quite normal in this function. (COOPER; KRÜGER, 1997, p. 744)

As the data is quite scarce for this phenomenon, one could safely dismiss the *participle* assertion, but the number of verbs complemented by a genitive object and an infinitive clause is actually considerably smaller than those which are constructed with a dative object. In a later work, the author also talks about semantic effects, although in a slightly different manner when compared to that given by Kühner and Gerth:

2.55.2.6[7] When the focus falls on the infinitive it may assert its natural accusative subject over the pull of another case such as the dative or genitive which could go naturally with the leading expression. (COOPER; KRÜGER, 2002, p. 2501)

These are the longer descriptive accounts given by grammars and syntax manuals, excluding that of Buttman and Hocheder. The main conclusions drawn by these references are: (i) there is no consensus whether or not the attraction is anything out of the ordinary AG case and agreement system; (ii) even for those who agree with its existence as a phenomenon, it has not been well agreed if the precise term for depicting it is *attraction* or *assimilation* and similars;<sup>5</sup> (iii) the agreement between a matrix oblique object and a predicate in a subordinate infinitive clause is not obligatory. As for the most complete treatments given in syntactic manuals, both the hypotheses brought by Kühner and Gerth (1898) and Cooper and Krüger (2002) are complementary, the *attraction* brings forward a *feeling* of unity between the matrix object and infinitive subject, whilst the latter assume that the absence of *attraction* is caused by a major focus on the infinitive domain.

<sup>5</sup> See also the use of the concept of *case transmission* in Sevdali (2013) and the discussion brought in Gonda (1965) on the matter of *attraction* as a linguistic concept across Indo-European languages.

### 1.2.1.1 Something about impersonal verbs

A curious particularity of a couple of manuals on AG grammars should be noted. Most of the above mentioned works do not discuss the type of the main verb  $V_m$  in relation to the case attraction, but it is noteworthy that both Humbert (1945, p. 84) and Napoli (2014, pp.212f.) only discuss the case attraction with *impersonal verbs*:

§131. When an impersonal verb affects a subject expressed in the dative, the attribute that this subject might be itself expressed in the dative by attraction. But in Greek as in Latin, the logically expected accusative is always possible. In both languages the sense seems to defend pretty well its rights against the attraction:

And. *de Red.* 26 ἔμοιγε ὑπάρχει δημοτικῶ εἶναι (...) comparable to Cic. *Tusc.* I.33 licuit esse otioso Themistocli (...). But Thucydides employs the accusative justified κατὰ σύνεσιν, by the equivalence of the constructions ἔξεστί μοι εἶναι = ἔξεστί ἐμέ εἶναι in 4,20 Λακεδαιμονίοις ἔξεστί ὑμῶν φίλους γενέσθαι (...), that one could compare to Cic. *pr. Balb.* 29 ciui Romano licet esse Gaditanum (...) (HUMBERT, 1945, p. 84)<sup>6</sup>

Curiously enough, the same kind of remark appears in Ernout and Thomas (1964, 132f.) when discussing the case attraction in Latin:<sup>7</sup>

§ 153. **Attraction of the attribute to the dative.** – This attraction is frequent after the impersonal *licet* by the agreement with its dative complement: Cic., *Tu.* I 33: *licuit esse otioso Themistocli* (...)

The accusative used because of the infinitive construction is not unknown: Cic. *Balb.* 29: *ciui Romano licet esse Gaditanum* (...) Nevertheless the attraction to dative attested after Plautus (*Ep.*, 338) is way more frequent. It extends also to similar constructions: Hor., *Ep.* I, 16, 61: *da mihi ... iusto sanctoque uideri* (...). (ERNOUT; THOMAS, 1964, pp.132f.)<sup>8</sup>

<sup>6</sup> Our translation. Original:

§131. *Quand un verb impersonnel affecte un sujet exprimé au datif, l'attribut de ce sujet peut être mis lui-même au datif par attraction. Mais, en grec comme en latin, l'accusatif logiquement attendu est toujours possible; dans les deux langues, le sens semble assez bien défendre ses droits contre l'attraction :*

And. *de Red.* 26 ἔμοιγε ὑπάρχει δημοτικῶ εἶναι «il est de ma nature d'être un bon démocrate» est à comparer à Cic. *Tusc.* I.33 *licuit esse otioso Themistocli* «Thémistocle pouvait vivre loin des affaires». Mais Thucydide emploie l'accusatif justifié κατὰ σύνεσιν, par l'équivalence des tours ἔξεστί μοι εἶναι = ἔξεστί ἐμέ εἶναι en 4,20 Λακεδαιμονίοις ἔξεστί ὑμῶν φίλους γενέσθαι «il est possible aux Lacédémoniens de devenir vos amis», que l'on comparera à Cic. *pr. Balb.* 29 *ciui Romano licet esse Gaditanum* «il est permis à un citoyen romain d'être citoyen de Gadès».

<sup>7</sup> On case attraction in Latin infinitive clauses, see also Kühner, Holzweissig, and Stegmann (1877, II, pp. 499ff.), Calboli (2009, p. 156–7), Jøhndal (2012, 95f), and Pinkster (2015, p. 1270–2).

<sup>8</sup> Our translation. Original:

§ 153. **Attraction de l'attribut au datif.** – Cette attraction est courante auprès de l'impersonnel *licet* par accord avec son datif complément : Cic., *Tu.* I 33 : *licuit esse otioso*

Lastly, other IE languages have a phenomenon similar if not identical to that of AG, and Brugmann (1925, 79f.) briefly shows them in AG, Latin, Lithuanian, and Old Church Slavonic, mentioning that it is more frequent with impersonal verbs.

3) [The predicate occurs ] in the dative, when the subject word depends as a dative to the governing verb. So lat. *permitto tibi esse otioso*, gr. *συμβουλεύω σοι προθύμῳ εἶναι*. Often, in these cases the governing verb is an impersonal. Caes. b. Gall. 5, 41, 6 *licere illis incolumibus discedere*. Gr. Xen. Hipparch. 7, 1 *παντὶ προσήκει ἄρχοντι φρονίμῳ εἶναι* (...); E 253 *οὐ γάρ μοι γενναῖον ἀλυσκάζοντι μάχεσθαι* (...); Lit. *mán reik' skupám búti* 'ich muß sparsam sein'; ocs. Math. 18, 8 *dobrèje ti jestъ vьniti vь životъ chromu li bedъnu neže đvè rǫcě i đvè nozě imaštjiu vьnъženu byti vь ognь věčьnyjъ* 'καλόν σοι ἐστὶν εἰσελθεῖν εἰς τὴν ζωὴν χαλόν ἢ κυλλόν, ἢ δύο χεῖρας ἢ δύο πόδας ἔχοντα βληθῆναι εἰς τὸ πύρ τὸ αἰώνιον'. (...)

In Greek and Latin the predicative also occurs in these cases in the accusative (...). This phenomenon shows a detachment of the predicative from its relation with the dative subject and a transition to the average construction used with common subjects supplementing the infinitive. (BRUGMANN, 1925, pp.79f.)<sup>9</sup>

This treatment of impersonal verbs as the *default* place for attraction does not seem to be fortuitous. As we will see later, the attraction is somewhat more frequent with impersonal verbs, or rather, with a class of impersonal verbs, namely those denoting possibilities.<sup>10</sup>

Themistocli « *il était loisible à Thémistocle de vivre loin des affaires* ».

*L' accusatif appelé par la tournure infinitive n' est pas inconnu : Cic. Balb. 29 : ciui Romano licet esse Gaditanum « il est permis à un citoyen romain d' être citoyen de Gadès ». Mais l' attraction au datif attestée depuis Plaute (Ép., 338) est bien plus fréquente. Elle s' étendait aussi à des tours voisins : Hor., Ép. I, 16, 61 : da mihi ... iusto sanctoque uideri « accorde moi de paraître juste et probe » (...).*

<sup>9</sup> Our translation. Original:

3) *Der Dativ, wenn das Subjektswort als Dativ vom regierenden Verbum abhängt. So lat. permitto tibi esse otioso, griech. συμβουλεύω σοι προθύμῳ εἶναι. Oft ist in diesem Fall das regierenden Verbum ein Impersonale. Lat. Plaut. Epid. 338 quieto tibi licet esse, Caes. b. Gall. 5, 41, 6 licere illis incolumibus discedere. Griech. Xen. Hipparch. 7, 1 παντὶ προσήκει ἄρχοντι φρονίμῳ εἶναι (...); E 253 οὐ γάρ μοι γενναῖον ἀλυσκάζοντι μάχεσθαι (...); Lit. mán reik' skupám búti 'ich muß sparsam sein'; aksl. Math. 18, 8 dobrèje ti jestъ vьniti vь životъ chromu li bedъnu neže đvè rǫcě i đvè nozě imaštjiu vьnъženu byti vь ognь věčьnyjъ 'καλόν σοι ἐστὶν εἰσελθεῖν εἰς τὴν ζωὴν χαλόν ἢ κυλλόν, ἢ δύο χεῖρας ἢ δύο πόδας ἔχοντα βληθῆναι εἰς τὸ πύρ τὸ αἰώνιον'. (...)*

*Im Griech. und Lat. erscheint in diesem Fall das Prädikativum auch im Akkusativ (...). Diese Erscheinung zeigt Loslösung des Prädikativums aus der Beziehung zum subjektischen Dativ und Übergang zu der bei zu ergänzendem allgemeinen Subjekt des Infinitive üblichen Konstruktion.*

<sup>10</sup> For a discussion on *dative subject construction* across IE languages, see Barðdal et al. (2012).

### 1.2.2 A brief history of the concept of attraction

In an odd article, Gonda (1965) makes a strong criticism of *attraction* as a linguistic concept employed in the analysis of ancient languages (specifically Indo-European ones). The concept, he argues, is only justified by a *vis inertiae* of scholars which have not “*assimilated the methods devised (...) by Wackernagel, Havers, Hofmann, Löfstedt, Marouzeau (...)*” and “*their successors belonging to the younger generation*” when dealing with syntax and stylistics. This *inertia* is expressed in the unjustified reluctance to relinquish traditional grammatical terminology brought into use because of a logical approach to the grammar. There are some issues with Gonda’s disapproval,<sup>11</sup> but he is right in drawing attention to the fact that *attraction* as a concept have been used erratically without a clear definition,<sup>12</sup> and that the set of what is discussed under the term varies considerably throughout the literature.

The concept dates back, according to Wackernagel (1924, I. p.51), to the work of Francisco Sánchez de las Brozas, *Minerva, seu de causis linguae Latinae* (1587), and to the well known grammar of Port-Royal.<sup>13</sup>

The modern term ‘attraction’ goes back to the Spaniard Sanctius (...), who in his book *Minerva* (...) used the phrase ‘alter casus ab altero attrahitur’ (‘the one grammatical case is attracted by the other’), where he had in mind the image of a magnet.

<sup>11</sup> There is a general lack of evidences for his analyses and those are not formalized in a way that one can compare and show how those phenomenons are different from each other.

<sup>12</sup> See also how Napoli (2014) depict it:

Attraction has been described as the phenomenon taking place when a given word does not show the grammatical form expected on the basis of the canonical morphological and/or syntactic rules, but appears in a different form because of the influence of another word in the same clause or in a different clause. In Greek, attraction is not obligatory. It occurs at three distinct levels: (i) It may involve the feature of agreement: in particular, a verb can be attracted by an attributive phrase or an apposition to its subject, and a demonstrative pronoun can be attracted by the substantive to which it is referred. (ii) It may concern case: the most typical instance is the attraction of the relative pronoun by its coreferential head; the opposite phenomenon is also possible. (iii) It may involve the choice of moods (i.e., indicative, optative or subjunctive).

(...)

In general terms, attraction may be defined as the phenomenon whereby a specific word appears in a grammatical form different from the form expected on the basis of the morphological and/or syntactic rules determined by the linguistic context, as the result of the influence exerted upon it by another element that belongs to the same clause or to another clause.

<sup>13</sup> Which, according to Langslow (2009), should be the *Grammaire générale et raisonnée contenant les fondemns de l’art de parler; expliquéz d’une maniere claire et naturelle; Les raisons de ce qui est commun à toutes les langues & des principales différences qui s’y rencontrent; Et plusieurs remarques nouvelles sur la Langue Française* (1660).

The noun *tractio* is formed for the first time in the Port Royal grammar of 1660. (WACKERNAGEL, 1924, I. p.51, translation by Langslow (2009))

It is hard to follow Wackernagel's path to the origins of the concept, even with help of the notes provided by Langslow (2009). Starting with Sánchez de las Brozas (1587), Wackernagel attributes to this work the description of attraction as "*alter casus ab altero attrahitur*". The actual passage, the beginning of chapter XII of Minerva's book IV, says:

By *Hellenism*, or Greek Construction, we call whenever authors speak in a Greek fashion in such a way that they fail to justify (themselves) by the Latin rules. Linacer classifies the Hellenism in a multitude of classes; we will explain only the *Antiptosis*, since it seems to be the only one that exceeds the Latin canon. (...)

It is not rare that Greek out of two cases, if mutually referent, attributes one by government, while the other by being adjoined to it, as if one is *derived* (*alter ab altero trahatur*) from the other; so, *περὶ λόγων, ὧν ἔλεξα*, i.e. *de verbis, quibus dixi*, in place of *quae* (...) <sup>14</sup>

Other commentaries by Sánchez are worth discussing. First, he frequently uses *traho* to describe syntactic *hellenisms* in Latin, including *gender attraction* as well as *number attraction*. But for our work, there is something even more notable. Although in book III, chapter 7 he mentions the sentence *non lice tibi esse bono* as an example of violation of Latin grammar caused by *hellenismo*,<sup>15</sup> in

<sup>14</sup> Our translation. Original:

Hellenismum, sive Græcam constructionem, nominamus, quoties auctores sic græcisant, ut latina norma defendi nequeant. Hellenismum in infinita genera deducit Linacer; nos tantum Antiptosin persequemur, quum hæc sola Latinos canones excedere videatur.

(...)

Græci non raro e duobus casibus, si se mutuo respiciant, alterum tantum regunt, alterum illi adjungunt, ita ut **alter ab altro trahatur**; ut, *περὶ λόγων, ὧν ἔλεξα*, id est de verbis, quibus dixi, pro, quæ (...)

It is noteworthy that the use of *traho aliquid ab aliquo* could be rendered as *to derive X from Y* (as I did), but has been understood very early as *to attract one by the other*.

<sup>15</sup> See III.7:

*Nec profuerit Grammaticis, ex dogmate repetere, si præcesserit dativus, dtivum sequi, aut accusativum: longe enim falluntur; nam dativus ille non præcedit; In illo quippe, Non licet tibi esse bono, syntaxis est, esse bono non licet tibi, et est Græca loquutio, de qua in Hellenismo. Imo ergo sic stuatuo, ubi fuerint diversar sententiæ orationes, nos non posse loqui sine accusativo; Ut, præclarum est esse poetam; beatissimum est felicem mori; Melius est mori pauperem, quam divitem. Cujus generis sunt illa, quæ citavimus; quantum est, esse Jovis fratrem, et, nocet esse sororem. Cicero Marcello 4. epist. Denique si fuit magni animi non esse supplicem victori. Sed (&) in hac parte Græcos jure suo no fraudaverim, et eorum phrasim imitantes. Lucanus; Tutumque putavi, Jam bonos esse socer: quod damnat Valla, sed fallitur, ut mox dicetur.*

the chapter devoted to show how AG affected the syntax and style of Latin with case attraction, he only points out examples of attraction to the nominative, i.e. those in which the infinitive predicate agrees with the matrix subject, not mentioning object-predicate attraction.

*Cupio esse clemens, Laboras ut videri doctus* are such a frequent Hellenism that the Latin grammarians turned into a rule that they did not discern. The true rule is that after any infinitive of this kind an accusative follows: *cupio dici doctum*. The reason is that the accusative always precedes it, either expressed or understood. But since Greeks usually put a nominative before an infinitive, and because of this, the nominative follows (the infinitive). In Greek one says, *Ajunt rec hoc fecisse, dicunt tu esse dives*: and then Latins say, *vis videri probus*, just as if it were a complete *Tu vis videri tu esse probus*. But the fact that this is a Greek way of saying was pointed by Budé in his *Commentariis*, Muret in his commentary on Catullus and Lambin in his commentary to the 2nd Ode of Horace.<sup>16</sup>

Sánchez seemingly do not intend to formulate in its *Minerva* a clear concept of *attraction* and by saying that “*alter ab altero trahatur*” (one attracts / is derived from the other) he might be only describing what he calls *antiptosis*. The term *antiptosis* (ἀντίπτωσις) is sparingly employed in Ancient Greek scholarship, generally in *scholia*, like (12), where the lack of attraction is understood as a case of “miss-casing”:<sup>17</sup>

- (12) a. καὶ δὲ σοὶ αὐτῷ ἔοικε μετὰ πρώτοισιν  
 conj part you.DAT.SG yourself.DAT.SG seems.PRES.3SG among first.DAT.PL  
 ἔόντα.  
 be.PTC.PRES.ACC.SG  
 And it is proper for you to be among the first (men) (Hom. Od. 6.60).  
 b. ἔόντα] σοὶ ἔόντα, ἀντίπτωσις. H.

In the few comments of case attraction that we are aware of, the scholiasts assume that the agree-

<sup>16</sup> Our translation. Original:

*Cupio esse clemens, Laboras videri doctus, ita tritus est Hellenismus, ut Grammatici Latini regulam constituerint, quam non intelligunt. Regula vera est, ut semper post hujusmodi infinita sequatur accusativus; ut cupio dici doctum. Ratio est, quia semper accusativus praecedat expressius, aut subintellectus. Sed quia Graeci non raro ante infinitum collocant nominativum, inde factum est, ut nominativus sequatur. Graece dicitur; Ajunt rec hoc fecisse; dicunt tu esse dives: unde Latini dicunt, Vis videri probus, quasi integrum esset, Tu vis videri tu esse probus. Hoc autem Graece dictum esse, Budæus in Commentariis, Muretus in Catullum, Lambinus in 2. Od. Horatii adnotarunt.*

The texts Sánchez is referring to are Budé’s *Commentarii linguae graecae* (1556), Muret’s *Catullus, et in eum commentarius M. Antonii Mureti, ab eodem correcti, & scholiis illustrati, Tibullus et Propertius* (1558), and Lambin’s *Dionysii Lambini Monstroliensis regii professoris, In Q. Horatium Flaccum ex fide atque auctoritate complurium librorum manuscriptorum* (1577).

<sup>17</sup> Other terms relating to case mismatches are included in the vocabulary provided by Dickey (2007): 1. ἀνθυπαλλάγή; 2. ἀνθυπαλλάσσω; and 3. ἀντιπτωτικός. The amount of examples is feasible for most of it.

ment between the oblique of the main clause and the predicative of the embedded clause should occur. This is also seen in (13), where the scholiast do not draw a comment on the attracted *κτανούση*, but rather on the non-attracted *ἄγουσαν*, which is regarded as an unusual practice in Euripides.<sup>18</sup>

- (13) a. Μη. φίλοι, δέδοκται τοῦργον ὡς τάχιστα μοι | παῖδας κτανούση τῆσδ' ἀφορμᾶσθαι χθονός, |  
καὶ μὴ σχολὴν ἄγουσαν ἐκδοῦναι τέκνα | ἄλλῃ φρονεῦσαι δυσμενεστέροι χειρί.  
Medea. Friends, my resolve is fixed on the deed, **to kill** my children with all speed and to flee from this land: I must not, **by lingering**, deliver my children for murder to a less kindly hand. (Eur. Med. 1236-9, translation by Kovacs (1994))
- b. καὶ μὴ σχολὴν ἄγουσαν: διατριβὴν βραδύτητα. πάλιν δὲ τῷ συνήθει σχήματι ἐχρήσατο, καὶ ἔστιν ἀντὶ τοῦ ἀγούση.  
And not by lingering (*ἄγουσαν*): *delay, sluggishness*. It is used against the [author's] usual practice, being in the place of *ἀγούση*. (Sch. Med. 1238, our translation)

After Sánchez, it seems that the *antiptosis* concept lost whatever traction it might have had and the concept of *attraction* took its place in describing the systems of feature matching-mismatching. Although Wackernagel claims that the first use of the substantive *attraction* was attested in the *Port-Royal* (1660) grammar, this is not the case. The *Grammaire générale et raisonnée* does not mention anywhere any kind phenomenon of the type of attraction nor uses the substantive *attraction*. Nevertheless, the work of a Port-Royal grammarian, Claude Lancelot, does employ the substantive to describe pretty much what the modern and contemporary AG and Latin linguistics does. The first of his texts to attest the substantive *attraction* is his *Nouvelle Methode pour apprendre facilement la Langue Latine* first published in 1644 (LANCELOT, 1709, p. 559). In a later work, the *Nouvelle Methode pour apprendre facilement la Langue Greque*, Lancelot presents a slightly more complete explanation of his views on attraction.<sup>19</sup> As in Sánchez, the case attraction is treated as particularity of AG, this comes with a definition of attraction by opposition to government in Lancelot (1658, p. 385):

Rule I.

Distinguish the Attraction from Regime

The syntax of the Greek, as its first maxim must distinguish the Attraction from Regime.

The first maxim that one must follow to well understand the Greek construction it to distinguish the Attraction from the Regime: for the Greeks have that in particular, as we mentioned in the *Methode Latine*, that by ruling or making agree a case, sometimes it attracts to itself another noun, without it being governed by

<sup>18</sup> This interpretation of the scholion was provided by Philomen Probert to whom I am grateful for the correction. Previously, I had understood τῷ συνήθει σχήματι as “against the [general] usual construction”. The argument changed slightly in the sense that this is no longer an evidence for the scholiast’s intuition that attraction is more common for AG in general, but more common for Euripides’ style and grammar.

<sup>19</sup> It is a surprise to see that the first syntactic rule in Lancelot’s method is the one of case attraction.

the verb to which it reports: So they say Σύνοιδα ἑμαυτῷ σοφὸς ὢν, Plat. *I know well that you are wise*: where σοφὸς ὢν, reports to the Nominative of σύνοιδα, i.e. the implied ἐγώ. Σαυτῷ συνήδεις ἀδικοῦντι, Demosth. *You know that you are doing wrong*: where ἀδικοῦντι reports to σαυτῷ which comes before. (LANCELOT, 1658, p. 385)<sup>20</sup>

Lancelot includes a rule to the attraction on infinitive clauses, including attraction to nominative and oblique cases Lancelot (1658, 388ff.). He also presents the cases where attraction fails to take place, but no further discussion is given.

Rule III.

On the Infinitive.

So the Infinitive which likely takes before itself  
either the Nominative or the Accusative itself,  
due to that Attraction it might as well join  
to other cases that a word will obtain to itself.

(...)

(...)

3. But often by virtue of *attraction*, the infinite, mostly of the substantive verbs, can still be accompanied by any other case which will relate to some noun governed by a preceding word; either the nominative as Περιλκλῆς ἔφυσε μέχρι τῷ βομῷ φίλος εἶναι, Plut. (...); or the genitive (...); or the dative (...)<sup>21</sup>

<sup>20</sup> Our translation. Original:

*Regle I.*

*Distinguer l'Attraction du Regime.*

*La syntaxe des Grecs, pour premiere maxime,  
doit son Attraction distinguer du Regime.*

*La premiere maxime qu'il faut suivre pour bien entendre la construction Grecque, c'est de distinguer l'Attraction d'avec le Regime : Car les Grecs ont cela de particulier, comme nous avons dit dans la Meth. Lat. que faisant regir ou accorder un Cas, il attire par fois à lui un autre Nom, sans qu'il soit gouverné du Verbe auquel il se doit rapporter : Ainsi ils disent, Σύνοιδα ἑμαυτῷ σοφὸς ὢν, Plat. Je sai bien que je suis sage : οὐ σοφὸς ὢν, se rapporte au Nominatif de σύνοιδα, savoir ἐγώ sous-entendu. Σαυτῷ συνήδεις ἀδικοῦντι, Demosth. Tu sais bien que tu fais mal : οὐ ἀδικοῦντι se rapporte à σαυτῷ qui est devant.*

<sup>21</sup> Our translation. Original:

*Regle III.*

*De l'Infinitif.*

*Ainsi l'Infinitif qui devant soy prendre aime,  
Ou le Nominatif, ou l'Accusatif mesme :  
Par cette Attraction se joindre encor pourra  
A d'autres Cas qu'un mot à soy retirera.*

(...)

(...)

3. Mais souvent en vertu de l'Attraction, l'Infinitif sur tout des Verbes Substantifs, peut encore se joindre avec tout autre Cas qui aura rapport à quelque Nom gouverné par un mot précédent; soit le Nomin. comme Περιλκλῆς ἔφυσε μέχρι τῷ βομῷ φίλος εἶναι, Plut. (...); soit le Genitif (...); soit le Datif (...)

Both to Sánchez and to Lancelot, the basic conception of attraction (or *antiptosis*) is that AG, despite the preference of marking infinitival subjects with accusative (or nominative, to Lancelot), might also mark it with a different case *derived* or *attracted*, if there is a word which could exert an attractive force over this embedded word, due to identity. This does not come as a surprise, fact it, this is the very prototypical idea of *attraction* in the first place. Furthermore, a marginal but curious point is that, to these grammarians, any sign of attraction in Latin should be taken as *hellenism*.

Wackernagel adds that Buttman and Hermann were responsible for the diffusion of the concept. Both authors have a somewhat different approach to the question, and only the first discusses attraction in infinitive clauses. Buttman's definition goes as follows:

§142.2 But whenever the subject of the infinitive is not expressed, but it is itself contained in the main clause in any case, the attraction particularly fitted for the Greek takes place, i.e. these complements do not occur in the accusative, but in the same case in which the same object takes in the main sentence, so to speak, due to the absence of the subject word, somehow attracted closer to the preceding verb. (BUTTMANN, 1826, p. 462)<sup>22</sup>

Here, the idea of a empty subject position appears more clearly than in Lancelot's "*qu'un mot à soy retirera*". In a later paragraph, Buttman brings the idea that attraction is a particularly Greek phenomenon with a cultural twist:

§151. I. 1. A great effort for the more concise, especially of the Attics, those who frequently sacrifice the strict logic, is what that [Attraction] is. (...)  
3. Whenever the subject of the infinitive have already appeared with the previous verb, the merge of both clauses into one is then brought about, by letting everything pertaining to the subject of the infinitive to be attracted to the subject of the main verb. (BUTTMANN, 1826, p. 535)<sup>23</sup>

<sup>22</sup> Our translation. Original:

§142 2. Sobald aber das Subjekt des Inf. nicht ausgedrückt ist, dasselbe aber im Hauptsatze bereits in irgend einem Kasus enthalten ist, so findet die den Griechen besonders eigne Attraction statt, d.h. diese Beifügungen stehn nun nicht im Akkus., sondern in demjenigen Kasus, worin derselbe Gegenstand im Hauptsatze enthalten ist, werden also gewissermaßen, wegen Abwesenheit des Subjektwortes, vom dem nächst vorhergehenden Verbo angezogen.

<sup>23</sup> Our translation. Original:

§151. I. 1. Ein Hauptbestreben, besonders der Attiker, dem sie häufig die strenge Logik ausopfern, ist das nach runder Kürze. Diesem zufolge suchen sie zwei genau verbundene Sätze so viel als möglich in einem zu konzentriren. (...)  
3. Sobald ferner das Subjekt des Infinitivs schon beim vorhergehenden Verbo vorkam, wurde die Verschmelzung bider Sätze zu einem dadurch herbeigeführt, daß man alles was zum Subjekt des Infinitivs gehörte von dem Subjekt des ersteren Verbi anziehen ließ.

No language internal reasons for attraction are given in his account. Buttman includes this commentary on his section on figures of speech (*Konstruktion-Arten*), and so does Hermann (in his appendix to VIGER et al., 1834, p. 891–4), who proposes a similar definition to case attraction, which, by his examples, only cover *attractio relativi*:<sup>24</sup>

A third type of idiom follows, concerning a relation which when it is placed in the conjunction and union of sentences, it is necessary that it could break the grammatical reason in two ways: by conjoining what should be disjointed, and by disjointing what should be conjoined. Thus this type consists of two parts: attraction and anacoluthie.

On the one hand, there is the attraction, which takes place when some word, while referring to two parts of the sentence, not directly referring to one of them, joins both in one. (HERMANN, 1834, p. 713)<sup>25</sup>

Buttman and Hermann's assessments differ on basis of scope and of reasoning. Buttman has an external explanation for attraction (the struggle to unification particular to the Greek people) and his concept includes many distinct phenomena, while Hermann repeatedly tries to prove that examples presented by Buttman could be well analysed without the use of the concept of attraction, by assuming some rules of assimilation, and does not present the same set of phenomena as attraction, e.g. our case attraction is not represented in his discussion, although the omission does not prove that the author did not consider it as a *true* Attraction.

I will not assume intermediate steps between the concept of attraction in Sánchez' *Minerva* and Lancelot's *Methodes* to that of Buttman and Hermann, since they most likely had direct access to both of the previous works and attraction as a concept had been ignored until Buttman's grammar, as Förster (1868, 24ff.), May (1878, p. 2), and Wackernagel (1924, II p.24ff.) have shown.<sup>26</sup>

<sup>24</sup> I am thankful to Alex Mazzanti Junior for pointing me to the precise work from which Hocheder quotes Hermann, and helping me to translate the latin quotations.

<sup>25</sup> Our translation. Original:

*Sequitur tertius idiomatum locus qui est relationis: quae quum posita sit in conjunctione nexuque sententiarum, dupliciter necesse est rationem grammaticam laedi posse, conjungendo, quae disjungi debebant, et distrahendo, quae debebant cohaerere. Unde ex duabus partibus constat hic locus, attractione et anacolutho.*

*Est autem attractio in eo posita, si quid eo, quod simul ad duas orationis partes refertur, ad quarum alteram non recte refertur, ambas in unam conjungit.*

<sup>26</sup> Förster's *Quaestiones de attractione enuntiationum relativarum qualis quum in aliis tum in Graeca lingua potissimumque apud Graecos poetas fuerit* (1868) does not account for infinitive attraction. May's *De attractionis usu Herodoteo* (1878) mostly enumerates examples of case attraction of various types in Herodotus, just briefly showing the various assessments previous to his. It is nevertheless an interesting example since most of his contemporaries were not working with case attraction outside the relative clauses while he does list some examples in Herodotus (pp.24–8).

While neither Buttman nor Hermann present proper analyses of case attraction, in the sense that they do not evaluate the relations between different outcomes of environments and the reasons behind it, their influence is also felt on a short dissertation by Hocheder (1833).<sup>27</sup>

Hocheder assumes that the case attraction in infinitive clauses is similar to the *attractio relativi* and *inversa* and part of a major concept of *Attraction*, defined as: ... *ist die Vereinigung zwei getrennter; aber dem Stoff nach inning verwandter Sätze in einem Satz* (HOCHEDER, 1833, p. 4).<sup>28</sup> The author unfortunately does not discuss the distinction between attracted and non-attracted constructions in detail, but assumes that the attraction is a result of the psychological tendency for the unification between adjacent words and similar concepts, going further from the “concentration effort” proposed by Buttman. The attraction is a product of a “Greek spiritual disposition” (*griechischen Geistes-Thätigkeit*) that looks for a logical and aesthetic unification of what is divided.<sup>29</sup> The “theoretical” conclusion — that actually, comes before the description of the phenomenon — is put forward in:

Therefore, the attraction is based on the psychological effort to present the part in its dependence on the whole or on what initially governs, and not merely logically, but often also with aesthetically preponderance. Buttman’s so-called effort for round brevity is an effort for the unification of what has been divided, for the eradication of everything that separates and breaks, in order to produce a unified understanding of the double. The logically or aesthetically subordinate is taken up in the organism of the term or sentence that is more important for the purpose of the person performing it, and a double appears in its most intimate penetration as One. (HOCHEDER, 1833, p. 6)<sup>30</sup>

From this point forward the case attraction becomes more and more a concept for describing the *attractio relativi* and *attractio inversa*. The concept still appears in some manuals as a quirky syntactic behaviour, but it seems that it disappeared from the philological discussion. The return of the attraction on infinitive clauses as an element of interest to researchers seems to happen only the 70s by the generative and minimalist grammar, which is the focus of the next section.

<sup>27</sup> Special thanks to Philomen Probert for showing me this piece as well as Lancelot’s manuals to AG and Latin.

<sup>28</sup> “The union in one sentence of two separate but substantially related sentences.”

<sup>29</sup> There are a few other rather dated assumptions and commentaries such as *die geistigen Lebens der Volk*.

<sup>30</sup> Our translation. Original:

*Darnach gründet sich die Attraction auf das psychische Bestreben, den Theil in seiner Abhängigkeit vom Ganzen oder vom zunächst Regierenden, und nicht bloß logisch, sondern oft auch ästhetisch Überwiegenden hinzustellen. Dieses von Buttman sogenannte Streben nach runder Kürze also ist ein Streben nach Vereinigung des Getheilten, nach Vertilgung alles Abgränzenden und Trennenden zur Herstellung einer einheitlichen Auffassung des Doppelten. Das logisch oder ästhetisch Untergeordnete wird aufgenommen in den Organismus des für den Zweck des Darstellenden gewichtigeren Begriffes oder Satzes, und ein Doppeltes erscheint da in innigster Durchdringung als Eines.*

### 1.2.3 Agreement, attraction, transmission: modern accounts

#### 1.2.3.1 Global or local derivations?

Lakoff (1970) uses the system of Agreement in AG to argue that there should be in the transformational grammar a set of global rules of derivation.<sup>31</sup> His main argument is that you could show that agreement rules are applied globally to related nodes in a construction like (14-b), derived from (14-a).<sup>32</sup>

- (14) a. ἐμμένομεν τούτοις ἃ ἴσμεν λεγόμενα  
 We abide by those [things] (dat.pl) which (acc.pl) we know being said (acc.pl)  
 δίκαια εἶναι  
 just (acc.pl) be  
 We abide by those things which we know are said to be just.
- b. ἐμμένομεν οἷς ἴσμεν λεγομένοις δίκαιοις εἶναι  
 We abide by what (dat.pl) we know being said (dat.pl) just (dat.pl) be  
 We abide by what we know are said to be just.

The conclusion is given by the rule (15)<sup>33</sup>. This states that there is an agreement rule that is not applied inside a given branch that holds both the head (i.e. source of features) and the tail (site of agreement), but it is applied after the first cycle of transformations. By this rule, both the regular case agreement and the case attraction would take place if its head was a subject by the end of the first transformational cycle of a sentence S. If the head is moved to any upper S', the agreement can still take place.

- (15) In surface structure, an adjective or participle must agree in case with the noun phrase that is was its derived subject at the end of the first cycle on the innermost S containing that adjective or participle.

Andrews (1971) departs from Lakoff's position. Departing from the basic AG case agreement in

<sup>31</sup> The contrast between local constraints and global ones is stated by the author as:

Incidentally, the notion of a derivational constraint is by no means new. Transformations are essentially local derivational constraints, in that they filter out those pairs of successive trees which are transformationally related from those which are not. Transformations state well-formedness conditions on configurations of corresponding nodes in two adjacent trees in a derivation. Global derivational constraints state well-formedness conditions on configurations of corresponding nodes in non-adjacent trees in a derivation. In other words, global rules may apply to trees which are widely separated.

See also the further theoretical discussion in Lakoff (1972a,b).

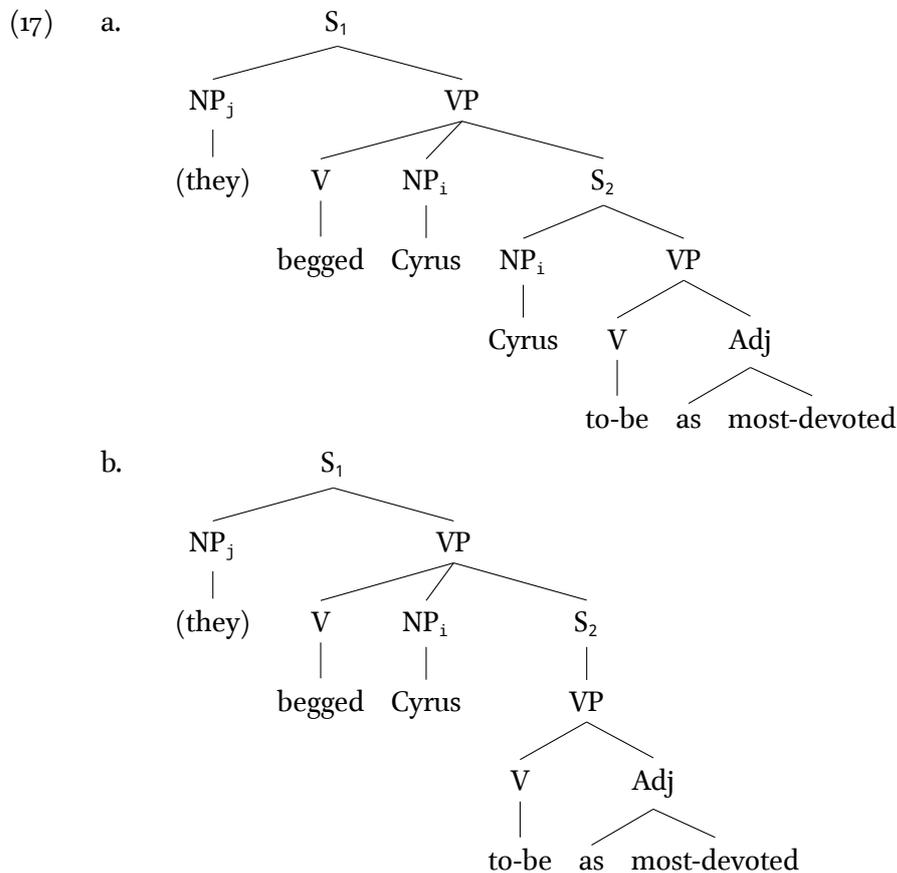
<sup>32</sup> Both examples in (14) are presented with the glosses given by the author (pp.628f.).

<sup>33</sup> Item (6) at Lakoff (1970, p. 629).

nominal sentences and periphrastic perfects, the author argues that the same kind of agreement should take place in sentences as (16). The exact example used by the author for his discussions is (16-b).

- (16) a. αὐτοῦ τε Κύρου ἐδέοντο ὡς προθυμοτάτου πρὸς τὸν πόλεμον γενέσθαι (Xen. Hell. 1.5.2)<sup>34</sup>  
 b. Κύρου ἐδέοντο ὡς προθυμοτάτου γενέσθαι  
 C.GEN the-begged as most-devoted.GEN to-be  
 ‘They begged Cyrus to be as devoted to them as possible.’

He further argues that this type of sentence must be generated by the rule of *Coreferential Complement Subject Deletion* (henceforth EQUI), transforming the structure (17-a) into (17-b). Case-agreement rules apply after EQUI.



Andrews (1971, 148f.) proposes an obligatory, postcyclic, iterative and mirror-image rule for Case-agreement that is applied if at the first cycle applying to the adjective in the embedded clause the oblique object of the matrix is the subject of the adjective, in his words (18)<sup>35</sup>:

<sup>34</sup> They begged Cyrus to be as devoted as possible to the war.

<sup>35</sup> Item (27) at Andrews (1971, p. 147).

- (18) A predicate modifier agrees with that NP which was its subject at the end of the first cycle applying to that predicate modifier.

There are nevertheless “*some distressing counterexamples*” to this rule, in which  $X_i$  and  $Y_i$  fail to agree in case, but not in gender and number. The rule above, he argues, might simply fail to apply when there is no attraction, as in (19), or that “*(they) are merely mistakes on the part of the authors*” (sic).

- (19) Ἀθηναίων ἐδέθησαν σφίσι βοηθοὺς γενέσθαι  
 A.GEN they-asked to-them helpers.ACC to-become  
 ‘They asked the Athenians to become their helpers.’ (Hdt. 6.100)

The example in (19) is exactly the kind of token we are working with. The rules (15) and (18) are problematic taking in account this kind of sentence, since by a transformational account, the innermost S containing the adjective or participle  $Y_i$  is the infinitive clause of  $V_{inf}$  and its subject was  $X_i$  since the first cycle, but, as we know, the agreement in this case is not even the default. A much more comprehensive discussion on problems of Lakoff and Andrews’ approach is given by Quicoli (1982).

Quicoli (1982, 105ff.) argues that the conclusions of Lakoff (1970) and Andrews (1971) are “*the result of an empirically wrong analysis given to the Greek data*”.<sup>36</sup> He tries to reconcile the data of AG and a transformational account of agreement in general by including in his discussion Andrews’ “*distressing counterexamples*”.

- (20) ... [ ...  $V_m$  — X [ ... Y —  $V_{inf}$  ] ]

The arguments for dismissing the “global constraints” are based on the difficulties of both (15) and (18) to give a good account of the facts below for a structure as (20):

1. If X is an oblique argument of  $V_m$ , both the constructions below are possible, Y being a noun, adjective or participle:
  - a) X (DAT/GEN) — Y (DAT/GEN)
  - b) X (DAT/GEN) — Y (ACC)
2. If  $V_m$ ’s subject is coindexed to X and to Y, and X is an oblique argument of  $V_m$ , only 2a and 2b are possible, while 2c is not:<sup>37</sup>
  - a) X (DAT/GEN) — Y (DAT/GEN)
  - b) X (DAT/GEN) — Y (NOM)

<sup>36</sup> Curiously enough, most of Quicoli’s work is devoted to discuss the system of infinitive complementation in Portuguese, but the whole last chapter of the book is dedicated to Case Agreement in AG.

<sup>37</sup>  $V_m$  could be here σύννοιδα or συγγιγνώσκω.

- c) \* X (DAT/GEN) — Y (ACC)
3. If  $V_m$  is  $\lambda\alpha\nu\theta\acute{\alpha}\nu\omega$ , you could only have a construction like 3a, but 3b is impossible:
- a) X (ACC) — Y (NOM)
- b) \* X (ACC) — Y (ACC)

In each of these cases, the rules would either predict only one option to be grammatical or predict that an ungrammatical construction to be grammatical.

Quicoli's account concludes that CASE AGREEMENT and CASE ATTRACTION should be analysed as two different transformational rules, the first being cyclic and obligatory and the later being post-cyclic and non-obligatory. I present the rules (21) and (22) as written by Quicoli (1982, p. 163).

The CASE AGREEMENT rule (21) states that an adjective, participle, or predicative nominal when unmarked for case, or marked by a Nominative or Accusative case receives  $\alpha$ -case during the cycle if it is co-indexed to another NP that has the  $\alpha$ -case if this NP is the subject of the sentence.

(21) *Case Agreement: Obligatory (cyclic)*

$$\left\{ \begin{array}{l} \textit{Adjective} \\ \textit{Participle} \\ \textit{Pred.Nom.} \end{array} \right\} \rightarrow [\alpha \textit{case}]/(X) - \left[ \begin{array}{c} \textit{NP} \\ i \\ \alpha \textit{case} \end{array} \right] Y \left( \left( \left( \left[ \begin{array}{c} -\textit{case} \\ i \end{array} \right] \right) \right) \right) * Z$$

where NP is a subject.

Oppositely, the CASE ATTRACTION rule could optionally apply after the end of the transformational cycle. The rule states that an adjective, participle, predicate nominal, or *wh*- receives  $\alpha$ -case if it is co-indexed to a NP that has the  $\alpha$ -case only if this case is neither Nominative or Accusative:

(22) *Case Attraction: Optional (post-cyclic)*

$$\left\{ \begin{array}{l} \textit{wh-} \\ \textit{Adjective} \\ \textit{Participle} \\ \textit{Pred.Nom.} \end{array} \right\} \rightarrow [\alpha \textit{case}]/X - \left[ \begin{array}{c} \textit{NP} \\ i \\ \alpha \textit{case} \end{array} \right] Y \left( \left( \left[ i \right] \right) \right) * Z$$

$$\textit{Condition} : \textit{NP} \neq \left\{ \begin{array}{l} \textit{Nom} \\ \textit{Acc} \end{array} \right\}$$

These rules don't seem to explain the phenomenon at all, specially since the absence of obligatoriness in (22), i.e. CASE ATTRACTION is not further discussed, leaving the problem as it stand

before. But there is also a minor empirical problem with Quicoli's account, namely the account of sentences with the main verb *σύννοια*. Quicoli (1982, 150ff.) assumes that there is a non-finite clause in the sentences (23) that allow the CASE MARKING rule to attribute Accusative to the participle.

- (23) a. *σύννοια* *ἐμαυτῶ* *εὖ* *ποιήσας*  
 I-am-aware-of myself (Dat) well having-done (Nom)  
 '(I-Nom) am aware of myself (Dat) having-done (Nom) well.'
- b. *σύννοια* *ἐμαυτῶ* *εὖ* *ποιήσαντι*  
 I-am-aware-of myself (Dat) well having-done (Dat)  
 '(I-Nom) am aware of myself (Dat) having-done (Dat) well.'
- c. \**σύννοια* *ἐμαυτῶ* *εὖ* *ποιήσαντα*  
 I-am-aware-of myself (Dat) well having-done (Acc)  
 '(I-Nom) am aware of myself (Dat) having-done (Acc) well.'

The base of both constructions would be (24-a), from which (24-b) would be generated by CASE MARKING. In this transformation, the nominative would be attributed to the subject NP, the dative to the oblique object NP and accusative to the participle, this would result in a sentence as (23-c), but there are still obligatory rules to be applied and that would explain why it is an ungrammatical construction. Still during the cycle, (24-c) is generated by CASE AGREEMENT (21), thus the participle *poiēsas* surface in the same case as the NP subject of the sentence to which it is co-indexed, which is the equivalent to (23-a). At this point the cycle is complete and the CASE ATTRACTION rule (22) may or may not apply. If it thus, the result is (24-d), equivalent to (23-b).

- (24) a. BASE STRUCTURE  
 $[s_0 \text{ Ii} \text{ — am-aware-of — Ii } [s_1 \text{ Ii} \text{ — having-done-well} ] ]$
- b. CASE MARKING  
 $[s_0 \text{ Ii} \text{ — am-aware-of — Ii } [s_1 \text{ having-donei — well} ] ]$   
 Nom Dat Acc
- c. CASE AGREEMENT (obligatory)  
 $[s_0 \text{ Ii} \text{ — am-aware-of — Ii } [s_1 \text{ having-donei — well} ] ]$   
 Nom Dat Nom
- d. CASE ATTRACTION (non-obligatory)  
 $[s_0 \text{ Ii} \text{ — am-aware-of — Ii } [s_1 \text{ having-donei — well} ] ]$   
 Nom Dat Dat

This account is problematic because it assumes that the accusative is being attributed to the participle by the Case Marking rules on grounds of non-finiteness. The necessity for such Case Marking in non-finite sentences is empirically explained by a sentence that is only seen in Kühner and Gerth

(1898, §481.3 Anmk.3): (25); in which the place of the expected *oblique* is occupied by an accusative. This example seems to have been created by the grammarians and I could not find any similar one in which you would have the same reading, i.e. in which the participle is read as a predicative participle.

(25) σύννοιδα σε εὖ ποιήσαντα  
 I-am-aware-of you (Acc) well having-done (Acc)  
 '(I-Nom) am aware that you (Acc) have done (Acc) well.'

What is being assumed as non-finiteness by the author and how this interfere in the CASE MARKING transformation is not overtly stated, especially when the empirical explanation for the rule is a sentence without empirical evidence of its existence. In a similar fashion, the relative attraction is mixed with the attraction in infinitives without an account on the details of the phenomenon.

What seems to be the main question over case attraction for Lakoff (1970), Andrews (1971) and Quicoli (1982) is the point of the derivation in which the case agreement takes place and whether or not there is a single agreement rule or two of them. In either case, the agreement between elements placed in nodes considerably apart from each other is somehow optional and not caused by different underlying structures.

### 1.2.3.2 Control, Case and Agr: Minimalist assessments:

Although discussing case attraction only marginally, the assessments given by Tantalou (2003) and Spyropoulos (2005) are important to understand the minimalist account of case assignment on subjects of infinitive clauses in AG, which is fundamental to later understand their views on agreement. The main question for them is whether or not the AcI (*accusativus cum infinitivo*) constructions are due to an ECM (Exceptional Case Marking) or to another process taking place in the derivation. Unlike Lakoff (1970), Andrews (1971) and Quicoli (1982), they see the case agreement not as a self contained process, but as a result of a more general process of case assignment.

Both authors come to the conclusion that the infinitive sentences have a null complementizer head that is the source of the accusative case in AcI constructions.<sup>38</sup> I will focus on Spyropoulos' account because it follows Tantalou's and gives some more precise explanations on the whole process.

Both authors Tantalou (2003) and Spyropoulos (2005), together with Sevdali (2007, 2013), assume that the accusative subject of AG infinitives is not due to ECM, because AG infinitive clauses must be CPs. The main reasons for this are:

1. AcI and ὅτι-clauses can be coordinated, so there must be a CP in AcI (26-a), assuming that any given phrase XP can only be coordinated to another phrase XP;

<sup>38</sup> For details on the case assignment from a null CP head, see Stowell (1982). For similar conclusions for AcI structure in Latin, see Bolkestein (1976), Pillinger (1980) and Cecchetto and Oniga (2002).

2. AcI can appear as a clausal associate to an it-expletive (26-b);
3. AcI can appear as subjects (26-c);
4. AcI can be complements of verbs with no case assigning properties (26-d);
5. the AcI syntax is maintained in the passivization that turns a *verba dicendi* impersonal (26-e);
6. AcI might be complement of a noun (26-f).

- (26) a. ὑμᾶς πάντα εἰδέναι ἡγοῦμαι ὅτι ἐγὼ μὲν ὀρθῶς λέγω  
 you-ACC.PL all-ACC.PL know-INF.PRES think-1SG that I-NOM PRT correctly say-1SG  
 τοῦτον δὲ σκαιὸν εἶναι  
 he-ACC prt unkind be-INF.PRS  
 I think you all know that I, on one hand, speak correctly, while he, on the other hand, is unkind.<sup>39</sup>
- b. χρῆν καὶ τοὺς ἄλλους ποταμοὺς ... ὁμοίως πάσχειν  
 was.necessary and the other rivers-ACC similarly suffer-INF.PRS  
 The other rivers should also suffer in the same way (Hdt. 2.20)<sup>40</sup>
- c. Τρῶας ἄλγεα πάσχειν οὐ νήμεσις (ἐστίν)  
 Trojans-ACC suffering-ACC suffer-INF.PRS NEG just-NOME (is)  
 It's not right for the Trojans to suffer in this way.<sup>41</sup>
- d. συνέβη ... Γέλονα νικᾶν Ἀμίλκαν  
 happened-3SG Gelon-ACC defeat-INF.PRS Amilcas-ACC  
 It happened that Gelon defeated Amilcas. (Hdt. 7.166)<sup>42</sup>
- e. ἐστουτον τὸν χώρον λέγεται ἀφίκεσται τὸν στρατόν  
 in this the place-ACC say-PASS.3SG arrive-INF.AOR the army-ACC  
 It is said that the army has arrived in this place.<sup>43</sup>
- f. ἡ ἀγγελία τοὺς Ἕλληνας τὰ ὅπλα τίθεσθαι  
 the announcement-NOM the Greeks-ACC the weapons-ACC put-INF.MED.PRS  
 the announcement that the Greeks hand over the weapons ...<sup>44</sup>

The prediction that each of the sentences above prove that Infinitive Clauses in AG are CPs relies on the generative and minimalists theories that the author uses as framework, and he does not explain precisely why they should hold in AG.

There are a couple of other reasons that make Spyropoulos (2005) drop the ECM hypothesis, one of which being constructions of case attraction, since the variation between attraction and non-attraction would be impossible in such case. Besides the ECM hypothesis, Spyropoulos (2005) also

<sup>39</sup> Ex. (19) in Spyropoulos (2005, p. 304).

<sup>40</sup> Ex. (20) in Spyropoulos (2005, p. 304).

<sup>41</sup> Ex. (21) in Spyropoulos (2005, p. 305).

<sup>42</sup> Ex. (22) in Spyropoulos (2005, p. 305).

<sup>43</sup> Ex. (23-a) in Spyropoulos (2005, p. 305).

<sup>44</sup> Ex. (26) in Spyropoulos (2005, p. 306).

dismisses a “tense-hypothesis”, according to which the subject of the infinitive sentence in AG would be case assigned because infinitives have tense projections associated to it. The INFL (inflection, composed of Tense and Agree) projection of a clause would produce a set like the one below:

- (27) a.  $[+T, +AGR] \rightarrow$  nominative case (finite clauses)  
 b.  $[-T, -AGR] \rightarrow$  no case (non-finite clauses)  
 c.  $[+T, -AGR] \rightarrow$  accusative case (AG infinitives)  
 d.  $[-T, +AGR] \rightarrow$  nominative case (Portuguese infinitives)<sup>45</sup>

The main counterargument for this is the fact that not all the morphological forms of a given AG verb can be used with any infinitive governing verb. *Verba dicendi* allow any tense for its infinitive complement and this has a full temporal reading, but some verbs are specifically future oriented, in such a way that the infinitival tense can only be read as aspect and not as a tense proper. You also see verbs whose infinitives can not appear in any tense, being lexically selected. Spyropoulos (2005, p. 311) calls them Free Infinitives, Dependent Infinitives and Anaphoric Infinitives:

- (28) a. Free Infinitives
- (i) ἔλεγον τὸν Κύρον ποιεῖν τοῦτο  
 said-3pl the Cyrus-ACC.SG do-INF.PRS this-ACC  
 They were saying that Cyrus is doing this.
- (ii) ἔλεγον τὸν Κύρον ποιήσῃν τοῦτο  
 said-3pl the Cyrus-ACC.SG do-INF.FUT this-ACC  
 They were saying that Cyrus will do this.
- (iii) ἔλεγον τὸν Κύρον ποιήσαι τοῦτο  
 said-3pl the Cyrus-ACC.SG do-INF.AOR this-ACC  
 They were saying that Cyrus did this.
- (iv) ἔλεγον τὸν Κύρον πεποιηκέναι τοῦτο  
 said-3pl the Cyrus-ACC.SG do-INF.PRF this-ACC  
 They were saying that Cyrus have done this.
- b. Dependent Infinitives
- (i) τοῖς ἄλλοις πάσι παρήγγελλεν ἐξοπλίζεσθαι /  
 the other-DAT.PL all-DAT.PL was.ordering give.arms-INF.MED.PRS /  
 ἐξοπλίσασθαι / ἐξόπλιθαι  
 MED.AOR / MED.PRF  
 He was ordering all the others to take the arms.
- (ii) \*τοῖς ἄλλοις πάσι παρήγγελλεν ἐξοπλίσεσθαι  
 the other-DAT.PL all-DAT.PL was.ordering give.arms-INF.MED.FUT  
 \* He was ordering all the others to take the arms.
- c. Anaphoric Infinitives

<sup>45</sup> Schema (37) in Spyropoulos (2005, p. 301).

ἀρχομαι ἐπαινεῖν / \*ἐπαινήσειν / \*ἐπαινῆσαι  
 start-1SG praise-INF.PRES / INF.FUT / INF.AOR

I start praising.

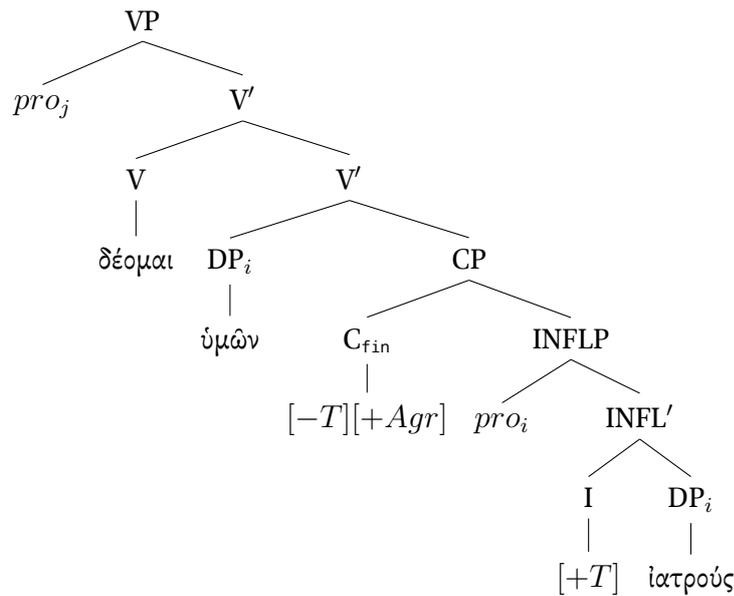
This leaves only the CP analysis possible. The rather complex system of infinitive clauses is thus defined by Spyropoulos (2005) in a series of assumptions and *if-statements*:

1. the INFL head of infinitives in AG is  $[+T, -AGR]$ : since the head is  $[-AGR]$ , the verb can not establish a checking relation with  $Subj_{inf}$ ;
2.  $C_{fin}$  can be specified for tense or not:
  - a) if it is specified for tense,  $C_{fin}$  has a feature-set  $[T]$ :
    - i.  $C_{fin}$  must be also specified by a non interpretable set of subject-agreement features  $[Agr]$ .
    - ii. if  $C_{fin}$  is specified for tense, i.e. has a  $[T]$  feature, its tense features can be interpretable or not:
      - A. when the  $[T]$  features are not interpretable, a checking relation with INFL  $[T]$  is necessary and thus sentences with a full sequence of tenses are produced, and it is a *free-infinitive*.
      - B. when the  $[T]$  features are interpretable, its temporal properties are fixed by the semantic and selectional properties of the matrix predicate, and it is a *dependent-infinitive*.
  - b)  $C_{fin}$  does not contains a feature-set  $[T]$ , and it is an *anaphoric infinitive*.

For the attraction (and case assignment in general), the most important assumption is 2(a)i, because once the  $C_{fin}$  is specified by Agreement but the features of  $[Agr]$  are not interpretable, a checking relation with a nominal item in its domain is established, what allows it to assign case to  $Subj_{inf}$ . It seems that with this, Spyropoulos (2005) means that if it is not morphosyntactically clear to which node the agreement relation is established, which would turn the sentence ungrammatical and thus forces a value checking process by which the CP probes the sentence for a fitting subject. If  $C_{fin}$  is specified for agree,  $[+Agr]$ , it checks its values with a null-subject *pro*, it attributes accusative case to it, and then the predicate modifiers agree with it, as in (29); although circular, an infinitive CP with a *pro*, even if phonologically empty do not need to probe outside its branch and checks agree inwards. Conversely, if  $C_{fin}$  is underspecified for agree,  $[-Agr]$ , there must be appear a control structure between the matrix object and a caseless PRO, as in (30); which means that the CP structure does not have a pronominal empty element able to bear features like case and thus the CP probes on its matrix for a suitable subject. It is nevertheless unclear why the same  $C_{fin}$  could be either specified or underspecified, so that it could either allow for case attraction to triggers or not, and the argument goes in a circular fashion.

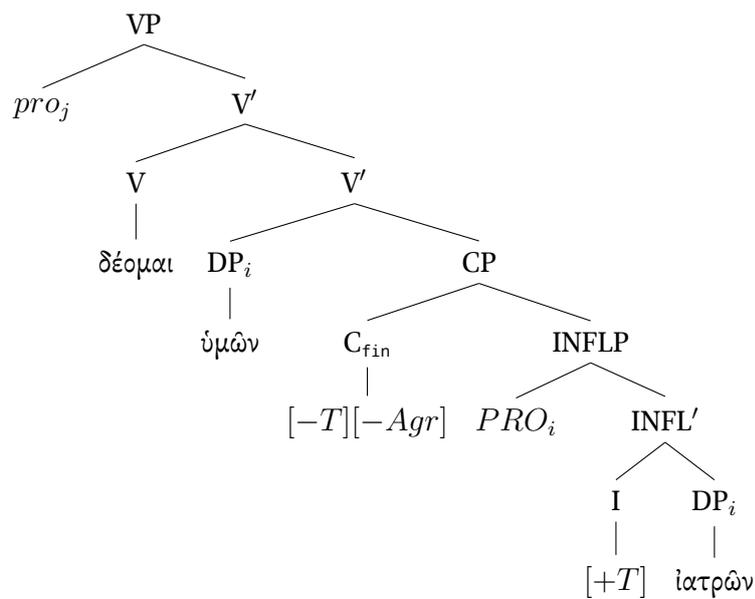
(29) a. δέομαι ὑμῶν ἰατρούς γενέσθαι.

b.



(30) a. δέομαι ὑμῶν ἰατρῶν γενέσθαι.

b.



It seems to be impossible to devise a test to check if a given sentence has the structure of (29) or (30) without resorting to the presence of case attraction, so those two structures are hardly good enough to predict the attraction. Although empirically dubious, Spyropoulos' hypothesis predicts an empirically verified fact. If there is a *pro* inside the infinitive CP, the attraction does not take place, because *pro* is feature complete and CP is specified for [Agr]. Sentences in which a pronominal element is overt, as (31), are not attested with attraction. In other words, pronominals in general are not expected to host case attraction on infinitive clauses.

(31) ἡμῖν γὰρ δοκεῖ πᾶσιν, ἐπεὶ περ παρεσκευάσαμεθα, μὴ ἐπειδὴν ἐμβάλωσιν οἱ πολέμιοι εἰς τὴν χώ-

ραν, τότε μάχεσθαι, μηδ' ἐν τῇ φιλικῇ καθημένους ἡμῶς ὑπομένειν, ἀλλ' ἵεναι ὡς τάχιστα εἰς τὴν πολεμίαν.

We are all agreed that, inasmuch as we are quite ready, it is best not to sit down here in a friendly country and wait till the enemy have invaded your territory before we begin to fight, but to go as quickly as possible into the enemy's country. (Xen. *Cyrop.* 3.3.14)

Finally, in a similar vein, Paulsen (2014) assumes that the variation between attracted and non-attracted constructions *appears to be a clear case of optionality as in all other pertinent respects the sentences are equivalent* and that the difference between a sentence as (32-a) and (32-b) is that in the first sentence the Y probes the infinitival subject for Case because it is an adjective that is “radically  $\Phi$ -incomplete”, while in the second sentence for *some reason*, the Y predicate “does not probe  $Subj_{inf}$  and is assigned accusative case by default or by  $\nu$ , or it may be that the inherently case marked noun is not  $Subj_{inf}$  and the predicate does in fact agree with the unpronounced  $Subj_{inf}$ ”.

- (32) a. νῦν [ $Subj_{inf}$  σοι] ἔξεστιν, ὦ Ξενοφῶν, [Y ἀνδρὶ] γενέσθαι  
 b. ὡς συμφέρει [ $Subj_{inf}$  αὐτοῖς] [Y φίλους] εἶναι μᾶλλον ἢ πολεμίους

This does not allow us to explain any aspect of the distribution of agreement between matrix oblique objects and infinitive predicates in AG.

The main trend between the approaches to case attraction on transformational and generative frameworks is to assume case attraction as an evidence of some kind of structure, although this phenomenon itself remains unaccounted for. Their main intuition is in any case interesting: there should be some kind of underspecification of the subject in the infinitive clauses that provokes a agreement-checking mechanism that eventually finds either a clause internal *pro* or a clause external controller.

### 1.3 Summary

With the structural frame and the previous assessments in mind, we will proceed with the discussion of how we obtained and analysed our data in chapter 2. In chapter 3 we present the quantitative analyses made with our corpus and check the hypotheses gathered in the previous chapter. We further discuss the evidences and their linguistic relevance in chapter 4, and conclude with the next necessary steps for our research and the syntactic research of AG texts in general in chapter 5. The database is presented in Appendix A.

## 2 Methodology

This chapter discusses the process by which we collected, structured, and analysed our data.

### 2.1 Data collection

All data comes from the editions available in the TLG database (PANTELLA, n.d.): i. Herodotus: Legrand (1932/1968); ii. Xenophon: Marchant (1904) iii. Plato: Burnet (1900/1907) and Duke et al. (1995). Other editions were consulted to verify details on the text transmission and different *lectiones*: 1. Herodotus: Hude (1927), Rosén (1987, 1997), and Wilson (2015); 2. Xenophon: Gemoll (1968), Dindorf and Thalheim (1914), Hude (1934), Bizos (1971), Lipka (2002) and Keller (2012); 3. Plato: Chambry (1932) and Slings (2003).

For obtaining the sentences that provided the proper environment for case attraction, we first listed all the verbs that had the annotation *c.gen.pers. et inf* or *c.dat.pers. et inf* or equivalents in LSJ (LIDDELL; SCOTT; JONES, 1996). This resulted in the following list: 1. ἀνίημι; 2. δέομαι; 3. δοκέω; 4. ἐγ-χωρέω; 5. ἐκγίγνομαι; 6. ἔνειμι; 7. ἐντέλλω; 8. ἔοικα; 9. ἐξεστί; 10. ἐπαγγέλλω; 11. ἐπαινέω; 12. ἐπιβάλλω; 13. ἐπισκήπτω; 14. ἐπιτάσσω; 15. ἐπιτέλλω; 16. ἐπαινέω; 17. ἵκετεύω; 18. καταδικάζω; 19. κηρύσσω; 20. παραγγέλλω; 21. παραιτέω / παραιτέομαι; 22. παραμυθέομαι; 23. παρίημι; 24. πιστεύω; 25. πόρω; 26. πρέπει; 27. προβάλλω; 28. προξενέω; 29. προσδέομαι; 30. προσήκει; 31. προστάσσω; 32. προσχρήζω; 33. προτίθημι; 34. σημαίνω; 35. συγγιγνώσκω; 36. συμβαίνω; 37. συμβουλεύω; 38. συμπίπτω; 39. ὑπάρχω; 40. ὑφίημι; 41. χρῆζω.

If the verbs had specific morphological conditions for the DcI (*dativus cum infinitivo*) or GcI (*genetivus cum infinitivo*) constructions to appear, the queries would include those morphological criteria in the Lemma Search available at TLG (ex. δοκέω only in the impersonal construction) and Morphologic Search available at Diogenes (HESLIN, 2007).

We produced lists of all the occurrences of those verbs in Herodotus, Plato and Xenophon and then selected all sentences with the structure (1) (=5) at chapter 1):

$$(1) \quad V_m - X_i - Y_i - V_{inf}$$

The data was tabulated in a *.csv* dataframe with each token being represented as a row and its features represented as columns. While most of the features were annotated by hand, since our data came from digital text documents and not directly from a corpus, the morphological information and eventual lemmatization was produced using our own Python (VAN ROSSUM; DRAKE, 2009) script, with help of the Classical Language Toolkit library (JOHNSON et al., 2014–2019), and the Diorisis an-

notated corpus (VATRI; MCGILLIVRAY, 2018). The result of this script was checked for errors in the automated annotation.

The annotation of most features is fairly straightforward, but both data selection and annotation of some of the features rely on theoretical assumptions. For those choices, we present in section 2.3 the rationale which guided our work.

### 2.1.1 Other possibilities

The procedure we took to collect the data here presented is quite time consuming. We could also have relied in the treebanks available today for AG, namely: 1. the *Pragmatic Resources in Old Indo-European Languages* (PROIEL) data for the Greek (New Testament, part of Herodotus' Histories and Sphrantzes' Chronicles);<sup>1</sup> 2. the *Ancient Greek and Latin Dependency Treebank/Perseus* (AGLDT);<sup>2</sup> 3. Universal Dependencies versions of PROIEL and AGLDT.<sup>3</sup> 4. the Diorisis Ancient Greek Corpus.<sup>4</sup> Each of those databases, excluding the Diorisis, can be queried by different search systems, either project internal software or third-party solutions:<sup>5</sup> 1. PROIEL's Syntacticus;<sup>6</sup> 2. AGLDT's Structural Search (incomplete corpus);<sup>7</sup> 3. TüNDRA - *Tübingen aNnotated Data Retrieval Application*;<sup>8</sup> 4. INESS - *Infrastructure for the Exploration of Syntax and Semantics*.<sup>9</sup>

Although both projects and their port to Universal Dependencies are very reliable and consistent, the texts we are studying are not fully accounted for by them, making us still dependent of reading the collected data.

## 2.2 Data structuring

Our database is composed by 120 individuals (rows) with 45 entries (columns) for each. Every column represents a feature of the individual sentences or features of part of that sentence.

1. passage: text of the sentence treated as a token.

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<sup>1</sup> Haug and Jøhndal (2008); and Haug, Eckhoff, et al. (2009); and Haug, Jøhndal, et al. (2009); and Eckhoff et al. (2018).

<sup>2</sup> Bamman and Crane (2011); and Celano, Crane, and Almas (2014).

<sup>3</sup> <https://universaldependencies.org/>

<sup>4</sup> Vatri and McGillivray (2018).

<sup>5</sup> At the present date, Diorisis has launched a search engine by Alessandro Vatri for Windows and OSX machines (<https://www.crs.rm.it/diorisissearch/>).

<sup>6</sup> Shared with other projects; <http://syntacticus.org/>

<sup>7</sup> <http://iliados.com/>

<sup>8</sup> Hinrichs, Hinrichs, and Zastrow (2010); and CLARIN-D/SfS-Uni. Tübingen (2012).

<sup>9</sup> <http://clarino.uib.no/iness>; see Rosén et al. (2012).

2. attraction: True/False value that annotates whether or not  $Y_i$  has the same case as  $X_i$ .
3. author: text entry containing “Herodotus”, “Plato” and “Xenophon” as values.
4. text: text entry containing the name of the texts of Herodotus, Plato and Xenophon in which the sentence occurs.
5. local: a alphanumeric value that points to which paragraph in the standard editions the sentence occurs.
6. copula: True/False value that annotates whether or not  $V_{inf}$  corresponds to a copula-like verb. The  $V_{inf}$  that correspond to True are γίγνεσθαι, γίνεσθαι, γενέσθαι, εἶναι, φανήναι.
7. dialect: text entry containing “attic” and “jonic” as values.
8. dialogue: True/False value that represents the genre of the text from which the token was extracted. All the texts from Plato mark True in this value, while only Xenophons Memorabilia, Hiero, and Oeconomicus mark True.
9. v1: text value with the precise form of the  $V_m$  of the sentence.
10. x: text value with the precise form of the  $X_i$  of the sentence.
11. y, y2, y3: text value with the precise form of the  $Y_i$  of the sentence. A y2 and y3 denote a  $Y_i$  that comes after a first one.
12. v2: text value with the precise form of the  $V_{inf}$  of the sentence.
13. v1\_index, x\_index, y\_index, v2\_index: numeric value corresponding to the position of the  $V_m$ ,  $X_i$ ,  $Y_i$ , and  $V_{inf}$ . If any of these is the first item of the sentence, its index is 0, if the second, 1 and so forth.<sup>10</sup>
14. distance\_v1v2, distance\_xy, distance\_yv2: numeric value of the distance between  $V_m$  and  $V_{inf}$ ,  $X_i$  and  $Y_i$ , and  $Y_i$  and  $V_{inf}$ , calculated by the difference between their indexes.
15. v1\_lemma: lemmatized form of  $V_m$  used for the query.
16. v1\_analysis: morphological analysis of  $V_m$  obtained from the annotated corpus Diorisis (VATRI; MCGILLIVRAY, 2018).
17. v1\_tense: tense information from  $V_m$ .
18. personal: True/False value that asserts whether or not  $V_m$  is personal.
19. poss\_verb: True/False value that asserts whether or not  $V_m$  denotes a possibility / has a quasi-modal reading. See subsection 3.3.4 for details.
20. second\_attraction, third\_attraction: True/False value that asserts the agreement between  $X_i$  and y2/y3.
21. y\_analysis, y2\_analysis, y3\_analysis: morphological analysis of  $Y_i$  (i.e. y, y2, y3) also from Diorisis.
22. y\_POS: part of speech analysis of  $Y_i$  (y) also from Diorisis.
23. y\_number: text value of the number of  $Y_i$ : values “sg” and “pl”.
24. y\_adjectival: True/False value that asserts whether or not  $Y_i$  is adjectival (participles included).

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<sup>10</sup> Those values were obtained by a Python function using the passage and the values v1, x, y and v2.

25. `y_adj`: True/False value that asserts whether or not  $Y_i$  is an adjective (participles excluded).  
 26. `y_part`: True/False value that asserts whether or not  $Y_i$  is a participle.

## 2.3 Qualitative analyses: conceptual assumptions

### 2.3.1 Selecting data points

As we briefly discussed in [chapter 1](#), case attraction takes place in an environment where a main verb  $V_m$  governs an oblique object  $X_i$  and an infinitive clause headed by  $V_{inf}$ , and an predicative  $Y_i$  is embedded in the infinitive clause while being co-indexed with  $X_i$ . In a nutshell, said environment corresponds to a structure like (2).

$$(2) \quad [Matrix \ V_m \ X_i \ [Infinitive \ Y_i \ V_{inf} \ ]]$$

Since it is of our interest to remain sufficiently theory neutral, the split into clauses represents only the fact that  $V_m$  governs another clause, without taking in consideration the phrasal category represented by it. As seen above, in the generative framework it is generally considered that AG embedded infinitive clauses are headless CPs (complementizer phrases) with varying degrees of permeability, and the tendency is to use attraction as a proxy for the specification of the type of CP in question, which leads to a circular argument, where the *attraction* — or lack of thereof — is both the result of the degree of permeability of CP, and the only element that clearly shows the said degree of permeability. Since our enquire is on the distribution of attraction, it is not of our best interest to dig into the theoretical distinction of types of CP, being enough to say that the relation between  $V_m$  and the clause headed by  $V_{inf}$  is that of government.

As for whether  $V_m$  governs the infinitive clause as a whole or the infinitive itself, suffice to say that there is a great degree of variation in the complexity of the arguments of  $V_{inf}$  across the examples, and that they might be swapped by neuter demonstrative or relative pronouns. The substitution of the infinitive clauses by pronouns also shows that  $Y_i$  is embedded in it, since no predicative is present when the argument of  $V_m$  is a pronoun.

In most cases where there is agreement between  $X_i$  and a *participle*  $Y_i$ , the difference between a matrix embedded predicative and a infinitive clause embedded one, i.e. between (3-a) and (3-b), is impossible to decide on formal grounds. The choice in these cases rely on the semantics of the sentence. The verbs that might occupy the position  $V_m$  all semantically project the action of the infinitive clauses to the future, in the sense of an order, advice or possibility, so any participle embedded in this infinitive clause must be read inside the temporal frame of  $V_{inf}$ . In short, one must evaluate if the participle  $Y_i$  denotes an action projected to the *future* of  $X_i$ , and if it does, the odds are that it should be embedded in the infinitive clause, as we did in [chapter 1](#), example (10) and (11) repeated bellow.

- (3) a. [Matrix  $V_m$   $X_i$  [Infinitive  $Y_i$   $V_{inf}$  ] ]  
 b. [Matrix  $V_m$   $X_i$   $Y_i$  [Infinitive  $V_{inf}$  ] ]
- (4) a. ἀφῆκε μοι ἐλθόντι πρὸς ὑμᾶς λέγειν τ-ἀληθῆ.  
 allow.AOR.3SG me.DAT.SG coming.DAT.SG prep you.ACC.PL say.PRES.INF the-truth.ACC.SG  
 He allowed me to come in front of you tell the truth.  
 ? He allowed me after I came in front of you tell the truth.
- b. ὥστε οὐκ ἐδόκει αὐτῷ δυνατόν εἶναι ἀμαχεῖ  
 adv neg seem.IMPF.3SG him.DAT.SG possible.ACC.SG be.PRES.INF without-fight.INDCL  
 παρελθεῖν, λογιζομένῳ (...)  
 go.AOR.INF thinking.DAT.SG  
 Since he thought that he himself could not do the crossing without fight, (and he thought that) considering (...)  
 ? Since he thought that he himself could not do the crossing without fight (while) considering (...)

The sentences were included if the most natural reading was as in (4-a), i.e. when it was contextually more reasonable to assume that the participle denoted a future or potential action in relation to  $V_m$ . Those sentences which the time framing of the participle was dependent only on  $V_m$  and not on  $V_{inf}$ , as in (4-b), were excluded.

### 2.3.2 Co-indexation

This concept subsumes the idea that series of nominal, pronominal and adjectival words might share a semantic reference. The semantic reference is discourse internal and do not reflect the empiric world necessarily (although it usually does so). This concept is needed for two reasons. First and foremost, any agreement pattern we want to observe can only occur if, and only if, two words are co-indexed. Secondly, there is a group of examples in which attraction seems to be blocked, namely when the  $X_i$  is a 1st person singular pronoun and  $Y_i$  is a plural participle in the context of a deliberation. There are just a few of such examples, presented in Table 1, hardly enough to generalize any correlation. We will include these sentences in our data due to the fact that all the examples bellow follow similar patterns of other data points whose main verb  $V_m$  is the impersonal  $\deltaοκεί$ , and metonymy “I” > “We” in the context presupposes a degree of co-referentiality. In any case, we include a boolean variable  $sg\_pl$  to account for any possible significant correlation that could exist with attraction due to change of grammatical number between  $X_i$  and  $Y_i$  in later studies that eventually depart from our database.

author	text	local	passage
Herodotus	Historiae	1 207	Νῦν ὦν μοι δοκίει διαβάντας προελθεῖν ὅσον ἂν ἐκείνοι ὑπεξίωσι, ἐνθεύτεν δὲ τάδε ποιούντας πειράσθαι ἐκείνων περιγενέσθαι (...) % τούτοισι ὦν τοῖσι ἀνδράσι τῶν προβάτων ἀφειδέως πολλὰ κατακόψαντας καὶ σκευάσαντας προθεῖναι ἐν τῷ στρατοπέδῳ τῷ ἡμετέρῳ δαίτα, πρὸς δὲ καὶ κρητήρας ἀφειδέως οἴνου ἀκρήτου καὶ σιτία παντοῖα.
Herodotus	Historiae	3 62	Νῦν ὦν μοι δοκίει μεταδιώξαντας τὸν κήρυκα ἐξετάζειν εἰρωτῶντας παρ' ὅτεο ἤκων προαγορεύει ἡμῖν Σμέρδιος βασιλέος ἀκούειν.
Herodotus	Historiae	4 134	Νῦν ὦν μοι δοκίει, ἐπεὶ τὰ τάχιστα νύξ ἐπέλθη, ἐκκαύσαντας τὰ πυρὰ ὡς ἐώθαμεν καὶ ἄλλοτε ποιέειν, τῶν στρατιωτῶν τοὺς ἀσθενεστάτους ἐς τὰς ταλαιπωρίας ἐξαπατήσαντας καὶ τοὺς ὄνους πάντας καταδήσαντας ἀπαλλάσσεσθαι, πρὶν ἢ καὶ ἐπὶ τὸν Ἴστρον ἰθῦσαι Σκύθας λύσοντας τὴν γέφυραν ἢ καὶ τὴν Ἴωσι δόξαι τὸ ἡμέας οἶόν τε ἔσται ἐξεργάσασθαι.
Xenophon	Anabasis	4 8 12	ἀλλὰ μοι δοκεῖ ὀρθίους τοὺς λόχους ποιησαμένους τοσοῦτον χωρίον κατασχέειν διαλιπόντας τοῖς λόχοις ὅσον ἔξω τοὺς ἐσχάτους λόχους γενέσθαι τῶν πολεμίων κερμάτων.
Xenophon	Anabasis	7 1 31	καὶ νῦν μοι δοκεῖ πέμψαντας Ἀναξιβίῳ εἰπεῖν (...).
Plato	Phaedo	86d	δοκεῖ μέντοι μοι χρῆναι πρὸ τῆς ἀποκρίσεως εἶτι πρότερον Κέβητος ἀκούσαι τί αὐτὸ ὅδε ἐγκαλεῖ τῷ λόγῳ, ἵνα χρόνου ἐγγενομένου βουλευσώμεθα τί ἐροῦμεν, ἔπειτα [δὲ] ἀκούσαντας ἢ συγχωρεῖν αὐτοῖς ἔάν τι δοκῶσι προσάδειν, ἐάν δὲ μή, οὕτως ἤδη ὑπερδικεῖν τοῦ λόγου.
Plato	Respublica	578d	δοκεῖ γάρ μοι δεῖν ἐννοῆσαι ἐκ τῶνδε περὶ αὐτοῦ σκοποῦντας.

Table 1 – Sentences with X<sub>i</sub> SG > PL

### 2.3.3 Agreement and Long-distance Agreement

In this work, we assume that case attraction is a particular kind of *agreement* that takes place in AG. This assumption is made to allow us to compare our phenomenon with possible similar ones across languages without having to mind idiosyncratic vocabulary like “attraction”, “assimilation” and others. To our knowledge, the framework to analyse agreement phenomena best suited to our needs, i.e. fairly theory neutral and based on distributional patterns, is Corbett’s textbook *Agreement* (2006), which we will follow for practical reasons. As a concept agreement should be understood as a feature matching process by which a *tail* or *target* takes one or more features from a *head* or a *controller*. The definitions given by Corbett (2006, 4f.) are handy:

We call the element which determines the agreement (say the subject noun phrase) the **controller**. The element whose form is determined by agreement is the **target**. The syntactic environment in which agreement occurs (the clause for instance) is the **domain** of agreement. And when we indicate in what respect there is agreement, we are referring to agreement **features**. (...)

Features are directly reflected in agreement. There can be other factors (like word order) which have an effect on agreement but are not directly reflected like features. Such factors are called agreement **conditions**. (...)<sup>11</sup>

Nevertheless, case is not a canonical feature used in agreement systems. The main reason behind it is the fact that it is not an inherent feature of the noun, but it is *imposed* by another syntactic element (generally a verb or preposition) or *selected* under semantic reasons (e.g. locatives in Sanskrit).<sup>12</sup> Constituency views on agreement can discard most of cases of case agreement by saying that case is assigned to the whole constituent and not to its parts, so that in  $\beta\lambda\acute{\epsilon}\pi\omega\ \tau\acute{\omicron}\nu\ \sigma\omicron\phi\rho\acute{\omicron}\nu\ \acute{\alpha}\nu\delta\rho\alpha$  “I see the wise man”, the accusative case is assigned to the whole constituent “the wise man” by government under the main verb “I see”. Corbett (2006, 133f.) presents these arguments against assuming case as an agreement feature, but also presents complicating examples in which the agreement clearly uses also case as an agreement feature in (5).

- (5) Sześć kobiet by-ł-o smutn-ych.  
 six[NOM] woman[PL.GEN] be-PST-N.SG sad-PL.GEN  
 Six women were sad (Polish, Corbett (2006, p. 134))

Also, case agreement of predicates (which is what one has in infinitive case attraction) is not typologically unknown (COMRIE, 1995), and might vary according to dialect, as in Basque (6), or without well defined reasons, as AG, Latin, and German (7), where the first construction is preferred over the second. Brugmann (1925) also shows evidence for Lithuanian and Old Church Slavonic.<sup>13</sup>

<sup>11</sup> Emphasis placed by the author.

<sup>12</sup> The *imposed* case is similar to what generative frameworks call *structural case*, and the *semantically selected* case is called *inherent case*. We will not adopt this terminology in this work, but for a formal assessment of case in this framework, see Bittner (1994) and Bittner and Hale (1996), which despite not being the standard generative account of case is to our knowledge the more intuitive and complete model for case systems.

<sup>13</sup> In Gothic and Classical Armenian we find one interesting example of agreement between obliques and predicates of infinitive clauses, both translations of New Testament, 1 Cor 7:10–11. The interesting factor is that these examples do not render exactly the same syntactical structure of the original text, and are also different from each other. First of all, in Greek (i-a), neither  $\gamma\upsilon\nu\acute{\alpha}\iota\kappa\alpha$  “woman” nor  $\acute{\alpha}\nu\delta\rho\alpha$  “man” agree with the oblique object  $\tau\omicron\iota\varsigma\ \gamma\epsilon\gamma\alpha\mu\eta\chi\acute{\omicron}\sigma\iota\nu$  “the married ones”, although both nouns are predicates co-indexed with the matrix’ object. In Gothic (i-b),  $\text{UENNI}$  *qenai* “woman” agrees in case (dative) with the oblique object of the main verb  $\text{ΨΛΙΜ ΛΙΠΓΞΜ ΗΛΓΤΛΜ}$  *paim liugom haftan* “those married”, while  $\text{ΛΒΛΝ}$  *aban* “man” doesn’t, staying in the accusative, despite the fact both are coordinated. Lastly, in Classical Armenian (i-c), both  $\text{կնոջ}$  (*knoĵ*) “woman” and  $\text{ամու}$  (*ain*) “man” agree with  $\text{կանամբաց}$  (*kanambeac’*) “married” in the dative. There are just a few examples of this kind of environment in the New Testament, so it is

- (6) a. Gizona-k ona izan behar du.  
the.man-ERG good.ABS to.be need has  
The man must be good. (Standard Basque, Comrie (1995, p. 46))
- b. Gizona-k ona-k izan behar du.  
the.man-ERG good.ERG to.be need has  
The man must be good. (Biscayan Basque, *ibid.*)
- (7) a. Laß mich dein Freund sein.  
let me.ACC your.NOM friend.NOM to-be.
- b. Laß mich deinen Freund sein.  
let me.ACC your.ACC friend.ACC to-be.  
Let me be your friend. (German, *ibid.*)

In sum, case agreement is a non-canonical type of agreement, generally restricted in comparison to gender, number and person agreement, and to domains where the target is a predicative of any sort. It also happens in doublet systems as in the examples (6) and (7) with varying degrees of acceptability and different linguistic distributions. This fits almost perfectly to what we call case attraction. The only feature of case attraction unaccounted for in this system is the fact that its domain crosses the clausal boundaries. But this is also a typologically known phenomenon, the Long-Distance Agreement (sometimes abbreviated as LDA).<sup>14</sup> Corbett shows a surprising example of long-distance agreement from Tsez in (8). The non-agreeing version of the sentence is also attested in (9), with the default gender (IV) (CORBETT, 2006, p. 66).

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hard to see if this tendency follows across the Gothic and Classical Armenian languages or if it is idiosyncratic to this particularly convoluted sentence.

- (i) 1 Cor 7.10–11
- a. Koinē Greek (Original text)  
τοῖς δὲ γεγαμηκόσιν παραγγέλλω, οὐκ ἐγὼ ἀλλὰ ὁ κύριος, γυναῖκα ἀπὸ ἀνδρὸς μὴ χωρισθῆναι – ἐὰν δὲ καὶ χωρισθῆ, μενέτω ἄγαμος ἢ τῷ ἀνδρὶ καταλλαγήτω – καὶ ἄνδρα γυναῖκα μὴ ἀφιέναι.
- b. Gothic  
*ip þaim liugom haftam anabiuda, ni ik, ak frauja, qenai fairra abin ni skaidan. ip jabai gaskaidnai, wisan unliugaida, aiþþau du abin seinamma aftra gagawairþjan, jah aban qen ni fraletan.*
- c. Classical Armenian  
*Ayl kanambeac'n paturiem, oč es ayl t(ē)r. knoĵ yarñē mi meknel: apa et'e meknesc'i, anayr mnasc'e, kam andrēn ěnd arñ iwrum hajtesc'i. ew arñ zkin iwr mi t'ētul*  
“And unto the married I command, yet not I, but the Lord, Let not the wife depart from her husband: — But and if she depart, let her remain unmarried or be reconciled to her husband: and let not the husband put away his wife.”

<sup>14</sup> See Corbett (2006, 65f. for further bibliography).

- (8) eni-r            [užā        magalu        b-āc'-ru-ḥi]            b-iy-xo.  
 mother(II)-DAT boy(I)-ERG bread(III)[ABS] III-eat-PST\_PTCP-NMLZ[ABS] III-know-PRS  
 'The mother knows that the boy ate the bread.'<sup>15</sup>
- (9) eni-r            [užā        magalu        b-āc'-ru-ḥi]            r-iy-xo.  
 mother(II)-DAT boy(I)-ERG bread(III)[ABS] III-eat-PST\_PTCP-NMLZ[ABS] IV-know-PRS  
 'The mother knows that the boy ate the bread.'<sup>16</sup>

The conditions that favour the selection of one of the two options will be discussed below in [subsection 2.3.3.2](#).<sup>17</sup> But for our interests in this point, this framework serves as a way to allow typological comparisons between AG and other agreement systems, and suggest types of variables potentially involved in case attraction.

### 2.3.3.1 Agreement mismatches

When a pair of controller and target do not display agreement, we have an instance of agreement mismatch. There are many reasons for a mismatch to occur, from the paradigmatic lack of suiting form in any of the ends of an agreement domain, to a dispute between two controllers. There might as well happen to be a case of a split system of agreement in which a semantic and a syntactic agreement dispute. The classic example is the agreement system in (10) (CORBETT, 2006, 155f.).

- (10) a. The committee has decided. (*syntactic agreement*)  
 b. The committee have decided. (*semantic agreement*)

It is fair to assume that in this case, the speaker might choose a resolution fitting to the desired semantic reading: is the speaker stressing the fact that the *committee* is a single institution or is the speaker stressing the social structure of *committee*. Although the intuition seems to give a neat system, there are other interfering factors that might tip the balance to one resolution or another, like the language variety (*spoken* or *written*) and specially the type of predicate of the agreement target, as it seems to be the case of English *committee-type* nouns in the account given by Levin (2001). Thus, it is safer to assume that the resolution between two forms of agreement in a given language depends on the interaction between controller and target, as well as pragmatic and semantic selections being made by the speaker. This does not mean that the resolution between two agreement options is made in a clear cut way, but rather that it is *favoured* by the co-occurrence of different elements in the

<sup>15</sup> Example (107) in Corbett (2006, p. 66).

<sup>16</sup> Example (106) in Corbett (2006, p. 66).

<sup>17</sup> It is unclear in Corbett's definition of Long-Distance Agreement whether or not the controller must be in the embedded clause or it could as well be in the embedding clause, as it is the case in our data. Works on LDA generally restrict their discussions on the first scenario, in which the controller is in the embedded clause, e.g. Polinsky (2003).



### 2.3.3.1.2 Accessibility and Case Markedness Hierarchies

This pair of hierarchies has been used to discuss case attraction on relative clauses of AG so that it is necessary to include them in our discussion (KAKARIKOS, 2014; PROBERT, 2015). The most important hierarchy frequently applied is the Case Markedness Hierarchy. The cases at the rightmost position of this hierarchy are considered to be more marked or less canonical. Its definition comes from Grosu (1994) and it is defined as (14):

- (14) Case Markedness (GROSU, 1994, p. 122)  
 NOM < ACC < DAT < GEN < ... < P-Case<sup>19</sup>

A related hierarchy to this is the Noun Phrase Accessibility Hierarchy (KEENAN; COMRIE, 1977, 1979) or Grammatical Relation Hierarchy (BLAKE, 2004). By this hierarchy, the grammatical functions in the rightmost position are more marked and thus less accessible without the use of overt morphosyntactic markings. They are defined as (15) and (16):

- (15) Noun phrase accessibility hierarchy (KEENAN; COMRIE, 1977, 1979):  
 Subject > Direct Object > Indirect Object > Obliques > Genitives > Objects of Comparison
- (16) Grammatical Relations Hierarchy (BLAKE, 2004, 86ff. KAKARIKOS, 2014, p. 299):  
 Subject > Direct Object > Indirect Object > Oblique Meanings > Prepositional Complements

### 2.3.3.2 Information and Event Structure

As we mentioned earlier, what seems to be the common opinion about case attraction is that it produces a pragmatic effect of *emphasis*, on the relation between the matrix' oblique object  $X_1$  and the predicative of the infinitive clause  $Y_1$ , and that when it fails to happen, this *emphasis* falls on the infinitive clause (KÜHNER; GERTH, 1898, II pp.24ff; COOPER; KRÜGER, 1997, p. 774, 2002, p. 2501). *Emphasis* is a loose concept and generally is replaced by the more granulate linguistic description in the form of the pair of concepts *Topic* and *Focus*. On the topic of Ancient Greek word order, the works of Dik (1995, 2007), Matić (2003) and Allan (2012, 2014) have shown how different word orders in AG represent in syntax the informational structure of the sentence, i.e. if there is a pragmatic function of anaphorically retrieving contextually necessary information (topics), or of presenting new or stressed information (focus), besides some other functions as Setting, Theme and Tail.<sup>20</sup> As suggested by Allan (2012), the word order in AG that allows constituents to be placed to the leftmost position of complement clauses and sometimes intertwine with the matrix could be prompted by a raising process

<sup>19</sup> I.e. Prepositional case.

<sup>20</sup> Other works on the subject also discuss some pragmatic and semantic effects of word order, namely Devine and Stephens (2000, 2019).

that is cross-linguistically expected to cause changes on case assignment and agreement (POLINSKY, 2003), so it is important for us to keep track of the pragmatic information being conveyed by different predicates ( $Y_i$ ) to assure if it might be prompting the case attraction. Since Allan (2012) is the only work to our knowledge to convincingly account for the pragmatics of word order in complex sentences, we will use his archetypical structure as a model:

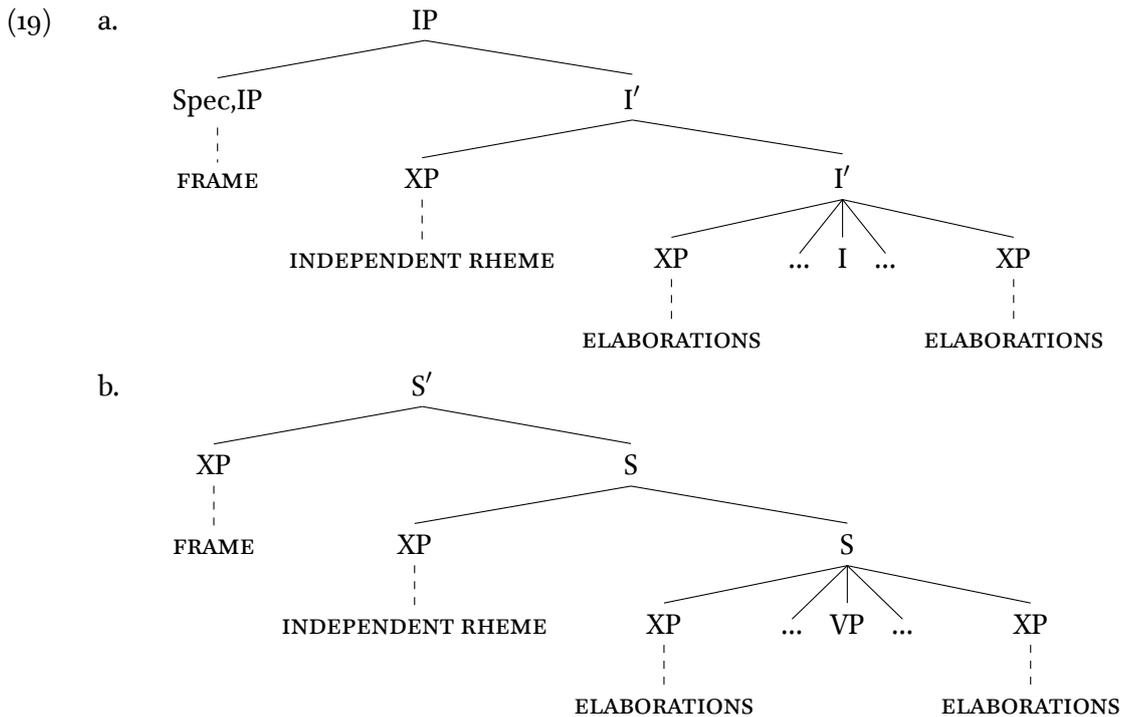
- (17) Word order schema complex sentence (ALLAN, 2012, p. 9):<sup>21</sup>
- a. Theme<sub>M/C</sub> - Sett<sub>M</sub> - NCTop<sub>M/C</sub> - Narrow Foc<sub>M/C</sub> - Main Verb - Sett<sub>C</sub> - NCTop<sub>C</sub> - Narrow Foc<sub>C</sub> - Inf - Pressupp.Mat.
  - b. Theme<sub>M/C</sub> - Sett<sub>M</sub> - NCTop<sub>M/C</sub> - Narrow Foc<sub>M/C</sub> - Main Verb - Sett<sub>C</sub> - NCTop<sub>C</sub> - [Inf - Add.Foc]<sub>BROAD FOC</sub>

Another set of concepts can be profitable for an analysis of case attraction. As mentioned in section 1.2, the case attraction in AG, according to the accounts of Brugmann (1925), Humbert (1945) and Napoli (2014), appears to be more frequent with impersonal verbs, namely those that work as a semi-modal verb denoting possibility. Because of that and since the great majority of our data has participles working as the target of attraction, we must have tools to account for the relation between these participles and the infinitive verb to which they are related. There are many models available, most of them descriptive and circumscribed by the grammatical traditions of Latin and Ancient Greek, posing serious issues for extending them as concepts to other languages and for a general linguistic theory. A recent model has been proposed by Bary and Haug (2011), Haug (2011, 2012) and Fabricius-Hansen and Haug (2012) that shows features profitable to our specific needs: it is modelled to work with different languages, and it is generally based in probabilistic accounts to assess the proposed categories. The way these authors model event structures of participial constructions is with a three-fold set of event-describing functions that the participles might assume: *elaborations*, *independent rhemes*, and *frames*. The main intuition of this model is that the way we linguistically depict entities can be used to describe how we depict events: 1. we might describe an entity as an ordained set of independent entities (e.g. the seasons for describing the year), so we might also depict an event on its coordinated series of smaller events, the independent rhemes (18-a); 2. we might describe an entity on its constitutive parts or co-occurring entities, elaborating on its features (eg. the morphological analysis for describing a verbal form), we might describe the constitutive events of a major event, increasing its “granularity” (18-b); and finally 3. we might depict an entity providing the set of entities that occur around it and that provide its specificity (eg. the address for describing a house), so we might also describe a framing event that encompasses the main event (18-c).

- (18) a. δραμών δέ τις                      καί γεμίσας σπόγγον      ὄξους                      περιθείς καλάμω  
run:AP but some:NOM.SG and fill:AP    sponge:ACC vinegar:GEN put:AP    reed:DAT

<sup>21</sup> M = Matrix; C = Complement-Clause; Sett = Setting; NCTop = New or Contrastive Topic; Narrow Foc = Narrow Focus, Add.Foc. = Additional Focus; BROAD FOC = Broad Focus; Inf = Infinitive.





Lastly, the functions would be associated with adverbial roles (HAUG, 2012, p. 304):

There is a close correspondence between the adverbial roles and the information-structural classification: elaborations will generally yield instrument, manner, or accompanying circumstances readings, whereas frames yield concessive, conditional, temporal, or clausal readings. Independent rhemes are generally classified as simply temporal in traditional grammar, but it is clear that they are not temporal in the same sense as frames.

This model is applied to AG in a probabilistic account of participles in the New Testament and borne out some predictions. Nevertheless, there are issues mainly on how to distinguish frames and independent rhemes, since both are supposed to have anaphoric discourse relations and the semantic evidence presented by Bary and Haug (2011) is hardly strong.

## 2.4 Quantitative analysis of the data

Our study deals with historical data retrieved from a corpus, namely the TLG (PANTELIA, n.d.). This means that some analytical techniques are not available, as for example a test of grammaticality. Even if this were available, we are persuaded by Jensen and McGillivray (2017)'s arguments, that linguistics in general and specially the historical linguistics should be corpus-based and quantitative. This means that this work will render not only raw frequency and proportion tables, but apply statistical tests to verify whether or not any given effect emerged in our data by chance. Later, as McGillivray (2014) and Jensen and McGillivray (2017) frequently stress, we will apply multivariate analyses to our data assuming that phenomena in languages are multivariate by nature.

There are issues concerning the small amount of data available to the phenomenon of case attraction and the independence between each token in our database, since they come from the same authors and, frequently, from the same text. These are issues common to the historical linguistics in general, even when we are out of a quantitative framework. We will assume as rule of thumb that a test is not trustworthy if the total attestation of a given pair of features is less than 30, and refrain to assert correlation; in the case that a value is between 20 and 30, any result will be only be assumed as a valid evidence of further research needed. As for the later issue, it can only be solved without jeopardizing the whole investigation of AG syntax by assuming that our conclusions are limited to our historical attestation of the language, and that, in this particular work, we can only account for the language used in Attic-Jonic literary prose of Herodotus, Plato and Xenophon. This is not the most desirable outcome possible, but it is enough to build a foundation to a more complete research in the future.

## 2.4.1 Single-variate techniques

### 2.4.1.1 Pearson's Chi-squared Test

is a test that compares the observed frequencies of a given table with the expected frequencies for a sample this size. This test assumes a table 2, with two features,  $a$  and  $b$ , whose values are mutually exclusive,  $value$  and  $\neg value$  (i.e. not-value), with  $x, y, z, w > 5$ .<sup>25</sup>

Feature <sub>a</sub>	$\alpha$	$\neg\alpha$	Sum
Feature <sub>b</sub>			
$\beta$	$x$	$y$	$R_1 = (x+y)$
$\neg\beta$	$z$	$w$	$R_2 = (z+w)$
Sum	$C_1 = (x+z)$	$C_2 = (y+w)$	$T = (x+y+z+w)$

Table 2 – Possible observed sample.

The test also assumes that the values of the rows and columns of the given table are independent, so it expects that each cell of the table is the product of the probability of the row and the column, given by the formula (20).<sup>26</sup>

(20)

$$expected = \frac{R \times C}{T}$$

<sup>25</sup> For more complete explanations on the use of the chi-squared test in linguistics, see Woods, Fletcher, and Hughes (1989, p. 132–44), Gries (2013, 165ff.), Rasinger (2013, 156ff.), and McGillivray (2014, 179ff.). For problems on the use of the chi-squared test, see Woods, Fletcher, and Hughes (1989, 144ff.).

<sup>26</sup> For a clearer unpacking of this formula, see Crawley (2015, 100ff.).

After producing each expected value, one obtains a table 3:

Feature <sub>a</sub>	$\alpha$	$\neg\alpha$	Sum
Feature <sub>b</sub>			
$\beta$	$(R_1 \times C_1) \div T$	$(R_1 \times C_2) \div T$	$R_1$
$\neg\beta$	$(R_2 \times C_1) \div T$	$(R_2 \times C_2) \div T$	$R_2$
Sum	$C_1$	$C_2$	$T$

Table 3 – Expected sample.

Using the observed values from Table 2 and the expected values from Table 3, we are able to apply the Pearson's Chi-squared Test of Contingency, defined by the formula (21). The value  $\chi^2$  resulting from it is then compared to what one should expect depending on the degrees of freedom of the sample (in this work always  $df = 1$ ) and the degree of certainty we are working with, the  $p_{critical}$  (in this work always  $p_{critical} = 0.05$ ). If the  $\chi^2$  obtained is *greater* than that expected to the degree of freedom of the sample and to the chosen  $p_{critical}$ , the hypothesis of independence between the features can be rejected. Another way to phrase would be to say that given the obtained  $\chi^2$  and the degree of freedom, the  $p$ -value is smaller than the  $p_{critical}$ .

(21)

$$\chi^2 = \sum_{i=1}^n \frac{(\text{observed} - \text{expected})^2}{\text{expected}}$$

The results of this test will be summarized henceforth in a string like  $\chi^2 = 3.841(1); p = 0.05$ , where the number in parenthesis represents the degrees of freedom.

Lastly, if the total size  $n$  of a sample is small,  $15 < n < 60$ , it is useful to apply the Yates' correction to the chi-squared test, denoted by the formula (22):

(22)

$$\chi_{Yates}^2 = \sum_{i=1}^n \frac{(|\text{observed} - \text{expected}| - 0.5)^2}{\text{expected}}$$

#### 2.4.1.2 Correlation coefficient $\phi$ and Cramér's $V$

are tools to evaluate how strong is the effect size of correlated variables. Both of these values fall into the range between 0 and 1 and are calculated by slightly different formulae (23).<sup>27</sup>

<sup>27</sup> For a further discussion on the measurement of effect size, see Cohen (1988, p. 222–7), Woods, Fletcher, and Hughes (1989, p. 154–75), and Gries (2013, p. 185–9).

(23) a.

$$\phi = \sqrt{\frac{\chi^2}{n}}$$

b.

$$\text{Cramer's } V = \sqrt{\frac{\chi^2}{n \cdot (\min[n_{\text{rows}}, n_{\text{columns}}] - 1)}}$$

Throughout this work we will follow McGillivray (2014, 182f.): “values of  $\phi$  (or  $V$ ) around 0.10 are to be considered a small effect, values around 0.30 a medium effect, and values around and above 0.50 a large effect”.

### 2.4.1.3 Shapiro-Wilk normality test

verify if a given vector of parametric values is normally distributed or not. It will be applied only once during this work, but to keep consistency we show the precise formula (24) (SHAPIRO; WILK, 1965).<sup>28</sup>

(24)

$$W = \frac{b^2}{s^2} = \left( \sum_{i=1}^n (a_i \times y_i)^2 / \sum_{i=1}^n (y_i - \bar{y})^2 \right)$$

### 2.4.1.4 Wilcoxon signed rank test

is used together with the Shapiro-Wilk, since the data we are working with does not have a normal distribution, thus being impossible to apply the  $t$ -test, which expects a normal distribution to be accurate.<sup>29</sup> This test is used to analyse the symmetry of dispersion around the median as well as compare the symmetries of two vectors related to a given pair of variables. The calculation is more cumbersome than the last ones discussed, so we refer to Wilcoxon (1945) and Sheskin (2003, Test 18).

## 2.4.2 Multivariate techniques

### 2.4.2.1 Multiple Correspondence Analysis:

the MCA is an exploratory analysis technique whose working principle is extended of the Correspondence Analysis model (CA) Benzécri (1973). The model is too complex to explain in detail, so for a better account and demonstration, see McGillivray (2014, 168ff., 194ff.). The most important things to keep in mind is that this model produces a multi-dimensional system correlating variables and individuals (data point). The dimensions are organized in a descendent order starting from that which

<sup>28</sup> See Gries (2013, p. 162–5) and Oushiro (2017, passim.).

<sup>29</sup> See Sheskin (2003, Test 18, VII) and Gries (2013, p. 227–34).

accounts for the higher percentage of data variation to that which accounts for the lower percentage of data variation. The percentage of data accounted by each dimension is called *eigenvalue*. The results of an MCA analysis can be visually displayed in two- and three-dimensional plots each of them accounting for the number of chosen dimensions. We will only represent two dimensional plots, since our MCAs returned relatively high eigenvalues for the two first dimensions and because they are easier to print and interpret. The closer a point representing a variable or an individual in a given dimension of a MCA plot, the more those values are similar, and an explanatory data analysis of their relation is justified. See the dummy MCA plot of two dimensions accounting for 100% (60% in the first dimension) of the variation of the variables *author*, *dialect*, and *dialogue* in Figure 1.

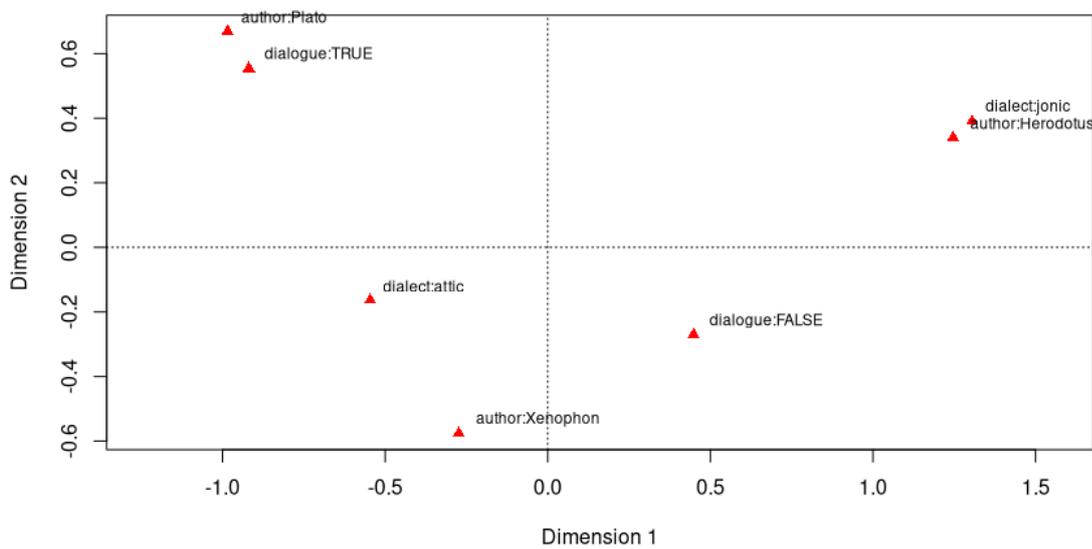


Figure 1 – Dummy MCA accounting for 100% of the variation of the variables *author*, *dialect*, and *dialogue* in our corpus.

## 3 Quantitative

In this chapter, we present a quantitative analysis of the data collected as explained in [chapter 2](#), and presented in [Appendix A](#). Most of the tests in this chapter were made using the R standard libraries ([R CORE TEAM, 2013](#)), the RStudio IDE ([RSTUDIO TEAM, 2015](#)), the libraries `vcd` ([MEYER; ZEILEIS; HORNİK, 2017](#)), `Hmisc` ([HARRELL JR, 2020](#)), `ggplot2` ([WICKHAM, 2016](#)), `FactoMineR` ([LÊ; JOSSE; HUSSON, 2008](#)), and `ca` ([NENADIC; GREENACRE, 2007](#)). Some procedures for generating the data were made by means of Python scripts ([VAN ROSSUM; DRAKE, 2009](#)) with help of the libraries `pandas` ([MCKINNEY et al., 2010](#)) and `numpy` ([OLIPHANT, 2006](#)). The choice and interpretation of the tests follow closely [Gries \(2013\)](#), [McGillivray \(2014\)](#) and [Jenset and McGillivray \(2017\)](#).<sup>1</sup>

### 3.1 Basic information

Although the list of verbs that *could* display the environment necessary for case attraction is rather long (see [section 2.1](#)), only those in the next table actually returned fitting tokens. It is noticeable that most of the verbs have not returned many tokens.

	Herodotus	Plato	Xenophon	Sum
ἀφήμι	0	0	1	1
δέομαι	2	0	4	6
δίδωμι	0	0	1	1
δοκεῖ	18	8	12	39
ἐγχωρεῖ	0	2	0	2
ἐντέλλομαι	7	0	0	7
ἐξαρκεῖ	0	2	1	3
ἕξεστι	0	3	20	23
ἐπισκήπτω	1	0	0	1
παραγγέλλω	3	0	9	12
προσθήκει	0	9	2	11
συμβουλεύω	5	2	5	12
συμφέρει	0	1	0	1
ὑπάρχει	0	1	0	1
χρήζω	1	0	0	1

<sup>1</sup> See also [Desagulier \(2017, 136ff.\)](#) and [Oushiro \(2017\)](#).

(continued)

	Herodotus	Plato	Xenophon	Sum
Sum	38	27	55	120

Table 4 – Frequency count of lemmas of  $V_m$  and author.

The basic distribution of case attraction across our data is presented in Table 5. According to a chi-squared goodness-of-fit test, the frequency distribution of the attraction and its absence deviates significantly to the expected one:  $\chi^2 = 14.7 (1), p = 0.000126$ . The attracted constructions were expected to happen 61 times, but only happen 39, while the non attracted, equally expected to happen 61 times, occur 81 times. Thus, it should be assumed that the distribution of attraction is not randomly distributed.

attraction	freq (prop)
False	81 (67.5%)
True	39 (32.5%)

$\chi^2 = 14.7 (1), p = 0.000126$

Table 5 – Frequency counts and proportion of attraction.

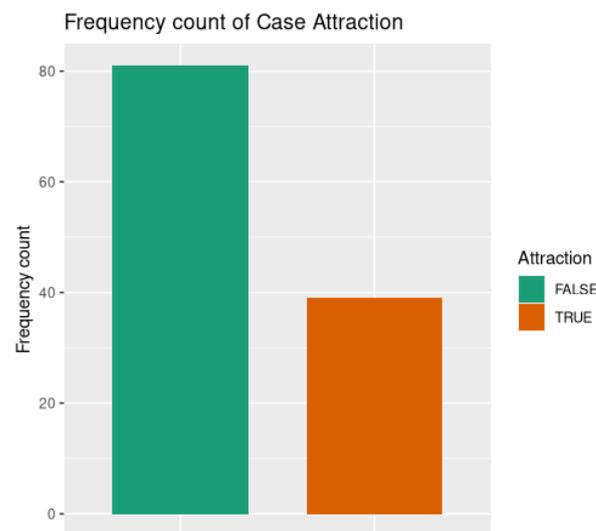


Figure 2 – Relative frequency of attraction across the data.

### 3.2 Testing previous hypotheses

The previous hypotheses posed by the literature are:

1. the case attraction is not obligatory;
2. the case attraction is more frequent when the  $V_{inf}$  is a copula;
3. the case attraction is even more frequent when  $V_{inf}$  is a copula and  $Y_i$  is an adjective;
4. the case attraction is less frequent the closer  $X_i$  and  $Y_i$  occur in the sentence;
5. the case attraction happens when an emphasis is placed on the  $Y_i$  or on its identity with  $X_i$ .

The next sections test if there is any correlation between the case attraction and each of these variables. The variables are represented our data as boolean values (i.e. True/False) whenever it is possible.

### 3.2.1 $V_{inf}$ as copula

By this hypothesis we should see a positive correlation between the type of  $V_{inf}$  of verbs of copula and the incidence of attraction. By means of Pearson's Chisquared Test, we can reject the null hypothesis (that the variables are independent):  $\chi^2 = 17.819$  (1)  $p = 2.4295e-05$ . The effect is medium,  $\phi = 0.385$ . The frequency counts of attraction related to whether or not  $V_{inf}$  is a copula are presented in Table 6.

attraction	False	True	Sum
copula			
False	74 (76.2%)	23 (23.7%)	97 (80.8%)
True	7 (30.4%)	16 (69.6%)	23 (19.2%)
Sum	81 (67.5%)	39 (32.5%)	120 (100%)
$\chi^2 = 17.819$ (1), $p = 2.4295e-05$ ; $\phi = 0.385$			

Table 6 – Frequency counts and proportion of attraction and  $V_{inf}$  as a copula.

### 3.2.2 $V_{inf}$ as copula and the category of Y

The next hypothesis is to compare the relation between the category of  $Y_i$  when  $V_{inf}$  is a copula. By the low frequency, the data can hardly be tested and it is impossible to argue in any direction (see Table 7).

### 3.2.3 Distance and emphasis

Another hypothesis, briefly argued for by Luraghi (1999), states that the case attraction occurs more often the closer  $X_i$  and  $Y_i$  are to each other. The test to this hypothesis also allows us to see how the emphasis placed on a given  $Y_i$  is related to attraction, once we assume that a left-dislocated  $Y_i$  is

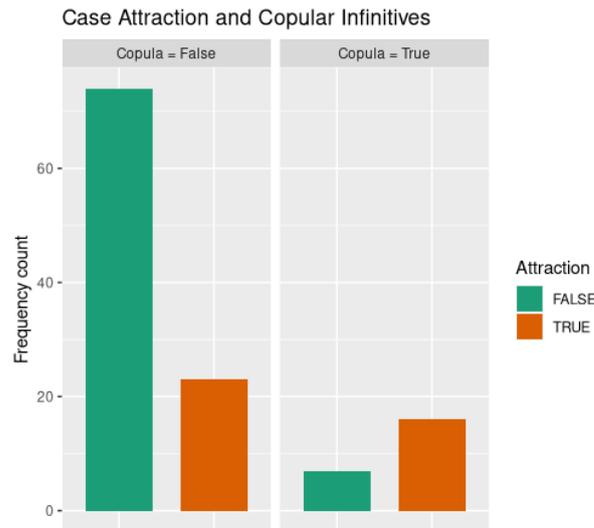


Figure 3 – Proportion of attraction by whether or not  $V_{inf}$  is a copula

attraction	False	True	Sum
y_POS			
noun	4 (50.0%)	4 (50.0%)	8 (34.8%)
adj	3 (20.0%)	12 (80.0%)	15 (65.5%)
Sum	7 (30.4%)	16 (69.6%)	23 (100%)

$\chi^2 = 2.2179 (1), p = 0.136; \phi = 0.311$

Table 7 – Frequency counts and proportion of attraction and POS tag of Y with  $V_{inf}$  as a copula.

emphatic. The distance here is counted by the total amount of words separating  $X_i$  and  $Y_i$  without any consideration to phrasal structure.<sup>2</sup>

The distribution of the distances between  $X_i$  and  $Y_i$  is not normal, and it is positively skewed as can be seen by the histogram in Figure 4, and by the result of a Shapiro-Wilk normality test:  $W = 0.83066, p = 2.018e-10$ . Since the distribution is not normal, we must use Wilcoxon rank sum test, with continuity correction because of the amount of data. We include here the whole result given by our R script, using the standard *wilcox.test*:

```
> wilcox.test(data$distance_xy ~ data$attraction, conf.int = T)
Wilcoxon rank sum test with continuity correction
```

```
data: data$distance_xy by data$attraction
W = 2210.5, p-value = 0.00038
```

<sup>2</sup> See chapter 4 for a discussion on the linguistic significance of absolute linear distance for agreement.

```

alternative hypothesis: true location shift is not equal to 0
95 percent confidence interval:
 0.9999867 3.9999394
sample estimates:
difference in location
      2.000056

```

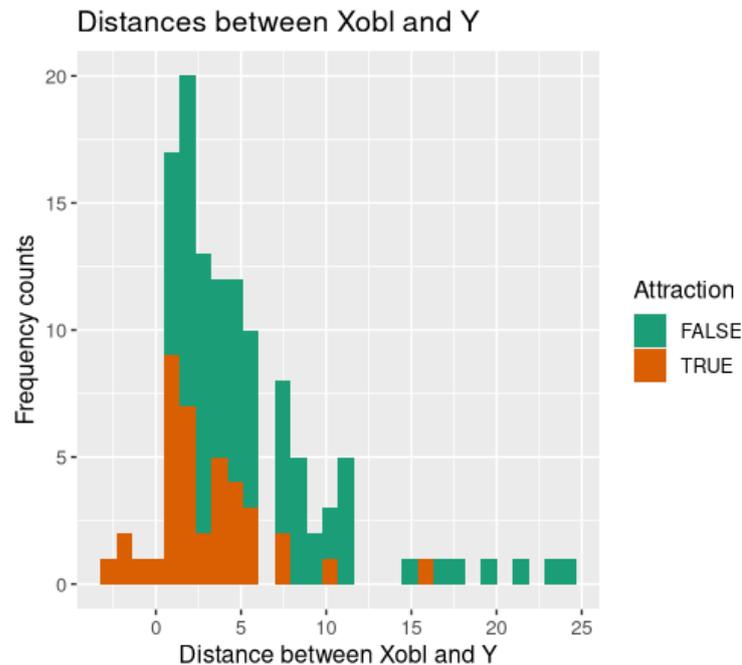


Figure 4 – Histogram of the distances between  $X_i$  and  $Y_i$ .

We can reject the null hypothesis and assume the alternative hypothesis: the distance between  $X_i$  and  $Y_i$  is negatively correlated with the attraction, the distance being counted by total words intervening and the attraction being treated as a boolean value, and the estimated difference between attracted and non-attracted forms is predicted above to be of 2 words. On distance and agreement phenomena, see [Levin \(2001\)](#) and [Corbett \(2006\)](#). See the boxplot in [Figure 12](#) the distribution of data.

### 3.3 Other hypotheses

The annotation we made of our data included more variables than those needed to test previously proposed predictors to case attraction in infinitive clauses. First of all, we annotated in which text the sentence was attested, which allow us to observe how the attraction is distributed between the authors Herodotus, Plato and Xenophon (variable *author*). Secondly, we annotated the  $V_m$  lemmata in two distinct ways: whether or not the verb is impersonal and whether or not the verb has

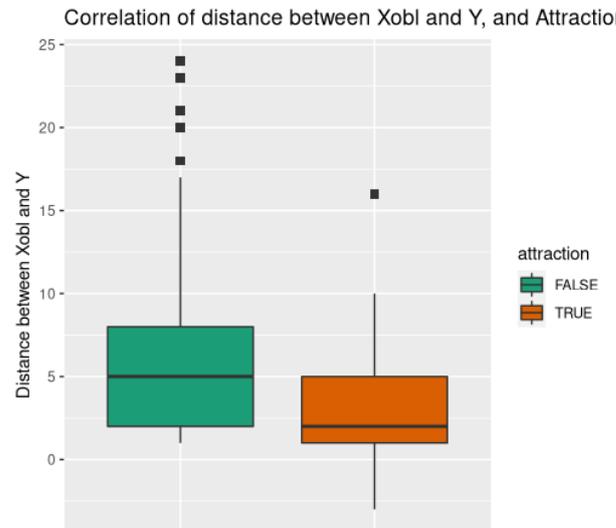


Figure 5 – Distances between  $X_i$  and  $Y_i$  in relation to case attraction.

a quasi-modal reading (variables `personal` and `poss_verb`). This is motivated by the semantic difference between the verbs similar to  $\xi\xi\epsilon\sigma\tau\iota$  “to possible for someone to do something” and  $\delta\omicron\kappa\epsilon\acute{\iota}$  “to be assumed by someone to be good to do something”. Since these relations appear rather marginally commented in the literature, we must cautiously investigate which are the relations present between these predictors and our phenomenon, if any.

### 3.3.1 Exploratory analysis

To explore the relations between the variables mentioned and the case attraction, we will apply a exploratory analysis method called *Multiple Correspondence Analysis* (MCA). This method fits the data in different models of effect and returns a multidimensional model of relation between variables. Complete discussion on how to interpret the intricacies of MCA are available in McGillivray (2014, p. 194–210) and Desagulier (2017, p. 257–79).<sup>3</sup>

Since we assumed above that there is a correlation between case attraction and whether or not  $V_{inf}$  is a copula, we include this variable to our MCA for comparison. The other variables included in our MCA are `author`, `personal`, `poss_verb`, and `attraction`. The MCA was built using the function `mjca` from the package *ca* (NENADIC; GREENACRE, 2007) with the option `lambda` set to *Burt* for compatibility with the equivalent function `MCA` from the package *FactoMineR* (LÊ; JOSSE; HUSSON, 2008).<sup>4</sup>

<sup>3</sup> The author cited use slightly different algorithms for producing the MCAs, namely the Joint Correspondence Analysis (GREENACRE, 2017, 145ff.) available with the package *ca* (NENADIC; GREENACRE, 2007), and the Iterator Matrix (GREENACRE, 2017, p. 137–40) available with the package *FactoMineR* (LÊ; JOSSE; HUSSON, 2008; HUSSON; LÊ; PAGÈS, 2011).

<sup>4</sup> It is recommended to use the option `lambda = ``adjusted```, since it raises the percentage of inertia while conserv-

The eigenvalues representing how much each dimension contributes to the total inertia show that the two first dimensions account for 79.9% of the inertia, see [Table 8](#). These are enough to give us insights of how the variables are interacting.

dimension	inertia	%	cum. %
dim 1	0.236634	66.62	
dim 2	0.047162	79.89	
dim 3	0.039506	91.02	
dim 4	0.017304	95.89	
dim 5	0.010671	98.89	
dim 6	0.003941	100.00	

Table 8 – Singular values and inertia explained from the MCA for the investigation on the interaction between ‘author’, ‘copula’, ‘personal’, ‘poss\_verb’, and ‘attraction’.

With 79.1% of the total inertia being accounted for by the two first dimensions, it is possible to dismiss the other four as marginal ([Figure 6](#)).

The first dimension (horizontal axis) accounts for 66.6% of the inertia and shows a proximity between the attraction to the quasi-modal verbs (all impersonal) as well to  $V_{inf}$  being a copula, Plato being also strongly associated with attraction and the use of constructions of quasi-modal impersonals with infinitives of copula. The absence of attraction is closely associated in the first dimension to the opposite environments of its counterpart, Herodotus being associated with it and constructions of main personal verbs followed by infinitives different from a copula. Xenophon appears to hold a middle ground in the first dimension, without any clear preference for any construction. Plotting the first dimension, the high participation on the total inertia is noticeable by the polarized position of the cluster of points ([Figure 7](#)). The second dimension is much more cluttered ([Figure 8](#)), reflecting its low participation in the total inertia, showing some logical inconsistencies, e.g. the association of personal verbs to quasi-modal impersonal verbs. The overlap of opposing values in this dimension is way higher than that of the first dimension, as noticeable by the plots in [Figure 9](#) and [Figure 10](#). The second dimension nevertheless still shows the association between case attraction and quasi-modal impersonals, a construction slightly more present in Xenophon than in the other authors.

The analysis above allows us to formulate three other hypotheses on the behaviour of case attraction in infinitive clauses of AG: 1. the case attraction occurs unevenly across the authors of our database; 2. the case attraction is more frequent with impersonal verbs in general; 3. the case attrac-

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ing the scaling properties of the MCA ([NENADIC; GREENACRE, 2007](#), ad loc.). Since both packages are complementary in their functionalities we opt for a rather small compromise.



Figure 6 – First and second dimensions of the MCA using the variables *attraction*, *author*, *personal*, *poss\_verb* and *copula*. These account for 79.1% of the total inertia.

tion is particularly more frequent with impersonal verbs that denote possibility, i.e. work as modal verbs, than with other verbs in general.

### 3.3.2 Author and Attraction

In addition to the conclusions from our exploratory analysis, the hypothesis that the case attraction is more expected in Attic than in other dialects is sometimes present in some grammars (BUTTMANN, 1826; HOCHEDER, 1833).<sup>5</sup> Although our data was not collected with dialects in mind, in such a way that our data favours the Attic dialect, it can be used to assert preferences of certain constructions between the authors. The distribution is as in Table 9.

We can reject the null hypothesis on basis of the result of the Pearson's chisquared test:  $\chi^2 = 16.506$  with 2 degrees of freedom and  $p = 2.604180e-04$ . With a Cramér's  $V = 0.348$ , the effect is medium. It is clear by the plot in Figure 11 that Plato presents a rather different frequency of attraction.

<sup>5</sup> Curiously, this position is also held in accounts discussing the *tractio relativa*. See Probert (2015).

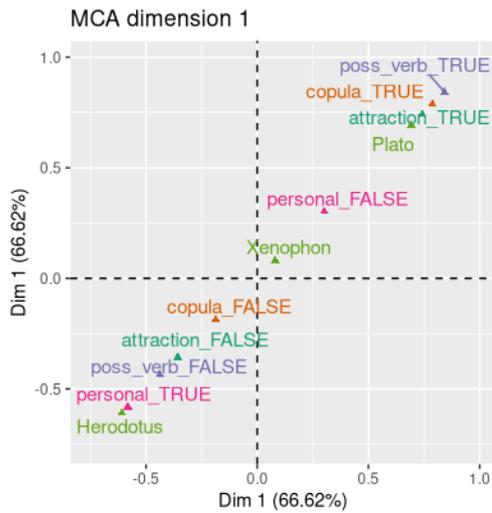


Figure 7 – First dimension of the MCA using the variables *attraction*, *author*, *personal*, *poss\_verb* and *copula*, accounting for 66.62% of the total inertia.

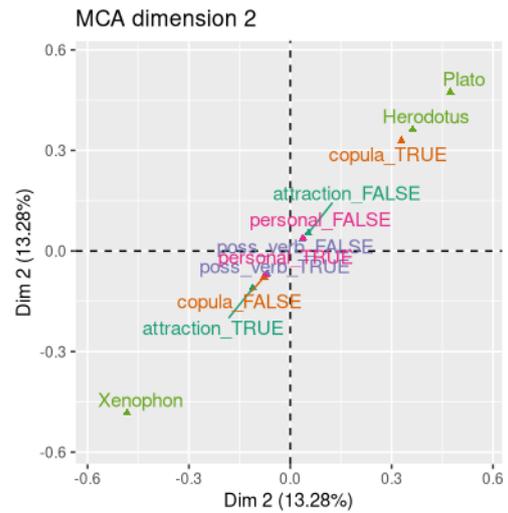


Figure 8 – Second dimension of the MCA using the variables *attraction*, *author*, *personal*, *poss\_verb* and *copula*, accounting for 13.27% of the total inertia.

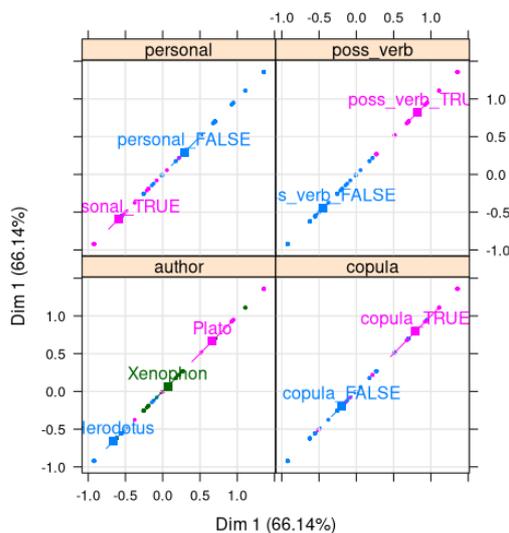


Figure 9 – Value overlap in the first dimension of the MCA using the variables *author*, *personal*, *poss\_verb* and *copula*.

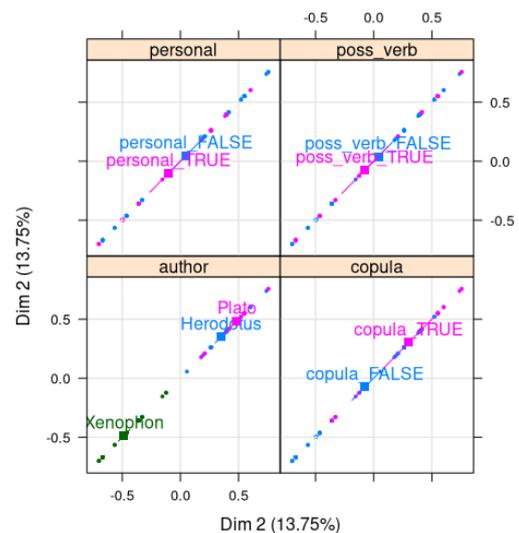


Figure 10 – Value overlap in the second dimension of the MCA using the variables *author*, *personal*, *poss\_verb* and *copula*.

### 3.3.3 Personal vs. impersonal verbs/constructions

Besides our exploratory analysis, the somewhat frequent statement that case attraction occurs in impersonal constructions, without any mention to personal constructions, allows us to formulate

attraction	False	True	Sum
author			
Herodotus	35 (92.1%)	3 (7.9%)	38 (31.2%)
Plato	13 (48.1%)	14 (51.8%)	27 (22.5%)
Xenophon	33 (60.0%)	22 (40.0%)	55 (45.8%)
Sum	81 (67.5%)	39 (32.5%)	120 (100%)

$\chi^2 = 16.506 (2) p = 2.6042e-04$   
Cramer's V = 0.348

Table 9 – Frequency counts and proportion of attraction and author.

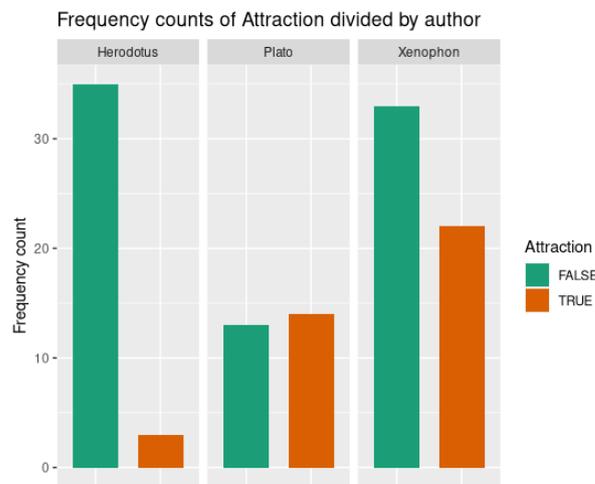


Figure 11 – Proportion of attraction by author.

the hypothesis that the attraction is more frequent in impersonal constructions. We assume here that impersonal constructions are those in which  $V_m$  is always in the 3rd person singular and the highest argument occurs in an oblique case, namely the dative. The verbs of our corpus that marks positive for this are: δοκεῖ, ἐγχωρεῖ, ἐξαρκεῖ, ἔξεστι, προσήκει, ὑπάρχει, and συμφέρει.

By means of Pearson's Chisquared Test, we can reject the null hypothesis (that the variables are independent):  $\chi^2 = 4.788 (1) p = 0.02$  with a very small correlation coefficient ( $\phi = 0.2$ ). The frequency counts and proportion of the relation between the attraction and whether or not the main verb takes place in a impersonal construction is 10.

### 3.3.4 Quasi-modal Impersonal Verbs

Quasi-modal impersonal verbs is a loose concept that we will apply in this work for operational reasons. As demonstrated by Barðdal et al. (2012), the dative subject constructions in IE languages

attraction	False	True	Sum
personal			
False	48 (60.7%)	31 (39.2%)	79 (65.8%)
True	33 (80.5%)	8 (19.5%)	40 (33.3%)
Sum	81 (67.5%)	39 (32.5%)	120 (100%)

$\chi^2 = 4.788 (1), p = 0.02$   
 $\phi = 0.2$

Table 10 – Frequency counts and proportion of attraction and personal / impersonal construction

are not homogeneous and different syntactic developments affect subsets of verbal constructions unevenly. This allows us to categorise differently the impersonal verbs discussed in the section above, specially since the distribution of attraction is quite distinct between the best represented impersonal verbs (*δοκεῖ* vs. *προσῆκει/ἔξεστι*) in Table 11.<sup>6</sup>

attraction	False	True	Sum
<i>δοκεῖ</i>	36 (92.3%)	3 (7.7%)	39 (47.5%)
<i>προσῆκει</i>	3 (25.0%)	9 (75.0%)	12 (14.6%)
<i>συμφέρει</i>	2 (100.0%)	0 (0.0%)	2 (2.4%)
<i>ἐγχωρεῖ</i>	1 (50.0%)	1 (50.0%)	2 (2.4%)
<i>ἐξαρκεῖ</i>	0 (0.0%)	3 (100.0%)	3 (3.6%)
<i>ἔξεστι</i>	9 (60.8%)	14 (39.1%)	23 (28.0%)
<i>ὑπάρχει</i>	0 (0.0%)	1 (100.0%)	1 (1.2%)
Sum	51 (62.2%)	31 (37.8%)	82 (100.0%)

Table 11 – Attraction across impersonal verbs.

There are two possible annotations to represent these features: either you group the verbs on their semantics solely, in such a way that there are two classes (quasi-modal impersonal verbs: True or False), or you annotate a three levels vector with values for general personal verbs, quasi-modal impersonal verbs and general impersonal verbs. We chose to tackle this problem with the former approach since there is only one impersonal verb that does not serve as a modal verb in our data (*δοκεῖ*), and its behaviour is too similar to that of the general personal verbs (see Table 12). There are conceptual reasons to treat *δοκεῖ* as a different kind of impersonal verb. This verb actually attributes a thematic role to its dative argument, that of an *experiencer*, which seems to validate a quirky personal construction with the same meaning, as (1), although its occurrence is seemingly marginal.

<sup>6</sup> We are not discussing lemma by lemma because of the lack of data for most of the verbs. For a contingency table build with the verbs *δοκεῖ*, *προσῆκει*, and *ἔξεστι*, and the values of attraction, the stats are  $\chi^2 = 27.939 (2) p << 0.05$ , Cramér's  $V = 0.614$ . The null hypothesis can be rejected and the effect is strong, but a more complete study comparing the kinds of verbs is recommended before assuming a lexical distinction.

attraction	False	True	Sum
v1			
δοκεῖ	36 (92.3%)	3 (7.7%)	39 (49.3%)
general personal	32 (80.0%)	8 (20.0%)	40 (50.7%)
Sum	68 (86.0%)	11 (14.0%)	79 (100.0%)
$\chi^2 = 2.4958$ (1) $p > 0.05$			
$\phi = 0.178$			

Table 12 – Comparison between δοκεῖ and general personal verbs.

(1) ἀλλ' εἰσιῶν μοι τὸν ὄνον ἐξάξειν δοκῶ (...)

I am decided to go in and fetch the ass. (Aristoph. *Vespae* 177)<sup>7</sup>

Thus, by means of Pearson's Chisquared Test, we can reject the null hypothesis (that the variables are independent):  $\chi^2 = 33.552$  (1)  $p = 6.9378e - 09$  with a strong correlation coefficient of  $\phi = 0.524$ . The frequency counts and proportion of the relation between the attraction and whether or not the  $V_m$  takes place in a quasi-modal impersonal construction is 13.

attraction	False	True	Sum
poss_verb			
False	68 (86.1%)	11 (13.9%)	79 (65.8%)
True	13 (31.7%)	28 (68.3%)	41 (34.2%)
Sum	81 (67.5%)	39 (32.5%)	120 (100%)
$\chi^2 = 36.370$ (1) $p = 1.6322e-09$			
$\phi = 0.551$			

Table 13 – Frequency counts and proportion of attraction and quasi-modal construction.

### 3.4 Resume

The case attraction in infinitive clauses of AG attested in our corpora is not evenly distributed (section 3.1). It is more frequent when  $V_{inf}$  is a copula with a medium correlation effect (subsection 3.2.1), and with quasi-modal impersonal verbs with a strong correlation effect (subsection 3.3.4),

<sup>7</sup> We read the participle εἰσιῶν as a predicate modifier inside the infinitive clause attracted to the nominative case as generally expected to happen in AG.

although general impersonal verbs do not govern sentences, differently from personal verbs (subsection 3.3.3). Herodotus uses the case attraction rather less frequently than Plato and Xenophon (subsection 3.3.2), although the later authors present different profiles when the data is submitted to a MCA (subsection 3.3.1). The test for the correlation between distance of  $X_i$  and  $Y_i$  allows us to reject the null hypothesis, but methodological issues refrain us from assuming the correlation as conclusive (subsection 3.2.3). The POS tag of predicatives in an infinitive clause with a copula as  $V_{inf}$  is not correlated with the attraction in our corpus due to the small number of tokens (subsection 3.2.2).



## 4 The linguistics of attraction

As we discussed in the previous chapter (3), the variables correlated to the case attraction in our corpus are: 1.  $V_{inf}$  is a copula; 2.  $X_i$  and  $Y_i$  are close to each other; 3.  $V_m$  is a quasi-modal impersonal verb, i.e. is read denoting a possibility (ἔξεστι, προσήκει, ἔξαρκεῖ etc). These variables co-occur and their correlation effect over attraction is composite, as it is expected from linguistic phenomena.

The “ $V_{inf}$  is a copula” means that the infinitive clause is predicative (“X is/becomes/appears\_as Y”), thus being formally equivalent to a small clause. Whereas one could give a pure morpho-syntactic explanation for its correlation to case attraction, the interaction between copular infinitive clauses and the other two variables correlated to case attraction should not be neglected.<sup>1</sup> The distance between  $X_i$  and  $Y_i$  and their order promptly involves another level of linguistic analysis, the pragmatics, since it has been shown in works by Dik (1995, 2007), Matic (2003) and Allan (2014) that AG systematically represents pragmatic information in the word order, specially with movement to the left-periphery of the clause. Furthermore Allan (2012) shows that a more complete system can be derived from the data for complex sentences, similarly with movement to the left-periphery of the sentence, but this time by means of a raising-like process. If  $Y_i$  is not preposed, the distance between it and  $X_i$  is defined by the clause internal position of each and the pragmatic function each exerts locally; else if  $Y_i$  is preposed, it means that it has been extracted to a sentential leftmost position by whatever mean of extraction one assumes to AG (scrambling, raising), being pragmatically more salient than a non-preposed  $Y_i$ . Lastly, as for the class of the impersonal  $V_m$ , the main factor coming into play is semantic, since it allows reading different information structures when compared to personal verbs and δοκεῖ, i.e. it allows reading a participial Y as a conditional clause with a non-local scope (“It is possible for the boy to kick a ball *if playing football*” = “*If the boy is playing football*, it is possible for him to kick the ball.” while “I advised the boy to kick the ball *if playing football*” ≠ “*If the boy is playing football*, I advised him to kick the ball.”). Again, information structure is not solely syntactic or semantic, but also interacts with pragmatics. In the case discussed, the participial Y and its clause works seemingly as a Setting to both the Infinitive and Main clauses.

Now, the words *cohesion* (KÜHNER; GERTH, 1898), *focus* (COOPER; KRÜGER, 2002), and *disambiguation* (LURAGHI, 1999) have been employed to explain the occurrence of case attraction in the literature, usually in the sense of *if in one sentence there is attraction, it is marking [cohesion, focus, disambiguation]*. In this chapter we address the issue of what these words could mean in face of the collected data, and how the above explained factors might hint for pragmatic and semantic effects coming into

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<sup>1</sup> The copular infinitive clauses occur more often when the  $V_m$  is denotes a possibility or has a quasi-modal value ( $\chi^2 = 15.851$  (1)  $p < 0.05$ ). The distance between  $X_i$  and  $Y_i$  also tends to be smaller and  $Y_i$  to be preposed when  $V_{inf}$  is a copula ( $W = 1542$ ,  $p < 0.05$ ).

play in sentences with attraction.

## 4.1 New and old information

One of the most telling example in our data is the passage when Xenophon narrates the start of Cyrus' expedition against the Greeks. Cyrus thinks he has a good reason for attacking the Pisidians and prepare his army of Greeks and non-Greeks. Previously, in 1.1, Xenophon narrated how Cyrus had build a network of Greek support by offering his help in local affairs and providing forces for some Greek generals. When the time comes for the attack, Xenophon writes:

- (1) ἐνταῦθα καὶ παραγγέλλει τῷ τε Κλεάρχῳ λαβόντι ἤκειν ὅσον ἦν αὐτῷ στρατεύμα καὶ τῷ Ἀριστίππῳ συναλλαγέντι πρὸς τοὺς οἴκοι ἀποπέμψαι πρὸς ἑαυτὸν ὃ εἶχε στρατεύμα· καὶ Ξενία τῷ Ἀρκάδι, ὃς αὐτῷ προειστήκει τοῦ ἐν ταῖς πόλεσι ξενικοῦ, ἤκειν παραγγέλλει λαβόντα τοὺς ἄλλους πλὴν ὅποσοι ἱκανοὶ ἦσαν τὰς ἀκροπόλεις φυλάττειν.<sup>2</sup>

At that time he also sent word to Clearchus to come to him with the entire army which he had, and to Aristippus to effect a reconciliation with his adversaries at home and send him the army which he had; and he sent word to Xenias the Arcadian, who commanded for him the mercenary force in the cities, to come with his troops, leaving behind only so many as were necessary to garrison the citadels.<sup>3</sup> (Xen. Anab. 1.2.1)

In this example, the first two obliques and their predicates agree in case: both τῷ Κλεάρχῳ λαβόντι and τῷ Ἀριστίππῳ συναλλαγέντι have dative in both positions. Conversely, the third pair shows case mismatch: Ξενία τῷ Ἀρκάδι ... λαβόντα has the oblique in the dative, but its co-indexed predicative is in the accusative, the default case for subjects and predicatives of infinitive clauses. If we were to explain the different case assignment in this example by the immediate differences between Clearchus and Aristippus' clauses and Xenias' clause, those would be: 1. the distance between controller and target (adjacency in the first pair, separation in the later); 2. word order of the sentence. The later factor is problematic for a number of reasons, but mainly because of the lack of similar examples in our data to compare it to. The former is the argument held by Luraghi (1999, pp.209ff.): the farther away the target is from the controller, the more ambiguous the reference of the adjective, so the more expected it is to find the default case for infinitive subjects, as a mean of disambiguation of the grammatical role. As mentioned above, the distance does indeed correlates with attraction in a statistically significant way: if the target is more than 2 words after from the controller, it its increasingly less likely to find

<sup>2</sup> Unfortunately, providing a gloss for the long passages is excessive and confusing. We will include the important morphological analyses in the main text for those less familiar with AG whenever a complete gloss seems inconvenient.

<sup>3</sup> All the translations of Xenophon's passages are from Brownson (1998), with slight modifications when necessary, unless otherwise pointed.

attraction, to the point where we don't see attracted predicatives after 10 words of distance, excluding a single outlier.<sup>4</sup> This seemingly supports Luraghi's position, although her account does not mention the direction of the distance (if the predicate occurs to the left of the oblique object or to the right), which affects the case attraction as intuitively displayed in Figure 12.

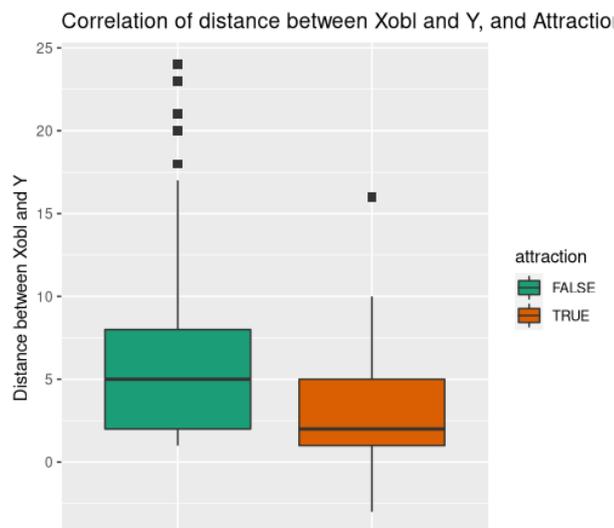


Figure 12 – Distances between  $X_i$  and  $Y_i$  in relation to case attraction.

To explain this correlation, Luraghi departs from the assumption that the case of embedded predicates either marks the identity between constituents of different domains or marks the local grammatical relations, in such a way that if the latter is contextually easier to retrieve, the attraction is licenced but not imposed, whilst as more constituents intervene between oblique and predicative, more grammatical relations come into play and it becomes more important to mark the subjecthood of the predicative than to mark its semantic identity to the matrix' oblique; an interpretation close to that shown in the assessments of Kühner and Gerth (1898) and Cooper and Krüger (1997, 2002). We agree that the availability of case features and accessibility of grammatical relations could be interacting with the licensing of case attraction, but this could explain just a small portion of data, in which the distance between oblique and predicative is rather long.

Another objection should be made on theoretical grounds. Why should the constituent holding SUBJECT grammatical relation require a morphological marking to be retrieved, when cross-linguistically this is the relation which can most easily be retrieved despite of morphological markings? If one employs the Noun phrase accessibility hierarchy (2) or the Grammatical Relations Hierarchy (3) to explain case variation as others did when explaining the distribution of relative attraction (GRIMM, S., 2007; KAKARIKOS, 2014; PROBERT, 2015), one should predict that subjects (and their predicatives) are the least likely constituents to require overtly morphological markings to retrieve their grammatical

<sup>4</sup> By the Wilcoxon test (WILCOXON, 1945), the values obtained are:  $W = 2210.5$ ,  $p\text{-value} = 0.00038$ .

relations. This does not mean that subjects are never expected to be marked in the morphology, but that if a construction allows subjects to be morphologically marked or unmarked, the subject is not expected to *require* markings, or rather, it is expected to require less than a direct object or any other constituent whose grammatical relation is to the rightmost position of the hierarchy.

- (2) Noun phrase accessibility hierarchy (KEENAN; COMRIE, 1977, 1979):  
 Subject > Direct Object > Indirect Object > Obliques > Genitives > Objects of Comparison
- (3) Grammatical Relations Hierarchy (BLAKE, 2004, 86ff. KAKARIKOS, 2014, p. 299):  
 Subject > Direct Object > Indirect Object > Oblique Meanings > Prepositional Complements

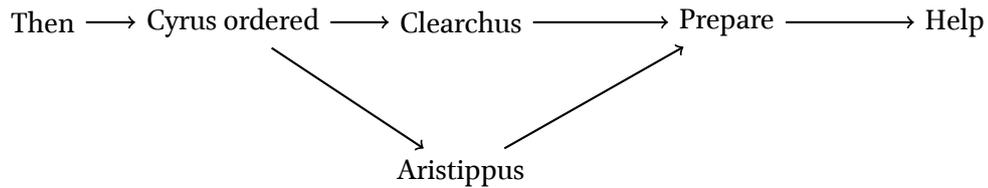
In sum, although not impossible, the requirement of morphological marking of subject constituents of infinitive clauses in contexts where the attraction is theoretically possible should be demonstrated with more than a single example, and whatever conclusion we find should account also for the variation in the cases where both outcomes co-occur.

We should tackle the correlation between distance and attraction from a different angle. “Word distance” surely relates with word order, and in a language such as AG in which the constituents might be organized with great liberty, “word distance” might be interpreted as a proxy for the pragmatic effects associated to word order (for word order and pragmatics in AG, see DIK, 1995, 2007; MATIĆ, 2003). Returning to our example, let us turn our attention to the discursive organization of it:

- (4) ἐνταῦθα καὶ παραγγέλλει τῷ τε Κλεάρχῳ λαβόντι ἦκειν ὅσον ἦν αὐτῷ στρατεύμα καὶ τῷ Ἀριστίπῳ συναλλαγέντι πρὸς τοὺς οἴκοι ἀποπέμψαι πρὸς ἑαυτὸν ὃ εἶχε στρατεύμα· καὶ Ξενία τῷ Ἀρκάδι, ὃς αὐτῷ προειστήκει τοῦ ἐν ταῖς πόλεσι ξενικοῦ, ἦκειν παραγγέλλει λαβόντα τοὺς ἄλλους πλὴν ὅποσοι ἱκανοὶ ἦσαν τὰς ἀκροπόλεις φυλάττειν.

At that time he also sent word to Clearchus to come to him with the entire army which he had, and to Aristippus to effect a reconciliation with his adversaries at home and send him the army which he had; and he sent word to Xenias the Arcadian, who commanded for him the mercenary force in the cities, to come with his troops, leaving behind only so many as were necessary to garrison the citadels. (Xen. Anab. 1.2.1)

This paragraph has two separate sentences, both headed by the verb παραγγέλλει “he orders”, a narrative present framed by the adverb ἐνταῦθα. The sentences are coordinated with their antecedent and with each other by the conjunction καὶ. The first sentence is organized as:



First we are informed about the temporal frame in which things happened, then that Cyrus ordered a named Greek general to prepare in a given way and help him somehow. Clearchus is ordered to gather the whole army he had and come to Cyrus with said army, while Aristippus is ordered to effect a reconciliation with his political adversaries in Thessaly and send his armies. If we were reading the whole narrative of the Anabasis, we would already be aware of Clearchus and Aristippus, and of their needed preparations to help Cyrus. First, in 1.1.10, we are introduced to the exiled Clearchus, who was raising and enjoying an army in Chersonese with funding from Cyrus — who we can assume was not funding said army out of generosity:

ἄλλο δὲ στράτευμα αὐτῷ συνελέγετο ἐν Χερρονήσῳ τῇ κατ' ἀντιπέρας Ἀβύδου τόνδε τὸν τρόπον. Κλέαρχος Λακεδαιμόνιος φυγὰς ἦν· τούτῳ συγγενόμενος ὁ Κύρος ἠγάσθη τε αὐτὸν καὶ δίδωσιν αὐτῷ μυρίους δαρεικοὺς. ὁ δὲ λαβὼν τὸ χρυσίον στράτευμα συνέλεξεν ἀπὸ τούτων τῶν χρημάτων καὶ ἐπολέμει ἐκ Χερρονήσου ὀρμώμενος τοῖς Θραξί τοῖς ὑπὲρ Ἑλλησποντον οἰκοῦσι καὶ ὠφέλει τοὺς Ἕλληνας· ὥστε καὶ χρήματα συνεβάλλοντο αὐτῷ εἰς τὴν τροφήν τῶν στρατιωτῶν αἱ Ἑλλησποντιακαὶ πόλεις ἐκούσαι. τοῦτο δ' αὖ οὕτω τρεφόμενον ἐλάνθανεν αὐτῷ τὸ στράτευμα.

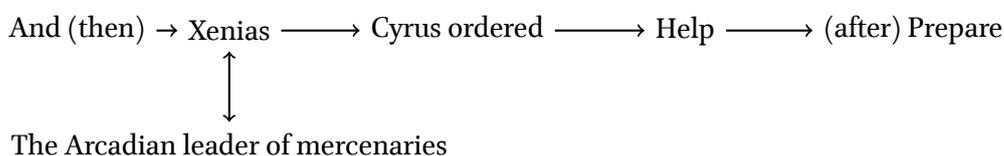
Still another army was being collected for him in the Chersonese which is opposite Abydus, in the following manner: Clearchus was a Lacedaemonian exile; Cyrus, making his acquaintance, came to admire him, and gave him ten thousand darics. And Clearchus, taking the gold, **collected an army** by means of this money, and using the Chersonese as a base of operations, proceeded to make war upon the Thracians who dwell beyond the Hellespont, thereby aiding the Greeks. Consequently, the Hellespontine cities of their own free will sent Clearchus contributions of money for the support of his troops. So it was that this army also was being secretly maintained for Cyrus. (Xen. Anab. 1.1.10)

The next paragraph introduces Aristippus to the reader, who offers future help to Cyrus in exchange for three months of salary for mercenaries. Cyrus proposes paying the for twice the time and for twice the manpower asked, under the condition that Aristippus should not make peace with its local political opponents. Xenophon does not explain precisely why it is of Cyrus interest to keep the political divide going in Thessaly, but suffice to say that this reconciliation should only come into being under Cyrus approval:

Ἀριστίππος δὲ ὁ Θεσσαλὸς ξένος ὧν ἐτύγχανεν αὐτῷ, καὶ πιεζόμενος ὑπὸ τῶν οἴκοι ἀντιστασιωτῶν ἔρχεται πρὸς τὸν Κύρον καὶ αἰτεῖ αὐτὸν εἰς δισχιλίους ξένους καὶ τριῶν μηνῶν μισθόν, ὡς οὕτως περιγεγόμενος ἂν τῶν ἀντιστασιωτῶν. ὁ δὲ Κύρος δίδωσιν αὐτῷ εἰς τετρακισχιλίους καὶ ἕξ μηνῶν μισθόν, καὶ δεῖται αὐτοῦ μὴ πρόσθεν καταλύσαι πρὸς τοὺς ἀντιστασιώτας πρὶν ἂν αὐτῷ συμβουλευέσθαι. οὕτω δὲ αὖ τὸ ἐν Θεσσαλίᾳ ἐλάνθανεν αὐτῷ τρεφόμενον στράτευμα. Again, Aristippus the Thessalian chanced to be a friend of Cyrus, and since he was hard pressed by his political opponents at home, he came to Cyrus and asked him for three months' pay for two thousand mercenaries, urging that in this way he should get the better of his opponents. And Cyrus gave him six months' pay for four thousand, and **requested him not to come to terms with his opponents until he had consulted with him**. Thus the army in Thessaly, again, was being secretly maintained for him. (Xen. Anab. 1.1.11)

Both participles of the first sentence of our example denote known states of affairs, since Xenophon's interlocutor — in this case us, the readers — had already been introduced to what forces Cyrus was raising in the Cheronese and Thessaly under Clearchus and Aristippus, and the conditions in which this was taking place.

Now, if we try to draw a schema for the second sentence, in which Cyrus orders Xenias, a man from Arcadia who was responsible for the mercenaries of the cities, to come to his help bringing just enough soldiers not leaving the cities unguarded, we would come up with a different scheme: first, there is a temporal framing with *καί* — whatever happened happened in the same time as the order to Clearchus and Aristippus —, Xenias is presented in his origin and attributions, and only then we learn what happened, Cyrus ordered him to come bringing enough personal. In this case the descriptive relative clause has the pre-verbal position inside the infinitive clause and carries the information needed to understand Cyrus order, i.e. who is he ordering and what binds this person to obey him, and not anymore the preparations which Xenias should make to offer his help.



A reason for the asymmetry in construction could be stylistic, as a way to avoid repetition, but we would argue that there is a discursive reason behind it: in contrast as to Clearchus and Aristippus, the reader is to this point unaware of the existence of an Arcadian mercenary leader named Xenias, so Xenophon would not be saying much by saying (5), not without bringing up the assumption that Xenias is contextually know.

- (5) καὶ παραγγέλλει τῷ Ξενίᾳ λαβόντι / λαβόντα τοὺς ἄλλους ἦκειν πλὴν ὅπόσοι ἱκανοὶ ἦσαν τὰς ἀκροπόλεις φυλάττειν.

In the first sentence, the one concerning Aristippus and Clearchus, the participle serves two purposes: it surely tells what Cyrus has ordered, but it also retrieves previously mentioned information that is contextually relevant to the present state of affairs of the narrative, i.e. it reminds the reader who Aristippus and Clearchus are and what binds them to Cyrus. This is very close to the pragmatic function one expects from earlier constituents of AG sentences considering the recent accounts on the topic of word order (DIK, 1995, 2007; MATIĆ, 2003; ALLAN, 2012, 2014), since the participles refer to contextually relevant information that is already assumed by the speaker to be shared with the reader, either discursively or culturally. Conversely, in the sentence concerning Xenias, the participle only adds new information, while the relative clause (together with the ethnonym Ἀρκάδι “Arcadian”) serves the function of defining who Xenias is and why Cyrus can give him orders in the first place. The information added by the participle in this case is brand new, just like Xenias is a new character in the narrative.

Another contrastive pair is interesting for this point of discussion, the example (3) from chapter 1 repeated here in (6).

- (6) a. συμβουλεύει τῷ Ξενοφῶντι ἐλθόντα εἰς Δελφοὺς ἀνακοινοῶσαι τῷ θεῷ  
 advice.3SG X.DAT.SG going.ACC.SG to-Delphi ask.INF the-god.DAT.SG  
 περὶ τῆς πορείας.  
 about-the-travel  
 He advises Xenophon to go to Delphi and ask the god about the travel. (Xen. Anab. 3 1 5)
- b. ἀφῆκε μοι ἐλθόντι πρὸς ὑμᾶς λέγειν τᾶληθῆ.  
 allowed.3SG I.DAT.SG going.DAT.SG in-front-of-you say.INF the-truth.ACC.  
 He allowed me to go and speak the truth in front of you. (Xen. Hell. 6 1 13)

The first chapter of the book 3 of Anabasis begins with the despair felt by the Greek armies allied to Cyrus when they realised that they were marching against the king Artaxerxes and not only against the Pisidians. Among those were Xenophon, the Athenian (and author of the book), who was there accompanying Proxenus. The author presents a short narrative explaining how Xenophon happened to be in the Greek force marching against Sardis, saying that he was invited by Proxenus, who had offered him the opportunity of befriending Cyrus himself. In doubt of whether or not he should travel with Proxenus to meet Cyrus, he takes counsel from Socrates, who consider to be a risk of Xenophon being accused of treason back in Athens and advises him to ask Apollo about the travel (6-a). Although it is expected that Socrates, when advising someone to consult a god, would be probably advising someone to consult Apollo in Delphi, the information is contextually new.

In contrast, from Hell. 6.1.4 to 17, Xenophon presents the discourse made by Polydamas in front

of the Lacedaemonians in which he asks them for help by telling how Jason had come to him and proposed him to bring the city of Pharsallus to his control. Polydamas objects the proposal by saying that it would be unjust for an ally of the Lacedaemonians to become an enemy without charges against them, to what Jason agrees and allows him to go tell the truth in front of them (6-b). The fact that he has been able to come to them is contextually inferable (he is actually there in front of them), but he must draw the attention of the listeners to that fact, since it could be impossible, had Jason not been reasonable; it thus is contextually important that the Lacedaemonians know how Polydamas got the chance to ask them for help against Jason, namely by not giving the city to a much stronger man with a much stronger army and by being righteous towards the city's allies.

In comparison, both participles convey different pragmatic information. The first adds new information that the reader could not otherwise retrieve from the context and that is the main part of the advice given by Socrates to Xenophon. The whole participial clause ἐλθόντα εἰς Δελφούς serves as the Focus of Socrates' advice. In the later sentence, the participle reinforces the contextually known state of affairs that will allow the listeners of Polydamas speech to put in context what he is saying and thus act accordingly, i.e. to abide by their alignment to Pharsallus and help them against Jason. I assume here that the participial clause ἐλθόντι πρὸς ὑμᾶς occupy two different pragmatic functions: the participle frames the action of "telling the truth" and is the focal point of the whole argument of Polydamas: he is not only "telling the truth" but doing so in front of them. The main reason for proposing this interpretation of the pragmatic content of the sentence is due to the fact that πρὸς ὑμᾶς can be read with both verbs without any prejudice for the understanding of the sentence.

In both pairs of examples discussed above, there are not many factors in our annotation that allow us to predict the attraction. The distance certainly plays a role in the first one, but to our understanding it is not the cause of attraction but a proxy to a pragmatic level of discourse organization; i.e. it is not because λαβόντα is far away from Ξενία that there is no case attraction in comparison to τῷ Ἀριστίππῳ λαβόντι and τῷ Κλέαρχῳ συναλλαγέντι, but because of the pragmatic structure of the sentences the word order — and thus the distance — and the attraction occur as they do. If our analysis is right, the last pair of examples (6) works as another argument to this: the distance in this example is the same — as it is the word order —, but the pragmatic structure is different and so is the case assignment.

#### 4.1.1 Quasi-modal $V_m$

While we have almost perfect contrastive pairs to show how different pragmatics co-occur with different case assignments in sentences whose main verb is personal, the same is not true to sentences with quasi-modal. We will nevertheless approach in the same guise as above these data points to verify whether or not pragmatic functions associated with leftmost positions of AG sentential syntax are also associated with attraction in this context. See, for example, (7), which could be analysed in

two constituent structures (7-a) or (7-b).

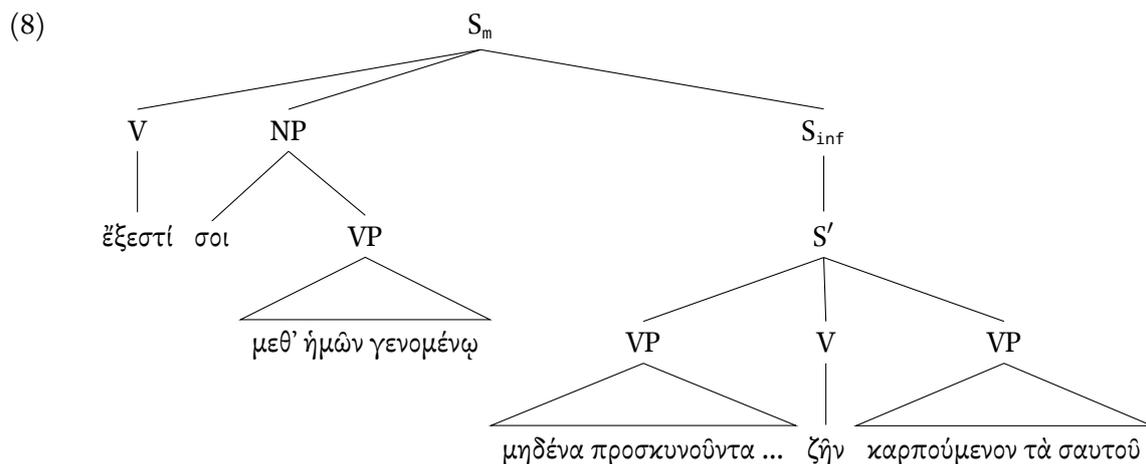
(7) νῦν δὲ ἔξεστί σοι μεθ' ἡμῶν γενομένῳ μηδένα προσκυνούντα μηδὲ δεσπότην ἔχοντα ζῆν καρπούμενον τὰ σαυτοῦ.

(...) but in fact it is within your power by joining with us to live in the enjoyment of your possessions without doing homage to anyone or having any master. (Xen. Hell. 4.1.35)

a. νῦν δὲ ἔξεστί σοι μεθ' ἡμῶν γενομένῳ μηδένα προσκυνούντα μηδὲ δεσπότην ἔχοντα ζῆν καρπούμενον τὰ σαυτοῦ.

b. νῦν δὲ ἔξεστί σοι μεθ' ἡμῶν γενομένῳ μηδένα προσκυνούντα μηδὲ δεσπότην ἔχοντα ζῆν καρπούμενον τὰ σαυτοῦ.

If one reads the constituent structure as (7-a), the sentence does not show case attraction, since μεθ' ἡμῶν γενομένῳ would be part of the same phrase as σοι, which could be represented in a sketchy tree as (8).



A translation that better represent this structure is “*It is possible to you, living with us, to live in the enjoyment of your possessions without doing homage to anyone or having any master*”. One should thus assume that the referent of the second person singular had been already living among the speaker’s community at the time of the utterance. This is what takes place in the next sentence where the aorist participles all indicate a state of affairs whose temporal scope is the same of the main verb and not of the infinitive:

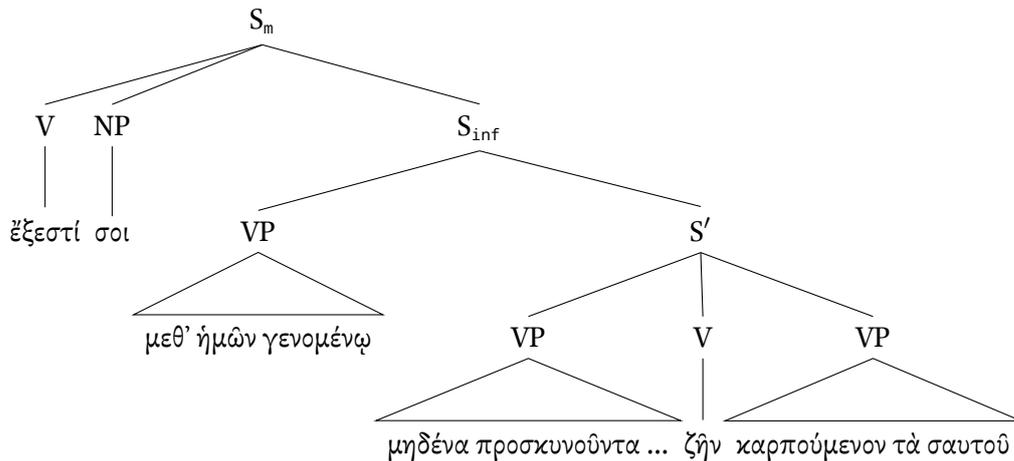
(9) ταῦτά τε ὦν ἐπιλεγόμενῳ καὶ βουλευομένῳ ἔδοξέ μοι τὰ ἡμίσεια πάσης τῆς οὐσίας ἐξαργυρώσαντα θέσθαι παρὰ σέ, εὖ ἐξεπισταμένῳ ὥς μοι κείμενα ἔσται παρὰ σοὶ σόα.

Considering and taking counsel concerning these matters, I resolved to turn half of my property into silver and deposit it with you, being well assured that it will lie safe for me in your

keeping. (Hdt. 6.86a)<sup>5</sup>

The same would hold for the sentences used as examples in the last section, as we have discussed also in [chapter 1](#). It seems to us in this context that the best structure for the intended meaning of (7) is (7-b), which could be represented in a tree like (10). The act of “going to live with us” is inside the temporal frame of the dynamic infinitive (i.e. the future).

(10)



In this passage, Agesilaus and Pharnabazus meet for trying a peace agreement. Pharnabazus asks explanations on why the Lacedaemonians are destroying his territory, bringing it to poverty and leaving him in the position of needing to gather left overs of the Greek army to eat. Agesilaus tries to convince Pharnabazus to change sides and join the Lacedaemonians against the Persians, showing that, among them he would no longer need to bow to other king and, thus, be able to live by his own power. I quote the discourse in full. Notice that the proposal of leaving the Persian rule, in bold, appears just before the sentence here discussed, in italic.

Ἄλλ' οἶμαι μὲν σε, ὦ Φαρνάβαζε, εἰδέναι ὅτι καὶ ἐν ταῖς Ἑλληνικαῖς πόλεσι ξένοι ἀλλήλοις γίγνονται ἄνθρωποι. οὗτοι δέ, ὅταν αἱ πόλεις πολέμια γένωνται, σὺν ταῖς πατρίσι καὶ τοῖς ἐξενωμένοις πολεμοῦσι καί, ἂν οὕτω τύχωσιν, ἔστιν ὅτε καὶ ἀπέκτειναν ἀλλήλους. καὶ ἡμεῖς οὖν νῦν βασιλεῖ τῷ ὑμετέρῳ πολεμοῦντες πάντα ἠναγκάσμεθα τὰ ἐκείνου πολέμια νομίζειν· σοὶ γε μέντοι φίλοι γενέσθαι περὶ παντὸς ἂν ποιησαίμεθα. καὶ εἰ μὲν **ἀλλάξασθαι σε ἔδει ἀντὶ δεσπότης βασιλέως ἡμᾶς δεσπότης, οὐκ ἂν ἔγωγέ σοι συνεβούλευον· νῦν δὲ ἔξεστί σοι μεθ' ἡμῶν γενομένῳ** *μηδένα προσκυνούντα μηδὲ δεσπότην ἔχοντα ζῆν καρπούμενον τὰ σαυτοῦ.* καίτοι ἐλεύθερον εἶναι ἐγὼ μὲν οἶμαι ἀντάξιον εἶναι τῶν πάντων χρημάτων. οὐδὲ μέντοι τοῦτό σε κελεύομεν, πένητα μὲν, ἐλεύθερον δ' εἶναι, ἀλλ' ἡμῖν συμμάχοις χρώμενον αὔξειν μὴ τὴν βασιλέως ἀλλὰ τὴν σαυτοῦ ἀρχήν, τοὺς νῦν ὁμοδόλους σοι καταστρεφόμενον, ὥστε σοὺς ὑπηκόους εἶναι. καί-

<sup>5</sup> All the translations of Herodotus' passages are from [Godley \(1920\)](#), with slight modifications when necessary, unless otherwise pointed.

τοι εἰ ἄμα ἐλεύθερός τ' εἶης καὶ πλούσιος γένοιο, τίνος ἂν δέοις μὴ οὐχὶ πάμπαν εὐδαίμων εἶναι; “I think you know, Pharnabazus, that in the Greek states, also, men become guest-friends of one another. But these men, when their states come to war, fight with their fatherlands even against their former friends, and, if it so chance, sometimes even kill one another. And so we today, being at war with your king, are constrained to regard all that is his as hostile: **as for yourself, however, we should prize it above everything to become friends of yours. And if it were an exchange that you had to make, from the King as master to us as masters, I for my part should not advise you to make the exchange; but in fact it is within your power by joining with us to live in the enjoyment of your possessions without doing homage to anyone or having any master.** And being free is worth, in my opinion, as much as all manner of possessions. Yet it is not this that we urge upon you, to be free and poor, but rather by employing us as allies to increase, not the King’s empire, but your own, subduing those who are now your fellow-slaves so that they shall be your subjects. And if, being free, you should at the same time become rich, what would you lack of being altogether happy?”

The participial clause *μεθ’ ἡμῶν γενομένῳ* frames the whole infinitive clause by setting in which condition the events denoted by the following participles and infinitive verbs could happen. It also retrieves the contextually important information of *σοὶ γε μέντοι φίλοι γενέσθαι περὶ παντὸς ἂν ποιησάμεθα* “as for yourself, we should prize it above everything to become friends of yours”, by rephrasing it as a decision on Pharnabazus’ hands. As for the other participles, they all denote brand new information as outcome of a certain state of affairs.

Just like in (7), the participle in (11) should be read inside the temporal frame of the infinitive clause and as the state of affairs necessary for the fruition of the desired outcome, i.e. Sphodras is asking Cleonymus to use the affection Archidamus had towards him to bring a benevolent Agesilaus to court.

(11) ἔξεστὶ σοι, ὦ υἱέ, σῶσαι τὸν πατέρα, δεηθέντι Ἀρχιδάμου εὐμενῆ Ἀγησίλαον ἐμοὶ εἰς τὴν κρίσιν παρασχεῖν.

It is within your power, my son, to save your father by begging Archidamus to make Agesilaus favourable to me at my trial. (Xen. Hell. 5.4.26)

One might object here that the participial clause is placed in the rightmost position of the sentence and thus should represent a less salient pragmatic function. There are reasons to assume that such objection holds at least some truth, but we might consider that the pure linearisation of the constituents does not necessarily represents the whole pragmatic organization of the sentence. If we contrast the sentence in (11) with the second sentence of the passage in (1), the one about Xenias, we will surely notice that the pragmatic information carried by the participial clause has different de-

grees of importance. In the later the participial clause determines the set of preparations Xenias must do before getting himself involved in the main state of affairs (i.e. coming with the gathered men), this action is not pragmatically essential to the main action, it does not render the action of coming to Cyrus impossible – even though it could be detrimental to Cyrus’ intents having some *akropoleis* unguarded – whereas in the example just above (11), if the son of Sphodras, Cleonymus, does not intervene to render Agesilaus benevolent towards Sphodras, his father would hardly be safe from a bad result in court. Notice that we are not only speaking in pragmatic terms, but also in semantic terms that analyse the structuring of the events of the sentences. In a broader sense, what seems to be the case not only in this sentence, but in sentences with the  $V_m$  of quasi-modal type, a conditional reading is available to their participles, while in non-attracted examples in the same context do not allow such a reading, being generally read as an accompanying state of affairs possible to the oblique referent:

- (12) ἐξεῖναι γὰρ σφίσι ναῦς πληρώσαντας πολὺ πλείους τῶν Ἀθηναίων ἐλεῖν λιμῶ τὴν πόλιν αὐτῶν.  
 (For they said) it was within their power to man far more ships than the Athenians had and to capture their city by starvation. (Xen. Hell. 5.4.60)

Following Bary and Haug (2011), Haug (2011, 2012), Fabricius-Hansen and Haug (2012) and Haug and Nikitina (2016a,b), the event functions participles might have assigned to them are, from the more independent to the least, Frame, Independent Rheme and Elaborations.<sup>6</sup> Conditionals are generally framings: “inside a set of such and such conditions, the state of affairs is true.” Although event frames, as well as pragmatic Settings, tend to be placed in leftmost positions in the linear order of the sentence, it seems to be the case that exceptions are not impossible, especially when the participial clause serving as Frame/Setting has a particularly more complex syntactic structure.

The fact that the semantics of events appear to be symmetrically related to the pragmatics of the constituents is a peculiarity of quasi-modal impersonal verbs, since the structure of events is semantically important for the speaker and interlocutor *be in the same page* about the truth-conditional state of affairs. In the example (11), it is particularly important that Cleonymus knows that saving his father depends on his efforts to convince his lover Archidamus to make Agesilaus benevolent towards his father. Such impersonal verbs should be expected to be particularly prone to be followed by attracted participles due to the fact that these participles might participate in the truth-conditional state of affairs in a rather significant way, whereas sentences with personal main verbs are not so expected to take participles denoting a condition to the order or advice represented by the infinitive clause. We can not conclude that it is impossible to find such examples in a wider corpus, but this could be the main reason behind why these quasi-modal verbs are correlated to the case attraction in our data.

<sup>6</sup> See the section 2.3 for the precise definitions.

### 4.1.2 Copula

Before discussing the formal reasons for the case attraction to take place more frequently in copular infinitive clauses, we should note how the pragmatic and semantic tendencies shown in the last sections also hold in this context, as the examples below illustrate:

- (13) a. δοκέω ἡμῖν Αἰγινητέων δέεσθαι τὸν θεὸν χρήσαι τιμωρητήρων γενέσθαι.  
The god's answer is, I think, that we should ask the Aeginetans to be our avengers. (Hdt. 5.80)
- b. Ἐρετριέες δὲ πυνθανόμενοι τὴν στρατιὴν τὴν Περσικὴν ἐπὶ σφέας ἐπιπλέουσιν Ἀθηναίων ἐδεήθησαν σφίσι βοηθῶν γενέσθαι.  
When the Eretrians learned that the Persian expedition was sailing to attack them, they asked for help from the Athenians. (Hdt. 6 100)

In the section of (13-a), the Thebans searching for revenge against the Athenians consult the oracle at Delphi, which tells them they should have a many-voiced (πολύφημον) response by entreating (δέεσθαι) their “nearest” (τῶν ἄγγιστα). Notice that the verb δέομαι does not come with the infinitival complement clause.

ἡ δὲ Πυθίη ἀπὸ σφέων μὲν αὐτῶν οὐκ ἔφη αὐτοῖσι εἶναι τίσιν, ἐς πολύφημον δὲ ἐξενείκντας ἐκέλευε τῶν ἄγγιστα δέεσθαι.

The Pythian priestess said that the Thebans themselves would not be able to obtain the vengeance they wanted and that they should lay the matter before the “many-voiced” and entreat their “nearest.” (Hdt. 5.79)

In the Theban assembly, it is proposed that the “nearest” stands for the nearest neighbors, the men of Tanagra, Coroneae and Thespieae, until an unnamed fellow suggests:

ἐγὼ μοι δοκέω συνίεναι τὸ θέλει λέγειν ἡμῖν τὸ μαντήιον. Ἄσωποῦ λέγονται γενέσθαι θυγατέρες Θήβη τε καὶ Αἴγινα: τούτων ἀδελφεῶν ἐουσέων, δοκέω ἡμῖν Αἰγινητέων δέεσθαι τὸν θεὸν χρήσαι τιμωρητήρων γενέσθαι.

I think that I perceive what the oracle is trying to tell us. Thebe and Aegina, it is said, were daughters of Asopus and sisters. The god's answer is, I think, that we should ask the Aeginetans to be our avengers. (Hdt. 5.80)

In his proposal, the “nearest” should mean the “closest relatives”, thus the Aeginetans that should be the τιμωρητήρων “avengers” which expands the meaning presupposed in the pythian response.

In contrast, the sentence in (13-b) adds brand new information to the narrative, since there is not any previous discussion on whether or not the Eretrians would ask for help from the Athenians,

despite the fact that they were neighbors and participate in military alliances mentioned in the Histories (e.g. 5.99ff).

Nevertheless, if we compare to the last sections, we did not present any reason to assume that predicates in copular infinitive clauses are associated with any particular pragmatic structure. There are seemingly more economic analyses for these examples, namely that a couple of syntactic rules might be taking place here. It is assumed that in sentences of the type “The boy is happy”, the copula works as a spell-out of case features in languages that do not mark the contrast between a nominative and other case(s). Languages that do not lack such case distinctions on the morphosyntax are predicted to use the copula verb less in unmarked constructions (say a present durative), only resorting to it when the verb is necessary to mark other semantic values (say to mark a past tense or an emphasis). Ancient Greek is a language of this second kind, since it contrasts morphologically its nominatives from other cases, and the prediction that the copula verbs might be omitted in unmarked contexts is born out in sentences as (14).

- (14) ὁ μέν δίκαι-ος ἄρα εὐδαίμων-∅, ὁ δ' ἀδικ-ος  
 DET(N.SG.M) PART just-N.SG.M PART happy-N.SG.M det(N.SG.M) CONJ unjust-N.SG.M  
 ἄθλι-ος.  
 miserable-N.SG.M  
 “Then the just is happy and the unjust miserable.” (Plat. Resp. 354a trans. Shorey (1969))

These sentences are economically analysed as special cases of Small Clauses, in a structure like (15), and it is expected that due to the lack of a verbal or prepositional head, structural case assignment does not occur and the nominative marks simply a default. The more troublesome way to analyse such sentences is to assume a verbal ellipsis, but it is virtually impossible to give positive evidence of an empty verbal head in this context.

- (15)
- 
- ```

graph TD
  SC[SC] --- DP[DP]
  SC --- AP[AP]
  DP --- D1[ὁ δίκαιος]
  AP --- A1[εὐδαίμων]
  
```

Our data is not exactly like (14), since we are dealing with a complex sentence whose infinitive is a copula. Infinitive clauses in AG have the peculiarity, shared with other languages, that their subjects take accusative as default case. When the infinitive clause is also a small clause (i.e. a copular construction), the case of the predicative is also accusative in syntactic agreement with its controller (i.e. the subject), and the copula generally is overtly present. If we assume that even in such constructions the copula is a *spell out* of case, it should be just marking that the relation between the accusative controller and accusative target is that of a subject and its predicative, excluding any pos-

sible government relation internal to the infinitive clause, and leaving case as a feature external to the domain. The case would be thus a completely external feature, not marking any syntactic relation between infinitival subject and predicate. In a sentence allowing case attraction with a copular infinitive, a matrix clause’s argument is identified with the subject of the copular infinitive clause, and the relation between infinitival subject and predicative is marked by the copula. Whichever is the case of the arguments in the infinitive clause, it can only be an externally motivated case and, semantic justifications, as indexation, are relatively freer to produce agreement. This contrasts for example from a non-copular infinitive sentence, in which the infinitive verb assigns thematic roles for their arguments, and thus also takes part on the case assignment process, which might if not block, at least restrict the availability of semantic agreement.

This is a long way to justify the long-distance agreement being preferred with copular infinitive clauses, and might as well be empirically unnecessary. If we accept the Predicate Hierarchy (12), we predict that nouns and adjectives are more likely to agree under semantic justification — not on syntactic justification — more frequently than participles are. Since semantically a small clause or any kind of copular clause will arguably prefer the selection of a noun and adjective as its predicative rather than a participle, we can expect copular infinitive clauses to be correlated with semantic agreement and thus with case attraction.<sup>7</sup> This is supported by the relative distribution of types of predicates and copular infinitives in our data (Table 14), but it is impossible with it to extend our conclusions for AG as a whole or even to the dialects of the authors due to the small counts (see also subsection 3.2.2).

| copula | False       | True       | Sum          |
|--------|-------------|------------|--------------|
| y_POS  |             |            |              |
| adj    | 1 (6.3%)    | 15 (93.7%) | 16 (13.3%)   |
| noun   | 1 (11.0%)   | 8 (89.0%)  | 9 (7.5%)     |
| part   | 95 (100.0%) | 0 (0.0%)   | 95 (79.2%)   |
| Sum    | 97 (80.0%)  | 24 (20.0%) | 120 (100.0%) |

Table 14 – Frequency counts and proportion of  $Y_i$  Part-Of-Speech and copula.

Both this analyses present shortcomings. The first is conceptually convoluted, empirically hard to falsify, and tends to circularity: “case is not important to copular constructions, thus case attraction is relatively more likely, so that case is not so important to copular constructions”. The second is empirically promising, but the amount of data in our possession is too small. We prefer the second

<sup>7</sup> A selected participle is usually associated not with a copular construction, but with periphrastic constructions. E.g. the AG periphrastic perfect.

one, if not as an convincing argument for the causal relation, at least as an economical explanation that is falsifiable.

The impossibility of testing properly in our corpus how the attraction happens in a construction whose  $V_{inf}$  is a copula, and the effects of the type of  $Y_i$  (namely if it is an adjective or a noun) demands a further collection of data of prose writers. We expect, nevertheless, that the case attraction takes place more frequently with nouns than with adjectives, as a prediction from the Predicate Hierarchy, just as Kühner and Gerth (1898, p. 24–7) did. Furthermore, we also predict that in a bigger dataset, the attraction would co-occur with predicates occurring in the leftmost positions of the pragmatic structure of AG sentences, retrieving contextually necessary information.

## 4.2 Agreement cross-linguistically

I have argued in previous chapters that one would profit from considering case attraction as non-canonical instance of agreement due to the fact that: 1. it is a clear instance of agreement, co-occurring with gender and number agreement;<sup>8</sup> 2. its agreement feature is *case*, a feature which is typologically determined by government and not by agreement; and 3. it is an exception of the principle of locality. According to Corbett (2006, 155f.), systems of agreement in which one finds two different patterns generally reserve the more canonical kind for *syntactic agreement* and its counterpart for *semantic agreement*, i.e. agreement under semantic justification. In general, such systems select one of the agreement options under certain conditions (e.g. animacy) that can be either absolute (as animacy in Miya) or relative (as animacy in Russian). Relative conditions are those that rely on other factors to determine the agreement outcome or that might be influenced by those other factor. In Russian, for example, animacy conditions the agreement across different types of domains, targets and controllers, but the outcome is not perfectly predictable only from the animacy, but by its co-occurrence with factors such as grammatical relation (TESTELEK, 2001, p. 325–6 apud CORBETT, 2006, p. 194) and case (CORBETT, 1993).

Previously, Corbett (1979) had already argued for a cross-linguistic condition that takes precedence over language particular factors, namely the Agreement Hierarchy:

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<sup>8</sup> There is a terminological divide in the present day linguistics that I came to know because of Professor Maria Polinsky in personal communication, to whom I am grateful for the attention and discussions. It has been assumed that *agreement* encompasses two different phenomena, the *agreement proper* between a noun and a verb, which should be a bottom-up process, i.e. the verb looks for its  $\phi$ -features from its arguments placed upwards in the structure; and the *concord* between nominals (nouns, adjectives, determiners), which should be a top-down derivation by which the agreement features of a given noun go down the structure marking unmarked nominal heads. The later is discussed in a couple of papers by Norris (2017a,b). For the purposes of this work, we will use *agreement* to refer to the class of phenomena characterised by co-variance of features of any kind in both contexts.

## (16) The Agreement Hierarchy (CORBETT, 1979)

attributive > predicative > relative pronoun > personal pronoun

For any controller that permits alternative agreements, as we move rightwards along the Agreement Hierarchy, the likelihood of agreement with greater semantic justification will increase monotonically (that is, with no intervening decrease).

To our phenomenon, this hierarchy shows no theoretical interest, due to the fact that the domain of case attraction is always *predicative*. The second general constraint that seems to be relevant across languages in determining the outcome of double agreement systems is the Predicate Hierarchy first proposed by Comrie (1975):

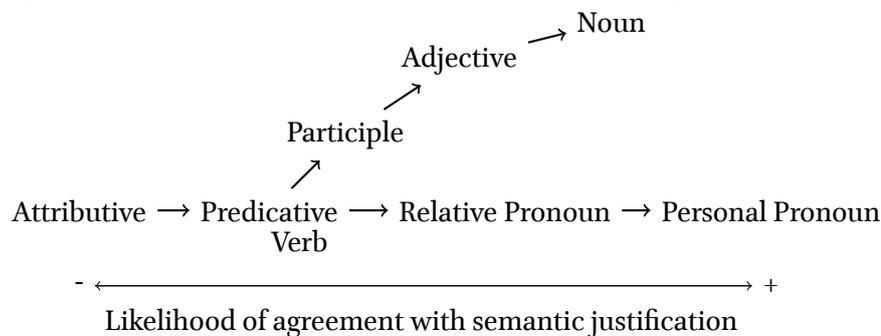
## (17) The Predicate Hierarchy (COMRIE, 1975; CORBETT, 2006, p. 231)

verb > participle > adjective > noun

For any controller that permits alternative agreements, as we move rightwards along the Predicate Hierarchy, the likelihood of agreement with greater semantic justification will increase monotonically (that is, with no intervening decrease).

Corbett (1983) and Leko (2000) provide evidence for the composite effect of these hierarchies in Slavic languages, from which the following hierarchy was proposed:

## (18) Agreement and Predicate Hierarchies (CORBETT, 2006, p. 233):



As we mentioned above, the examples with copular infinitives are economically explained by such a hierarchy (or at least by Comrie's Predicate Hierarchy), since the predicates of copular constructions are more frequently than not adjectives and nouns. Despite the strong effect expected — and partially verified in our data — following the Agreement and Predicate Hierarchy, this only has precedence over other factors that still might take their part on resolving the double outcome of agreement, which we will now discuss.

### 4.2.1 Long-distance agreement and pragmatics

The long-distance agreement is a particularly non-canonical type of agreement, since it violates the expected locality of agreement, i.e. it takes place in a domain whose controller and target are in different clauses. Here the contrast between two types of agreement, the *agreement proper* and the *nominal concord* is important. Consider the following sentence from Portuguese:

- (19) O            menino    disse                            que era                            bonito.  
 DET(M.SG) boy(M.SG) say(PRF.IND.3SG) CONJ be(PRF.IND.3SG) pretty(M.SG)  
 The boy said that he was pretty.

In such a sentence one hardly would argue that the features [+Masculine + Singular] in *bonito* are assigned via long-distance agreement with *menino* as the controller. Such analysis would require linguists to assume that LDA (*long distance agreement*) is much more widespread than currently considered and thus have to explain how the principle of locality is so very often violated. The much more economic analysis is to assume a local *pro* in the subordinate clause which locally provides the gender and number features to the predicate, i.e. this pronominal empty position is the controller of *bonito*. Nevertheless it seems to be part of the definition of LDA to be a domain that competes with another domain that can provide local agreement. In the example of (20) the LDA is an option because the language allows two domains to determine agreement: a local domain whose controller is the whole subordinate clause and another which breaks locality accepting *magalu* as the controller.

- (20) a.    eni-r                            [užā            magalu            b-āc'-ru-ḥi]  
           mother(II)-DAT boy(I)-ERG bread(III)[ABS] III-eat-PST\_PTCP-NMLZ[ABS]  
           *r-ḥy-xo*.  
           IV-know-PRS  
           'The mother knows that the boy ate the bread.'<sup>9</sup>
- b.    eni-r                            [užā            magalu            b-āc'-ru-ḥi]  
           mother(II)-DAT boy(I)-ERG bread(III)[ABS] III-eat-PST\_PTCP-NMLZ[ABS]  
           *b-ḥy-xo*.  
           III-know-PRS  
           'The mother knows that the boy ate the bread.'<sup>10</sup>

Not to dig too deep in the syntax of Tsez, it suffices to say that it is an ergative language whose transitive verbs agree in class (from I to IV) with its object (marked with absolutive case), and that if the object is a clause, the verb is marked with CLASS IV. In (20-a), the second rule above is applied as expected: the clause "that the boy ate the bread" works as object of the verb *-ḥy-* "to know" which has the morpheme of CLASS IV *r-*. In (20-b), the morpheme of CLASS III *b-* marks the verb, which indicates

<sup>9</sup> Example (106) in Corbett (2006, p. 66).

<sup>10</sup> Example (107) in Corbett (2006, p. 66).

that agreement is taking place not between the whole embedded sentence, but between the absolutive object *magalu* (CLASS III) of the embedded clause and the main verb *-iy-* “to know”. Polinsky and Comrie (1999) present all the possible variations of word order and convincingly demonstrate that the second construction (20-b) is preferred — if not restricted — to cases in which the topic of the sentence is the embedded clause. Although the case of Tsez is to our knowledge the only case of LDA being favoured by pragmatic factors, the similarities are quite enticing.

Also in case attraction, one finds a pair of domains available for agreement. The local agreement is internal to the infinitive clause: an empty pronominal position acts as the controller to the predicate, and this pronominal position already has gender, number and case. Whereas gender and number are shared with the matrix’ oblique, the case is assigned as the default for subjects in the infinitive clause, so that in the local (and canonical) agreement, the predicate gets accusative case assigned. In contrast, the matrix’ oblique might also be the agreement controller and trigger LDA. As we have shown in chapter 3, the LDA is less frequent and generally dependent on other factors to trigger. Notice however that there is a pair of important differences between the LDA in Tsez and case attraction. First, in Tsez the controller is in the subordinate clause, while in AG the controller is in the matrix clause. Secondly, while in Tsez it is the pragmatic function of the controller that seems to be constraining the LDA, we have shown that in AG there are reasons to assume that the pragmatic function of the *target* constrains the choice between the two agreement options.

We should not jump into the conclusion that the similarities between Tsez and AG form a typological trend, but we have reasons to assume that, if anything, the case attraction shows, just as LDA, a double domain that allows both local and extra-local agreement (or concord) outcomes and the latter is correlated to particularly marked pragmatic functions. If our assumption is sound, the phenomenon of case attraction in infinitive clauses of other languages than Ancient Greek (e.g. Latin, Lithuanian, Classical Armenian, Gothic and Old Church Slavonic) could prove useful in understanding how LDA is cross-linguistically distributed.

#### 4.2.2 Distance and agreement

When discussing distance, we chose to consider each word as a *step* and count the relative distance. The results turned out to be statistically relevant, although the decision was fairly arbitrary. Returning to the literature, Corbett (2006, 235f.) discuss the effects of “real” distance, using the results from Levin (2001), showing positive results for the correlation between distance and agreement with semantic justification. Levin’s study shows that pronominal forms indexed to a *committee* noun<sup>11</sup> regularly assume plural the further away they are from the *controller*, showing a stronger tendency

<sup>11</sup> The full list of words studied is given in Levin (2001, p. 50): *army, association, audience, band, clergy, club, commission, committee, company, council, couple, crew, crowd, department, faculty, family, government, group, majority, minority, party, population, the press, the publics, staff, team.*

for a semantic justification of agreement, as shown in Table 15 (CORBETT, 2006, p. 236). Levin (2001, 100ff.) further investigates the effects of syntactic boundaries in the same phenomenon and demonstrates that the likelihood of semantic agreement increases slightly but significantly from sentences in which *controller* and *target* are on the same clause to those that are in different clausal levels. The first of Levin's conclusions is the opposite of what we have found out with AG case attraction with infinitive clauses: there seems to be a decrease on the case attraction the further away the *target* is from the controller, even if we employ absolute values of distance and do not take precedence in account. The phenomena are nevertheless quite different, specially because we are working with case, a non-canonical agreement feature.

|                    | 0–4 |          | 5–9 |          | 10–14 |          | 15+ |          |
|--------------------|-----|----------|-----|----------|-------|----------|-----|----------|
|                    | N   | % plural | N   | % plural | N     | % plural | N   | % plural |
| NYT                | 739 | 19       | 398 | 39       | 144   | 51       | 102 | 69       |
| SMH                | 431 | 26       | 211 | 49       | 64    | 64       | 40  | 82       |
| <i>Independent</i> | 624 | 47       | 290 | 66       | 113   | 72       | 67  | 82       |

Table 15 – Agreement of personal pronouns with noun phrases headed by *committee* nouns in written American English, Australian English, and British English according to distance in words (LEVIN, 2001, p. 98).

The different results between our work and Levin's are hard to account for if we consider the distance between controller and target as a simple question of linearisation. Linearisation plays a major role in the case of Levin's account as his conclusions show:

(...) In speech, memory limitations and the lack of time to plan an utterance can largely explain the increase in plural agreement. The increase of plural agreement in writing is more difficult to account for, as writers can go back and check the form of the controller. Since in spite of this the plural is more frequent after long intervals also in writing, this is probably an indication that the plural meaning of a controller becomes more important when the targets are far away in this medium as well. It seems clear that targets acquire greater independence of their controllers when they are separated by many words and that the acceptability of plural agreement increases with the distance. Prescriptive pressure to adhere to the "correct" alternative of singular agreement becomes weaker when there are words intervening between controllers and targets. ... (LEVIN, 2001, p. 99)

Although we are not particularly convinced by this explanation due to its strong reliance on the speaker's performance and find Barlow (1991) a better analysis of the facts, it serves to ensure a contrast between Levin's data and ours. An account of effects of controller and target distance in English *committee* nouns does not need to take in consideration the pragmatic functions of any of the two constituents, since the linear word order is strongly determined by syntactic reasons in the language. In Ancient Greek, word order is not so much dependent on the syntactic functions attributed to each

constituent and it has been known to be fairly free. We have already pointed out that the works of Dik (1995, 2007), Matic' (2003) and Allan (2012, 2014) have systematized the pragmatic structuring of the Ancient Greek sentence, which results in different outcomes of linear word order. This suggests that in analysing distance between words or constituents as a linguistic factor in AG requires an analysis of the pragmatic functions of these.

It is nevertheless impossible to rule out the possibility of performance and cognition being the reason behind the correlation between distance and attraction. If we assume as Corbett (2006, p. 133) that the case features are non-canonical because they are not inherent features of nouns and pronouns and that they are assigned syntactically by government, we should expect that the case of a noun of index *i* is easily *overwritten* after a syntactic boundary in which the government relations over the referents of index *i* have changed. The case would still be available in memory to push forward a long-distance agreement when the “real” distance was relatively low, and progressively forgotten the further away the constituents were. This could be tested in phenomena of modern living languages with time of response and eye tracking experiments, but a corpus based research with AG can not but provide typological intuitions, and one must also address the interface pragmatics-linearisation.

### 4.3 Pragmatics and Case Attraction in Ancient Greek

Although Polinsky and Comrie (1999) have shown that Tsez long-distance agreement is constrained by pragmatic functions, there is no typological evidence to assume that this is a cross-linguistic feature of agreement in general. Our own findings notwithstanding do show that case attraction in Ancient Greek infinitive clauses might be explained by the pragmatic function of the agreement's target or, in the cases that the target is a participle, by its function in the event structure (as proposed in HAUG, 2011, 2012; FABRICIUS-HANSEN; HAUG, 2012; BARY; HAUG, 2011; BARY, 2018; HAUG; NIKITINA, 2016a,b).

The rationale behind this trend is the same the works of word order in AG have used to justify the relation behind linearisation and pragmatics: Givón's “*Attend first to the most urgent task*” (1983, p. 20). We use in this work the levels proposed by Allan (2012, 2014): 1. Theme: the constituent about which information is given; 2. Setting: the constituent which contextually frames the information; 3. New or Contrastive Topic (NCTop): the constituent that represents new or contrastive information considered an appropriate foundation to the subject matter (DIK, 2007, p. 31); 4. Narrow Focus (NFoc): the most salient *single* constituent, corresponding to the most important part of the information carried by the sentence; 5. Given Topic: the constituent that represents information already shared between speaker and interlocutor considered an appropriate foundation to the subject matter (MATIĆ, 2003, pp.582ff); 6. Broad Focus: the most salient group of constituents, corresponding to the most important part of the information carried by the sentence.

The first categories in this set present information that the speaker includes to make sure that the

interlocutor is “on the same page”, which is then important for the actual information being conveyed by the later constituents to be understood. This is not necessarily represented in linear order, but it is required that the sentence has elements enough for the interlocutor properly parse the sentence parts in the right degree of “pragmatic antecedence” (at least in an *optimal exchange* between speaker and interlocutor). In AG, the linear order is one of the expedients for marking the relative pragmatic function of the constituents of a sentence.

We argue here that the set of correlations statistically significant between linguistic factors and case attraction shows that either: 1. the attraction is an optional expedient for the speaker to mark *pragmatic antecedence* of the predicative constituent; 2. the attraction is a byproduct of the expedients used by the speaker to mark *pragmatic antecedence* of the predicative constituent. Our data is not enough to ratify either of these propositions. Speaking in purely theoretical terms, we consider the later to be the most likely, since Polinsky (2003) shows that many non-canonical agreement patterns specially possible long-distance agreement, generally by means of a clause mixing, scrambling, or raising-like phenomenon and the pragmatic word order of AG has been considered a result of either scrambling Devine and Stephens (2000) or raising Allan (2012). Also, although empirically problematic, all the transformational and minimalist approaches to que question of case attraction consider it a EQUI-deletion (deletion of co-referent noun heads) which leaves a empty pronominal head.<sup>12</sup>

Keeping the typological and quantitative inclination of this work, we propose a working hypothesis to be further tested, but that fairly works in the our database:

- (21) **Hypothesis:** In Ancient Greek infinitive clauses, a predicate is more likely to have case assigned under semantic agreement, i.e. under case attraction, the higher it is in a pragmatic antecedence hierarchy. The effect of such hierarchy is posterior to the effect of the Agreement and Predicate Hierarchy.

**Proposed Pragmatic Antecedence Hierarchy:**

Theme → Setting → N/C Topic → Narrow Focus → Given Topic → Broad Focus

+ ←—————→ -

Likelihood of agreement with semantic justification

<sup>12</sup> See our discussion in section 1.2 over Lakoff (1970), Andrews (1971), Quicoli (1982), Tantalou (2003), Spyropoulos (2005), Sevdali (2013) and Paulsen (2014).

## 5 Conclusion

The main contribution of this work is, to our knowledge, the collection and annotation of data concerning case attraction in infinitive clauses of Ancient Greek, without which the state of our knowledge of the phenomenon would have stayed restricted to mostly impressionistic accounts or theoretical approaches employing unrepresentative data as confirmative evidence. As a result of the data collection we were able to present a distributional description of the case attraction and access its place in the syntax of Ancient Greek, i.e. its relation to the strongly pragmatically structured linearisation, and also its similarities to agreement phenomena across languages.

### 5.1 Defining case attraction

The definition of *case attraction* as a linguistic phenomenon springs from a period in which grammarians used to take Latin as the model with which to frame other languages and thus separate *default* constructions from *unexpected* ones. Whereas prior to Sánchez de las Brozas (1587) and Lancelot (1658, 1709) the few scholia commenting passages in which without attraction used to consider the attraction the “usual” construction, the authors from the 16th and 17th centuries assumed it as a particularity of Greek, whose occurrence in Latin was a *Hellenismus*, a violation to Latin grammar in favour of a Greek syntactic flavour.<sup>1</sup> In the 19th century, Buttman (1826), Hermann (1834) and Hocheder (1833) adapted this concept to their philological framework, keeping nevertheless much of the assumptions held by Sánchez and Lancelot. The understanding of the phenomenon was as a psychosocial “desire for unification” which was being projected or represented in syntax (BUTTMANN, 1826; HOCHEDER, 1833) or as a stylistic choice, a kind of rhetorical trope (HERMANN, 1834). These evaluations were mostly put aside in the later grammars, such as Kühner and Gerth (1898) and Kühner, Holzweissig, and Stegmann (1877), seemingly influenced by Jacob Grimm (1858) and Förster (1868, 1902), as shown by Wackernagel (1924). In this later works, case attraction became a concept specialized to account for case attraction of relative pronouns (*attractio relativi* or *attractio inversa*), up to the point that the contemporary grammars and linguistic assessments left other instances of case attraction out of their discussions.

In this work we tried to verify whether or not the accounts from the 16th to the 19th centuries were sound, despite the fact they were not particularly data driven and mostly impressionistic. The attraction proved to be a marked resolution when two cases were available for predicatives of infini-

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<sup>1</sup> This position is still noticeable in modern assessments, see Calboli (2009, p. 156–7) and Pinkster (2015, p. 1270–2). We are still skeptical of this assumption as it is.

tive clauses, which confirms the idea that the attraction is less common.<sup>2</sup> This conclusion is borne out now not in comparison to Latin but by internal evidence (see section 3.1). We further found evidence that case attraction could be easily analysed as a agreement/concord phenomenon since it behaves like what is expected cross-linguistically for these (see chapter 4). Defining case attraction as an agreement pattern has the benefits of allowing a better integration of it into the general agreement system in AG.<sup>3</sup> Furthermore, although attraction in infinitive clauses is governed by different factors than relative and inverse attraction (GRIMM, S., 2007; KAKARIKOS, 2014; PROBERT, 2015), having both domains of attraction defined in agreement terms allows better language internal and cross-linguistic comparison between the phenomena, and takes advantage from the bulk of works on relative attraction in Indo-European languages. A working definition, employing the proposed vocabulary of Corbett (2006) should be:

- (1) **Case Attraction in Ancient Greek Infinitive Clauses** is the agreement resolution in which the predicate of an infinitive clause modifying its subject (the *target*) has oblique case assigned by the coindexed constituent pertaining to the subordinating clause (the *controller*), which has its own case assigned by government under the matrix verb. This resolution is non-canonical contradicting the expected locality of agreement/concord and having a non-inherent agreement feature, *case*, and thus semantically justified. Its counterpart is the local agreement between predicate and an empty pronominal position which has accusative case locally assigned.

## 5.2 Structuring case attraction

In section 1.2, we discussed the recent theoretical accounts of case attraction in transformative and minimalist frameworks. In the transformative accounts of Lakoff (1970), Andrews (1982) and Quicoli (1982) the case attraction is a derivation by which case is assigned to the predicates of infinitive clauses. This derivation is either the same as the agreement rule (LAKOFF, 1970; ANDREWS, 1982) or a separate rule that is applied after agreement (QUICOLI, 1982). While we propose that case attraction is an instance of agreement/concord we are unable to follow the first derivation proposal since its predictions are empirically troublesome, namely that the lack of attraction would be statistically residual, which is clearly false. We can not nevertheless sustain Quicoli's proposal since his attraction rule is an optional and seemingly random rule that triggers as frequently as it does not, which is also false (see section 3.1). The transformative accounts do not account for the fact that the attracted

<sup>2</sup> This raises the question on why did the scholiasts seemed to agree that the lack of attraction was unusual. We are not in position to answer this, and further research could show if they were influenced by a particular editorial and grammatical trend or if later in history some variant of AG preferred attracted constructions over unattracted ones.

<sup>3</sup> See for example the clumsy explanations of the agreement and lack of it in modern grammars as Smyth (1956) and Boas et al. (2019, ad loc.).

sentences are less frequent than the non-attracted ones and that they do not randomly occur: 67.5% of the sentences do not display case attraction, while 32.5% do, and these trends change accordingly to factors known to interact with agreement resolutions.

The minimalist accounts are also empirically problematic, sometimes producing contrafactual predictions. Tantalou (2003) and Spyropoulos (2005) structural proposals seem to be sound by accounting for an empty pronominal head as the subject of the infinitive clause, which by controlling the predicate locally is likely to assign case by agreement to it. Both their account and that of Sevdali (2013) consider that case attraction takes place due to some characteristic of the CP<sub>inf</sub> which varies in “permeability” or “specification”. If the CP<sub>inf</sub> is particularly underspecified or light, the attraction triggers, but the reasons why this could be the case are not discussed. Our account has preferred to interpret the empirical data in such a way that the nature of the *target* is of significant importance for the resolution of agreement and not exactly the nature of the CP, since it is a more economic approach both logically and methodologically. In the minimalist accounts, there are not much empirical data supporting their proposed structures for the contrast between attracted and non-attracted constructions, rather the opposite, the contrast between both is treated as evidence for two different structures.

Although we assume that proposing a specific constituent structure for both resolution is out of our work’s scope and empirically difficult, we have a few considerations on the matter: 1. any structural model for case attraction and infinitive complementation of Ancient Greek should account for the variety of pragmatic functions that are syntactically represented; 2. there are reasons to assume that a raising-like or EQUI deletion could be responsible for the syntactic representation of pragmatic functions in AG (DEVINE; STEPHENS, 2000; HAUG, 2011; ALLAN, 2012, see for example), which is in agreement with the arguments of Polinsky (2003) on the possibility of dismissing some long-distance agreement patterns as local ones; 3. the hypothesis which we have proposed, i.e. that more pragmatically antecedent functions are somehow higher in a hierarchy, is very similar to the effects of syntactic structuring on the semantic interpretation of participial clauses of AG, as recently shown in Bary and Haug (2011), Haug (2011, 2012), Fabricius-Hansen and Haug (2012) and Haug and Nikitina (2016a,b), so that one could assume that the pragmatic features proposed to be causing attraction could be as well interpreted in terms of semantics.

### 5.3 Conditioning case attraction

As a non-canonical agreement resolution, case attraction is semantically justified. It is known that predicates tend to be more subject to semantic agreement the further left the type the target is in the Predicate Hierarchy as defined in (2):

- (2) The Predicate Hierarchy (COMRIE, 1975; CORBETT, 2006, p. 231)

verb > participle > adjective > noun

For any controller that permits alternative agreements, as we move rightwards along the Predicate Hierarchy, the likelihood of agreement with greater semantic justification will increase monotonically (that is, with no intervening decrease).

Notice that the targets of case attraction in infinitive clauses are restricted to participles, adjectives and nouns, since infinitive verbs do not have agreement morphology available in the documented state of the Ancient Greek.<sup>4</sup> This trend was borne out by our data, although indirectly: copular infinitive clauses are correlated with an increasing frequency of attraction, which means that nouns and adjectives — which are expected to follow more frequently copulas rather than participles — are more prone to have case assigned by semantic agreement (see subsection 3.2.1). It is nevertheless impossible to compare the likeness of attraction with nouns or adjectives due to the size of the studied corpus.

Together with the Predicate Hierarchy, other factors were shown to increase the likeness of case attraction, namely the category of the main verb (if it denotes a possibility or not) and the proximity between controller and target (see subsection 3.2.3). The distance could directly favour the resolution as it has been proposed by Luraghi (1999) and shown in English by Levin (2001), but their proposals are opposite: for Luraghi the smaller the distance, the more likely it is for semantic agreement to trigger, whereas Levin shows an increase in the likelihood of semantic agreement the farther away the target is from its controller. Nevertheless we have argued that both these factors do not interfere on the resolution directly, but indirectly due to pragmatic and semantic reasons.

Since word order in AG is strongly determined by the pragmatic function of the constituents, the linear distance between words is very much dependent on the pragmatics of the sentence. The left-most positions are reserved to what we have called “pragmatic antecedence”, i.e. pragmatic functions that the speaker chose to assign to constituents to make the interlocutor put in context the main bulk of information (see section 4.3). This linear order has been proposed in similar terms for AG during the last 25 years since Dik (1995) up to Allan (2012, 2014), whose model we assume to be the best fit for our phenomenon. The close inspection and reading of contrastive pairs have shown that the attraction is preferred when the predicate carries information that is contextually necessary for the reader/

<sup>4</sup> There is evidence in Vedic for infinitival case agreement, although the dative infinitive is fairly grammaticalized and the current discussion assumes the infinitive as the controller. See Keydana (2013, 123ff.) for the most up-to-date assessment of the issue. The example below serves as an illustration (trans. JAMISON; BRERETON, 2014, p. 1601):

- (i) ahám rudráya dhánur á tanomi brahmadvīṣe śárove hántavá u  
 I-NOM Rudra-DAT bow-ACC stretch-1.SG.PRS hater of the sacred formulation-DAT arrow-DAT smash-DAT.INF PTCL  
 I stretch the bow for Rudra, for his arrow to smash the hater of the sacred formulation. (10.125.6)

The rest of ancient IE languages that preserve inflecting infinitives do not have enough data for a productive diachronic account.

listener to understand who are the characters referred in the narrative, what are the conditions that make a particular state of affairs deserving of their attention, or what are the conditions to a given state of affairs is true or will take place, the latter particularly more important to utterances about what is possible or what would be enough, i.e. sentences with possibility matrix verbs. Most of these positions are associated to Settings, New and Contrastive Topics or, in a event structure vocabulary, to Frames. This can be well demonstrated by controlling for strict adjacency, where the distance can not explicitly influence the outcome.

Compiling in a single definition, case attraction has been shown in this work to be definable as (3), where we include the factors influencing the resolution in attraction and our hypothesis build upon the data hereby collected and presented.

- (3) **Case Attraction in Ancient Greek Infinitive Clauses** is the agreement resolution in which the predicate of a infinitive clause modifying its subject, the *target*, has oblique case assigned by the coindexed constituent pertaining to the subordinating clause, the *controller*, which has its own case assigned by government under the matrix verb. This resolution is non-canonical contradicting the expected locality of agreement/concord and having a non-inherent agreement feature, *case*, and thus semantically justified. Its counterpart is the local agreement between predicate and an empty pronominal position which has accusative case locally assigned.

**Factors:**

- (i) if the target of agreement is a noun or adjectives, it is more likely the attraction takes place due to the **Predicate Hierarchy** (COMRIE, 1975).
- (ii) the likelihood of agreement increases the more fundamental (in the sense of antecedence) the pragmatic function the agreement target holds according to our hypothesis of **Pragmatic Antecedence Hierarchy**.

**Hypothesis:** In Ancient Greek infinitive clauses, a predicate is more likely to have case assigned under semantic agreement, i.e. under case attraction, the higher it is in a pragmatic antecedence hierarchy. The effect of such hierarchy is posterior to the effect of the Agreement and Predicate Hierarchy.

**Proposed Pragmatic Antecedence Hierarchy:**

Theme → Setting → N/C Topic → Narrow Focus → Given Topic → Broad Focus  
 + ←—————→ -  
 Likelihood of agreement with semantic justification



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# Appendices



# A Database

The database below consists of tokens of sentences which *could* display case attraction, all collected from Herodotus, Plato and Xenophon.<sup>1</sup> The data with the complete annotation used for this research can be found in the document in the *.csv* format available online.<sup>2</sup> We strongly recommend those particularly interested on the data to check the file which can be open in any spreadsheet editor (Microsoft Excel, LibreOffice Calc etc) or with modules such as *pandas* for Python and *tidyverse* for R. Make sure that the *separator* is set to “ , ” (comma) and the quotation mark is set to “ ”.

| author    | texto      | local  | passage                                                                                                                                                             | vi_lemma |
|-----------|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Xenophon  | Hellenica  | 6 1 13 | ἀφήκέ μοι ἐλθόντι πρὸς ὑμᾶς λέγειν τᾶληθῆ                                                                                                                           | ἀφήμι    |
| Herodotus | Historiae  | 5 80   | τουτέων ἀδελφεῶν ἐουσέων δοκέω ἡμῖν<br>Αἰγινήτων δέεσθαι τὸν θεὸν χρήσαι<br>τιμωρητῆρων γενέσθαι.                                                                   | δέομαι   |
| Herodotus | Historiae  | 6 100  | Ἐρετριέες δὲ πυθανόμενοι τὴν στρατιὴν τὴν<br>Περσικὴν ἐπὶ σφέας ἐπιπλεύσαν Ἀθηναίων<br>ἐδεήθησαν σφίσι βοηθοὺς γενέσθαι.                                            | δέομαι   |
| Xenophon  | Anabasis   | 6 6 33 | δέονται δέ σου καὶ τοῦτο, παραγενόμενον καὶ<br>ἄρξαντα ἑαυτῶν πείραν λαβεῖν καὶ Δεξιππου<br>καὶ σφῶν τῶν ἄλλων οἶος ἕκαστός ἐστι, καὶ τὴν<br>ἀξίαν ἑκάστοις νεῖμαι. | δέομαι   |
| Xenophon  | Cyropaedia | 1 5 4  | ἔπεμπε δὲ καὶ πρὸς Κύρον, δεόμενος αὐτοῦ<br>πειράσθαι ἄρχοντα ἐλθεῖν τῶν ἀνδρῶν, εἴ τινας<br>πέμποι στρατιώτας τὸ Περσῶν κοινόν.                                    | δέομαι   |
| Xenophon  | Cyropaedia | 7 2 23 | ὑπὸ τῶν δεομένων μου προστάτην γενέσθαι.                                                                                                                            | δέομαι   |
| Xenophon  | Hellenica  | 1 5 2  | ἐνταῦθα δὴ κατὰ τε τοῦ Τισσαφέρνους ἔλεγον<br>ἃ πεποικῶς εἶη, αὐτοῦ τε Κύρου ἐδέοντο ὡς<br>προθυμοτάτου πρὸς τὸν πόλεμον γενέσθαι.                                  | δέομαι   |
| Xenophon  | Cyropaedia | 6 4 9  | ὦ Ζεῦ μέγιστε, δός μοι φανῆναι ἀξίῳ μὲν<br>Πανθείας ἀνδρὶ, ἀξίῳ δὲ Κύρου φίλῳ                                                                                       | δίδωμι   |

<sup>1</sup> The searches were made using the *Morphological Search* of Diogenes (version 3.2.0) and the *Lemma search* on TLG.

<sup>2</sup> If the hyperlink does not work, this should: <https://github.com/caiogeraldes/master-data>

|           |           |       |                                                                                                                                                                                                                                                                                                                                             |       |
|-----------|-----------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Herodotus | Historiae | 1 19  | Μακροτέρης δέ οί γινομένης τῆς νούσου, πέμπει ἐς Δελφοὺς θεοπρόπους, εἴτε δὴ συμβουλευσάντος τεο, εἴτε καὶ αὐτῷ ἔδοξε πέμψαντα τὸν θεὸν ἐπειρέσθαι περὶ τῆς νούσου.                                                                                                                                                                         | δοκεῖ |
| Herodotus | Historiae | 1 207 | Νῦν ὧν μοι δοκεῖ διαβάντας προελθεῖν ὅσον ἂν ἐκεῖνοι ὑπεξίωσι, ἐνθεύτεν δὲ τάδε ποιούντας πειράσθαι ἐκείνων περιγενέσθαι (...) % τούτοισι ὧν τοῖσι ἀνδράσι τῶν προβάτων ἀφειδέως πολλὰ κατακόψαντας καὶ σκεύασαντας προθεῖναι ἐν τῷ στρατοπέδῳ τῷ ἡμετέρῳ δαίτα, πρὸς δὲ καὶ κρητῆρας ἀφειδέως οἴνου ἀκρήτου καὶ σιτία παντοῖα.             | δοκεῖ |
| Herodotus | Historiae | 1 3   | Οὔτω δὴ ἀρπάσαντος αὐτοῦ Ἑλένην, τοῖσι Ἑλλησι δόξασι πρῶτον πέμψαντας ἀγγέλους ἀπαιτέειν τε Ἑλένην καὶ δίκας τῆς ἀρπαγῆς αἰτέειν.                                                                                                                                                                                                           | δοκεῖ |
| Herodotus | Historiae | 2 151 | ἐς δὲ τὰ ἔλαια ἔδοξέ σφι διώξαι ψιλώσαντας τὰ πλείστα τῆς δυνάμιος, ἐκ δὲ τῶν ἐλέων ὀρμώμενον μὴ ἐπιμίσεσθαι τῇ ἄλλῃ Αἰγύπτῳ.                                                                                                                                                                                                               | δοκεῖ |
| Herodotus | Historiae | 3 62  | Νῦν ὧν μοι δοκεῖ μεταδιώξαντας τὸν κήρυκα ἐξετάζειν εἰρωτώντας παρ' ὅτεο ἤκων προαγορεύει ἡμῖν Σμέρδιος βασιλέος ἀκούειν.                                                                                                                                                                                                                   | δοκεῖ |
| Herodotus | Historiae | 4 11  | τοῖσι δὲ βασιλεῦσι δόξασι ἐν τῇ ἐωυτῶν κείσθαι ἀποθανόντας μηδὲ συμφεύγειν τῷ δήμῳ, λογισαμένους ὅσα τε ἀγαθὰ πεπόνθασι καὶ ὅσα φεύγοντας ἐκ τῆς πατρίδος κακὰ ἐπίδοξα καταλαμβάνειν.                                                                                                                                                       | δοκεῖ |
| Herodotus | Historiae | 4 134 | Νῦν ὧν μοι δοκεῖ, ἐπεὰν τάχιστα νύξ ἐπέλθῃ, ἐκκαύσαντας τὰ πυρὰ ὡς ἐώθαμεν καὶ ἄλλοτε ποιέειν, τῶν στρατιωτέων τοὺς ἀσθενεστάτους ἐς τὰς ταλαιπωρίας ἐξαπατήσαντας καὶ τοὺς ὄνους πάντας καταδήσαντας ἀπαλλάσσεσθαι, πρὶν ἢ καὶ ἐπὶ τὸν Ἴστρον ἰθῦσαι Σκύθας λύσοντας τὴν γέφυραν ἢ καὶ τι Ἴωσι δόξασι τὸ ἡμέας οἴον τε ἔσται ἐξεργάσασθαι. | δοκεῖ |

|           |           |        |                                                                                                                                                                                 |       |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Herodotus | Historiae | 4 3    | Νῦν ὧν μοι δοκεῖ αἰχμᾶς μὲν καὶ τόξα μετεῖναι, λαβόντα δὲ ἕκαστον τοῦ ἵππου τὴν μάστιγα ἰέναι ἄσπον αὐτῶν.                                                                      | δοκεῖ |
| Herodotus | Historiae | 4 81   | Κομισθῆναί τε δὴ χρήμα πολλὸν ἀρδίων καὶ οἱ δόξα ἐξ αὐτέων μνημόσυνον ποιήσαντι λιπέσθαι· ἐκ τουτέων δέ μιν τὸ χαλκήιον ποιῆσαι τοῦτο καὶ ἀναθεῖναι ἐς τὸν Ἐξαμπαῖον τοῦτον.    | δοκεῖ |
| Herodotus | Historiae | 5 92 c | ἐς ὃ δὴ σφι χρόνου ἐγγινομένου ἔδοξε αὐτῖς παρελθόντας πάντας τοῦ φόνου μετίσχειν.                                                                                              | δοκεῖ |
| Herodotus | Historiae | 5 96   | οὐκ ἐνδεκομένοισι δέ σφι ἐδέδοκτο ἐκ τοῦ φανεροῦ τοῖσι Πέρσησι πολεμίους εἶναι.                                                                                                 | δοκεῖ |
| Herodotus | Historiae | 6 22   | ἐδόκεε δὲ μετὰ τὴν ναυμαχίην αὐτίκα βουλευομένοισι, πρὶν ἢ σφι ἐς τὴν χώραν ἀπικέσθαι τὸν τύραννον Αἰάκεια, ἐς ἀποικίην ἐκπλέειν μηδὲ μένοντας Μήδοισί τε καὶ Αἰάκει δουλεύειν. | δοκεῖ |
| Herodotus | Historiae | 6 86 a | ταῦτά τε ὧν ἐπιλεγομένῳ καὶ βουλευομένῳ ἔδοξέ μοι τὰ ἡμίσεια πάσης τῆς οὐσίας ἐξαργυρώσαντα θέσθαι παρὰ σέ, εὖ ἐξεπισταμένῳ ὡς μοι κείμενα ἔσται παρὰ σοὶ σόα.                  | δοκεῖ |
| Herodotus | Historiae | 9 106  | Πρὸς ταῦτα Πελοποννησίων μὲν τοῖσι ἐν τέλει ἐοῦσι ἐδόκεε τῶν μηδισάντων ἐθνέων τῶν Ἑλληνικῶν τὰ ἔπιπλα ἐξαναστήσαντας δοῦναι τὴν χώραν Ἴωσι ἐνοικῆσαι·                          | δοκεῖ |
| Herodotus | Historiae | 9 114  | Τοῖσι μὲν νυν ἀμφὶ Λευτυχίδην Πελοποννησίοισι ἔδοξε ἀποπλέειν ἐς τὴν Ἑλλάδα, Ἀθηναίοισι δὲ καὶ Ξανθίππῳ τῷ στρατηγῷ αὐτοῦ ὑπομείναντας πειρᾶσθαι τῆς Χερσονήσου.                | δοκεῖ |
| Herodotus | Historiae | 9 25   | ἐς τοῦτον δὴ τὸν χώρον καὶ ἐπὶ τὴν κρήνην τὴν Γαργαφίην τὴν ἐν τῷ χώρῳ τούτῳ ἐοῦσαν ἔδοξέ σφι χρεὸν εἶναι ἀπικέσθαι καὶ διαταχθέντας στρατοπεδεύεσθαι.                          | δοκεῖ |

|           |           |       |                                                                                                                                                                                                                                                                   |       |
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| Herodotus | Historiae | 9 60  | Νῦν ὦν δέδοκται τὸ ἐνθεύτεν τὸ ποιητέον ἡμῖν, ἀμυνομένους γὰρ τῇ δυνάμεθα ἄριστα περιστέλλειν ἀλλήλους.                                                                                                                                                           | δοκεῖ |
| Herodotus | Historiae | 9 87  | Ἄνδρες Θηβαῖοι, ἐπειδὴ οὕτω δέδοκται τοῖσι Ἑλλησι, μὴ πρότερον ἀπαναστήναι πολιορκέοντας ἢ ἐξέλωσι Θήβας ἢ ἡμέας αὐτοῖσι παραδώτε (...)                                                                                                                           | δοκεῖ |
| Plato     | Laches    | 181 d | δικαιοτάτον μέντοι μοι δοκεῖ εἶναι ἐμὲ νεώτερον ὄντα τῶνδε καὶ ἀπειρότερον τούτων ἀκούειν πρότερον τί λέγουσιν καὶ μανθάνειν παρ' αὐτῶν·                                                                                                                          | δοκεῖ |
| Plato     | Leges     | 683 d | τὸ δὲ δὴ μετὰ τοῦτο ἔδοξεν αὐτοῖς, ὡς γε λέγεται τὸ τοῦ μύθου, τριχῆ τὸ στράτευμα διανείμαντας, τρεῖς πόλεις κατοικίξιν, Ἄργος, Μεσσήνην, Λακεδαίμονα.                                                                                                            | δοκεῖ |
| Plato     | Lysis     | 213 e | ἦ δὲ ἐτράπημεν, δοκεῖ μοι χρῆναι ἰέναι, σκοποῦντα τὰ κατὰ τοὺς ποιητάς·                                                                                                                                                                                           | δοκεῖ |
| Plato     | Menexenus | 239 c | τούτων πέρι μοι δοκεῖ χρῆναι ἐπιμνησθῆναι ἐπαινοῦντά τε καὶ προμνώμενον ἄλλοις ἐς ψῆδὰς τε καὶ τὴν ἄλλην ποίησιν αὐτὰ θεῖναι πρεπόντως τῶν πραξάντων                                                                                                              | δοκεῖ |
| Plato     | Phaedo    | 86 d  | δοκεῖ μέντοι μοι χρῆναι πρὸ τῆς ἀποκρίσεως ἔτι πρότερον Κέβητος ἀκούσαι τί αὐτὸς ὅδε ἐγκαλεῖ τῷ λόγῳ, ἵνα χρόνου ἐγγενομένου βουλευσώμεθα τί ἐροῦμεν, ἔπειτα δὲ ἀκούσαντας ἢ συγχωρεῖν αὐτοῖς ἐάν τι δοκῶσι προσάδειν, ἐάν δὲ μή, οὕτως ἤδη ὑπερδικεῖν τοῦ λόγου. | δοκεῖ |
| Plato     | Phaedo    | 98 e  | ἐπειδὴ Ἀθηναίοις ἔδοξε βέλτιον εἶναι ἐμοῦ καταψηφίσασθαι, διὰ ταῦτα δὴ καὶ ἐμοὶ βέλτιον αὐτὸ δέδοκται ἐνθάδε καθῆσθαι, καὶ δικαιότερον παραμένοντα ὑπέχειν τὴν δίκην ἢν ἂν κελεύσωσιν·                                                                            | δοκεῖ |
| Plato     | Phaedo    | 99 e  | ἔδοξε δὴ μοι χρῆναι εἰς τοὺς λόγους καταφυγόντα ἐν ἐκείνοις σκοπεῖν τῶν ὄντων τὴν ἀλήθειαν.                                                                                                                                                                       | δοκεῖ |

|          |            |        |                                                                                                                                                                                                                                  |       |
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| Plato    | Respublica | 578 d  | δοκεῖ γάρ μοι δεῖν ἐννοῆσαι ἐκ τῶνδε περὶ αὐτοῦ σκοποῦντας.                                                                                                                                                                      | δοκεῖ |
| Xenophon | Anabasis   | 2 1 2  | ἔδοξεν αὐτοῖς συσκευασαμένοις ἃ εἶχον καὶ ἐξοπλισαμένοις προΐεναι.                                                                                                                                                               | δοκεῖ |
| Xenophon | Anabasis   | 3 2 1  | καὶ ἔδοξεν αὐτοῖς προφυλακὰς καταστήσαντας συγκαλεῖν τοὺς στρατιώτας.                                                                                                                                                            | δοκεῖ |
| Xenophon | Anabasis   | 4 1 12 | ἅμα δὲ τῇ ἡμέρᾳ συνελθοῦσι τοῖς στρατηγοῖς καὶ λοχαγοῖς τῶν Ἑλλήνων ἔδοξε τῶν τε ὑποζυγίων τὰ ἀναγκαῖα καὶ δυνατώτατα ἔχοντας πορεύεσθαι, καταλιπόντας τᾶλλα, καὶ ὅσα ἦν νεωστὶ αἰχμάλωτα ἀνδράποδα ἐν τῇ στρατιᾷ πάντα ἀφεῖναι. | δοκεῖ |
| Xenophon | Anabasis   | 4 8 12 | ἀλλὰ μοι δοκεῖ ὀρθίους τοὺς λόχους ποιησαμένους τοσοῦτον χωρίον κατασχεῖν διαλιπόντας τοῖς λόχοις ὅσον ἔξω τοὺς ἐσχάτους λόχους γενέσθαι τῶν πολεμίων κεράτων·                                                                   | δοκεῖ |
| Xenophon | Anabasis   | 4 8 9  | ἔπειτα δὲ ἔδοξε τοῖς στρατηγοῖς βουλευέσασθαι συλλεγείσιν ὅπως ὡς κάλλιστα ἀγωνιοῦνται                                                                                                                                           | δοκεῖ |
| Xenophon | Anabasis   | 5 6 1  | καὶ ἐδόκει αὐτοῖς περὶ τῆς λοιπῆς πορείας παρακαλέσαντας τοὺς Σινωπέας βουλευέσθαι.                                                                                                                                              | δοκεῖ |
| Xenophon | Anabasis   | 6 6 30 | ἐκ τούτου ἔδοξεν αὐτοῖς πέμψαντας στρατηγοὺς καὶ λοχαγοὺς καὶ Δρακόντιον τὸν Σπαρτιάτην καὶ τῶν ἄλλων οἱ ἐδόκουν ἐπιτήδειοι εἶναι δεῖσθαι Κλεάνδρου κατὰ πάντα τρόπον ἀφεῖναι τῷ ἄνδρῳ.                                          | δοκεῖ |
| Xenophon | Anabasis   | 6 6 38 | ἔδοξεν αὐτοῖς τοῦμπαλιν ὑποστρέψαντας ἐλθεῖν μίαν ἡμέραν καὶ νύκτα.                                                                                                                                                              | δοκεῖ |
| Xenophon | Anabasis   | 7 1 31 | καὶ νῦν μοι δοκεῖ πέμψαντας Ἄναξιβίῳ εἰπεῖν (...).                                                                                                                                                                               | δοκεῖ |
| Xenophon | Cyropaedia | 3 3 14 | ἡμῖν γὰρ δοκεῖ πᾶσιν, ἐπεὶ περὶ παρεσκευάσμεθα, μὴ ἐπειδὴν ἐμβάλωσιν οἱ πολέμιοι εἰς τὴν σὴν χώραν, τότε μάχεσθαι, μὴδ' ἐν τῇ φιλίᾳ καθημένους ἡμᾶς ὑπομένειν, ἀλλ' εἶναι ὡς τάχιστα εἰς τὴν πολεμίαν.                           | δοκεῖ |

|           |            |         |                                                                                                                                                                                                                                                                                    |            |
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| Xenophon  | Hellenica  | 3 2 14  | ἐπεὶ δ' ἐκεῖ ἦσαν, ἔδοξεν αὐτοῖς ἰκανὰς φυλακὰς εἰς τὰ ἐρύματα καταστήσαντας διαβαίνειν πάλιν ἐπὶ τὴν Ἰωνίαν.                                                                                                                                                                      | δοκεῖ      |
| Xenophon  | Hellenica  | 3 5 23  | διὰ οὖν πάντα ταῦτα ἔδοξεν αὐτοῖς τοὺς νεκροὺς ὑποσπόνδους ἀναιρεῖσθαι.                                                                                                                                                                                                            | δοκεῖ      |
| Plato     | Protagoras | 344 e   | τῷ μὲν γὰρ ἐσθλῷ ἐγχωρεῖ κακῷ γενέσθαι.                                                                                                                                                                                                                                            | ἐγχωρεῖ    |
| Plato     | Respublica | 408 e   | ἀλλὰ ψυχῇ σῶμα, ἣ οὐκ ἐγχωρεῖ κακὴν γενομένην τε καὶ οὖσαν εἰ τι θεραπεύειν.                                                                                                                                                                                                       | ἐγχωρεῖ    |
| Herodotus | Historiae  | 1 123   | ἐντειλάμενός οἱ ἀπὸ γλώσσης διδόντα τὸν λαγὸν Κύρω ἐπειπεῖν αὐτοχειρὴ μιν διελεῖν καὶ μηδένα οἱ ταῦτα ποιεῖντι παρεῖναι.                                                                                                                                                           | ἐντέλλομαι |
| Herodotus | Historiae  | 1 47    | Ἐντειλάμενος δὲ τοῖσι Λυδοῖσι τάδε ἀπέπεμπε ἐς τὴν διάπειραν τῶν χρηστηρίων, ἀπ' ἧς ἂν ἡμέρης ὀρμηθέωσι ἐκ Σαρδίων, ἀπὸ ταύτης ἡμερολογέοντας τὸν λοιπὸν χρόνον ἑκατοστῇ ἡμέρῃ χρᾶσθαι τοῖσι χρηστηρίοις, ἐπειρωτῶντας «ὄ τι ποιέων τυγχάνοι ὁ Λυδῶν βασιλεὺς Κροῖσος ὁ Ἀλυάττεω». | ἐντέλλομαι |
| Herodotus | Historiae  | 2 121 c | Ἀπορεόμενον δὲ μιν τάδε ποιῆσαι· τοῦ φωρὸς τὸν νέκυν κατὰ τοῦ τείχεος κατακρεμάσαι, φυλάκους δὲ αὐτοῦ καταστήσαντα ἐντειλασθαι σφι, τὸν ἂν ἴδωνται ἀποκλαύσαντα ἢ κατοικτισάμενον, συλλαβόντας ἄγειν πρὸς ἑωυτόν.                                                                  | ἐντέλλομαι |
| Herodotus | Historiae  | 3 135   | Ἐπίετε γὰρ τάχιστα ἡμέρη ἐπέλαμψε, καλέσας Περσέων ἄνδρας δοκίμους πεντεκαίδεκα ἐνετέλλετό σφι ἐπομένους Δημοκῆδεϊ διεξελεῖν τὰ παραθαλάσσια τῆς Ἑλλάδος, ὅπως τε μὴ διαδρήσεται σφεας ὁ Δημοκῆδης, ἀλλὰ μιν πάντως ὀπίσω ἀπάξουσι.                                                | ἐντέλλομαι |
| Herodotus | Historiae  | 3 25    | καὶ τούτοις μὲν ἐνετέλλετο Ἀμμωνίους ἐξανδραποδισαμένους τὸ χρηστήριον τὸ τοῦ Διὸς ἐμπρῆσαι,                                                                                                                                                                                       | ἐντέλλομαι |
| Herodotus | Historiae  | 4 133   | Πυνθανόμεθα γὰρ Δαρεῖον ἐντειλασθαι ὑμῖν ἐξήκοντα ἡμέρας μούνας φρουρήσαντας τὴν γέφυραν, αὐτοῦ μὴ παραγενομένου ἐν τούτῳ τῷ χρόνῳ, ἀπαλλάσσεσθαι ἐς τὴν ὑμετέραν.                                                                                                                 | ἐντέλλομαι |

|           |             |          |                                                                                                                                                                                                                                                |            |
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| Herodotus | Historiae   | 5 12     | Τελεωθέντων δὲ ἀμφοτέροισι οὗτοι μὲν κατὰ εἴλοντο ἐτράποντο, Δαρεῖον δὲ συνήνεικε πρήγμα τοιόνδε ἰδόμενον ἐπιθυμήσαι ἐντείλασθαι Μεγαβάζω Παίονας ἐλόντα ἀνασπάστους ποιῆσαι ἐκ τῆς Εὐρώπης ἐς τὴν Ἀσίην.                                      | ἐντέλλομαι |
| Plato     | Respublica  | 341 e    | ὥσπερ, ἔφην ἐγώ, εἴ με ἔροιο εἰ ἐξαρκεῖ σῶματι εἶναι σῶματι ἢ προσδεῖταιί τινος, εἴποιμ' ἂν ὅτι 'παντάπασιν μὲν οὖν προσδεῖται. διὰ ταῦτα καὶ ἡ τέχνη ἐστὶν ἢ ἰατρικὴ νῦν ἠύρημένη, ὅτι σῶμά ἐστιν πονηρὸν καὶ οὐκ ἐξαρκεῖ αὐτῷ τοιοῦτω εἶναι. | ἐξαρκεῖ    |
| Plato     | Symposium   | 192 b    | ἀλλ' ἐξαρκεῖ αὐτοῖς μετ' ἀλλήλων καταζῆν ἀγάμοις.                                                                                                                                                                                              | ἐξαρκεῖ    |
| Xenophon  | Memorabilia | 4 3 13   | ἀλλ' ἐξαρκῆ σοι τὰ ἔργα αὐτῶν ὁρῶντι σέβεσθαι καὶ τιμᾶν τοὺς θεοὺς.                                                                                                                                                                            | ἐξαρκεῖ    |
| Herodotus | Historiae   | 1 54     | ἐξεῖναι τῷ βουλευομένῳ αὐτῶν γίνεσθαι Δελφὸν ἐς τὸν αἰεὶ χρόνον.                                                                                                                                                                               | ἔξεστι     |
| Plato     | Protagoras  | 350 e.4  | ταῦτα δὲ ἐμοῦ ὁμολογήσαντος ἐξεῖν ἂν σοι, χρωμένῳ τοῖς αὐτοῖς τεκμηρίοις τούτοις, λέγειν ὡς κατὰ τὴν ἐμὴν ὁμολογίαν ἡ σοφία ἐστὶν ἰσχύς.                                                                                                       | ἔξεστι     |
| Plato     | Respublica  | 360b.6   | ἐξὸν αὐτῷ καὶ ἐκ τῆς ἀγορᾶς ἀδεῶς ὅτι βούλοιο λαμβάνειν, καὶ εἰσιόντι εἰς τὰς οἰκίας συγγίνεσθαι ὅτῳ βούλοιο, καὶ ἀποκτείνουσαι καὶ ἐκ δεσμῶν λύειν οὐστίνας βούλοιο, καὶ τᾶλλα πράττειν ἐν τοῖς ἀνθρώποις ἰσόθεον ὄντα.                       | ἔξεστι     |
| Plato     | Respublica  | 422 b.10 | Οὐδ' εἰ ἐξεῖν, ἦν δ' ἐγώ, ὑποφεύγοντι τὸν πρότερον ἀεὶ προσφερόμενον ἀναστρέφοντα κρούειν, καὶ τοῦτο ποιοῖ πολλάκις ἐν ἡλίῳ τε καὶ πνίγει;                                                                                                     | ἔξεστι     |
| Xenophon  | Agesilaus   | 2 12     | ἐξὸν γὰρ αὐτῷ παρέντι τοὺς διαπίπτοντας ἐπομένῳ χειροῦσθαι τοὺς ὀπισθεν οὐκ ἐποίησε τοῦτο, ἀλλ' ἀντιμέτωπος συνέρραξε τοῖς Θηβαίοις.                                                                                                           | ἔξεστι     |
| Xenophon  | Anabasis    | 2 5 18   | ἂ ἡμῖν ἔξεστι προκαταλαβοῦσιν ἄπορα ὑμῖν παρέχειν                                                                                                                                                                                              | ἔξεστι     |

|          |                                 |        |                                                                                                                                                                                                                       |        |
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| Xenophon | Anabasis                        | 7 1 21 | νῦν σοι ἔξεστιν, ὦ Ξενοφῶν, ἀνδρὶ γενέσθαι                                                                                                                                                                            | ἔξεστι |
| Xenophon | Cyropaedia                      | 2 1 15 | ἔξεστι δ' ὑμῖν, εἰ βούλεσθε, λαβόντας ὄπλα οἷάπερ ἡμεῖς ἔχομεν εἰς τὸν αὐτὸν ἡμῖν κίνδυνον ἐμβαίνειν, καὶ ἂν τι ἐκ τούτων καλὸν κάγαθὸν γίγνηται, τῶν ὁμοίων ἡμῖν ἀξιούσθαι.                                          | ἔξεστι |
| Xenophon | Cyropaedia                      | 8 3 50 | οὕτω δὴ ὅτε Φεραύλας ὑπερήδετο ὅτι ἐξέσοιτο αὐτῷ ἀπαλλαγέντι τῆς τῶν ἄλλων κτημάτων ἐπιμελείας ἀμφὶ τοὺς φίλους ἔχειν, ὃ τε Σάκας ὅτι ἔμελλε πολλὰ ἔχων πολλοῖς χρήσεσθαι.                                            | ἔξεστι |
| Xenophon | De republica<br>Lacedaemoniorum | 13 9   | ἔξεστι δὲ τῷ νέῳ καὶ κεχριμένῳ εἰς μάχην συνιέναι καὶ φαιδρὸν εἶναι καὶ εὐδοκιμεῖν.                                                                                                                                   | ἔξεστι |
| Xenophon | Hellenica                       | 4 1 35 | νῦν δὲ ἔξεστί σοι μεθ' ἡμῶν γενομένῳ μηδένα προσκυνούοντα μηδὲ δεσπότην ἔχοντα ζῆν καρπούμενον τὰ σαυτοῦ.                                                                                                             | ἔξεστι |
| Xenophon | Hellenica                       | 4 8 4  | Ἔστω ἄνδρες, νῦν ἔξεστιν ὑμῖν καὶ πρόσθεν φίλοις οὐσί τῇ πόλει ἡμῶν εὐεργέτας φανῆναι τῶν Λακεδαιμονίων.                                                                                                              | ἔξεστι |
| Xenophon | Hellenica                       | 5 4 26 | Ἔξεστί σοι, ὦ υἱέ, σῶσαι τὸν πατέρα, δεηθέντι Ἀρχιδάμου εὐμενῆ Ἀγησίλαον ἐμοὶ εἰς τὴν κρίσιν παρασχεῖν.                                                                                                               | ἔξεστι |
| Xenophon | Hellenica                       | 5 4 60 | ἔξεῖναι γὰρ σφίσι ναῦς πληρώσαντας πολὺ πλείους τῶν Ἀθηναίων ἐλεῖν λιμῷ τὴν πόλιν αὐτῶν.                                                                                                                              | ἔξεστι |
| Xenophon | Hellenica                       | 7 1 17 | (...) ἐξὸν τῷ Λακεδαιμονίων πολεμάρχῳ λαβόντι ὀπόσους μὲν ἐβούλετο τῶν συμμάχων ὀπίστας, ὀπόσους δὲ πελταστάς, κατέχειν τὸ χωρίον, καὶ γὰρ τὰ ἐπιτήδεια ἐξῆν ἀσφαλῶς ἐκ Κεγχρειῶν κομίζεσθαι, οὐκ ἐποίησε ταῦτα (...) | ἔξεστι |
| Xenophon | Hiero                           | 11 10  | καὶ ἐξεῖναι μὲν ἂν σοι ἕνεκεν ἀσφαλείας, εἴ ποί βούλοιο, θεωρήσοντι πορεύεσθαι, ἐξεῖναι δ' ἂν αὐτοῦ μένοντι τοῦτο πράττειν                                                                                            | ἔξεστι |
| Xenophon | Hiero                           | 6 11   | ἐξῆ δ' αὐτοῖς ἐν ὀλίγῳ χρόνῳ πολὺ πλείω λαβεῖν ἀποκτείνασι τὸν τύραννον ἢ ὅσα πολὺν χρόνον φυλάττοντες παρὰ τοῦ τυράννου λαμβάνουσιν.                                                                                 | ἔξεστι |

|           |              |        |                                                                                                                                                                                                                   |            |
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| Xenophon  | Hipparchicus | 4 12   | ἔτι δὲ τῷ μὲν κρυπτάς ἔχοντι φυλακὰς ἐξεστὶ μὲν φανεροῖς ὀλίγοις ἔμπροσθεν τῶν κρυπτῶν φυλάττοντα πειράσθαι τοὺς πολεμίους εἰς ἐνέδρας ὑπάγειν·                                                                   | ἔξεστι     |
| Xenophon  | Memorabilia  | 2 1 33 | τοιαῦτά σοι, ὦ παῖ τοκέων ἀγαθῶν Ἡράκλεις, ἔξεστι διαπονησαμένῳ τὴν μακαριστοτάτην εὐδαιμονίαν κεκτήσθαι.                                                                                                         | ἔξεστι     |
| Xenophon  | Memorabilia  | 2 6 36 | ἂ δὴ καὶ ἐγὼ πεισθεὶς ὀρθῶς ἔχειν ἡγοῦμαι οὐκ ἐξεῖναί μοι περὶ σοῦ λέγειν ἐπαινοῦντι οὐδὲν ὅ τι ἂν μὴ ἀληθεύω.                                                                                                    | ἔξεστι     |
| Xenophon  | Memorabilia  | 3 9 9  | ἐξεῖναι γὰρ αὐτοῖς ἰέναι πράξοντας τὰ βελτίω τούτων.                                                                                                                                                              | ἔξεστι     |
| Xenophon  | Memorabilia  | 4 5 10 | τῷ γὰρ ἂν ἦττον φήσαιμεν τῶν τοιούτων προσήκειν, ἢ ᾧ ἦκιστα ἔξεστι ταῦτα πράττειν κατεχομένῳ ἐπὶ τῷ σπουδάζειν περὶ τὰς ἐγγυτάτω ἡδονάς;                                                                          | ἔξεστι     |
| Xenophon  | Memorabilia  | 4 5 11 | ἀλλὰ τοῖς ἐγκρατέσι μόνοις ἔξεστι σκοπεῖν τὰ κράτιστα τῶν πραγμάτων, καὶ λόγῳ καὶ ἔργῳ διαλέγοντας κατὰ γένη τὰ μὲν ἀγαθὰ προαιρεῖσθαι, τῶν δὲ κακῶν ἀπέχεσθαι.                                                   | ἔξεστι     |
| Herodotus | Historiae    | 4 33   | οὕτω δὴ φέροντας ἐς τοὺς οὐρούς τὰ ἱρὰ ἐνδεδεμένα ἐν πυρῶν καλάμῃ τοῖσι πλησιοχώροισι ἐπισκήπτειν κελεύοντας προπέμπειν σφέα ἀπὸ ἐωυτῶν ἐς ἄλλο ἔθνος.                                                            | ἐπισκήπτω  |
| Herodotus | Historiae    | 4 89   | Δαρεῖος δὲ δωρησάμενος Μανδροκλέα διέβαινε ἐς τὴν Εὐρώπην, τοῖσι Ἴωσι παραγγείλας πλέειν ἐς τὸν Πόντον μέχρι Ἰστρου ποταμοῦ, ἐπεὰν δὲ ἀπίκωνται ἐς τὸν Ἰστρον, ἐνθαῦτα αὐτὸν περιμένειν, ζευγνύοντας τὸν ποταμόν· | παραγγέλλω |
| Herodotus | Historiae    | 6 78   | Μαθῶν δὲ ὁ Κλεομένης ποιεῦντας τοὺς Ἀργείους ὁκοῖόν τι ὁ σφέτερος κήρυξ σημήνιει, παραγγέλλει σφι, ὅταν σημήνη ὁ κήρυξ ποιέεσθαι ἄριστον, τότε ἀναλαβόντας τὰ ὄπλα χωρέειν ἐς τοὺς Ἀργείους.                      | παραγγέλλω |

|           |           |        |                                                                                                                                                                                                                                                                                                                                                             |            |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Herodotus | Historiae | 9 53   | Παυσανίης δὲ ὄρων σφέας ἀπαλλασσομένους ἐκ τοῦ στρατοπέδου παρήγγελλε καὶ τοῖσι Λακεδαιμονίοισι ἀναλαμβάνοντας τὰ ὄπλα ἰέναι κατὰ τοὺς ἄλλους τοὺς προϊόντας, νομίσας αὐτοὺς ἐς τὸν χῶρον ἰέναι ἐς τὸν συνεθήκαντο.                                                                                                                                         | παραγγέλλω |
| Xenophon  | Anabasis  | 1 2 1  | ἐνταῦθα καὶ παραγγέλλει τῷ τε Κλεάρχῳ λαβόντι ἤκειν ὅσον ἦν αὐτῷ στράτευμα καὶ τῷ Ἄριστίππῳ συναλλαγέντι πρὸς τοὺς οἴκοι ἀποπέμψαι πρὸς ἑαυτὸν ὃ εἶχε στράτευμα                                                                                                                                                                                             | παραγγέλλω |
| Xenophon  | Anabasis  | 1 2 1  | καὶ Ξενίᾳ τῷ Ἀρκάδι, ὃς αὐτῷ προειστήκει τοῦ ἐν ταῖς πόλεσι ξενικοῦ, ἤκειν παραγγέλλει λαβόντα τοὺς ἄλλους πλὴν ὅποσοι ἱκανοὶ ἦσαν τὰς ἀκροπόλεις φυλάττειν.                                                                                                                                                                                                | παραγγέλλω |
| Xenophon  | Anabasis  | 4 3 26 | καὶ παρήγγειλε τοῖς λοχαγοῖς κατ' ἐνωμοτίας ποιήσασθαι ἕκαστον τὸν ἑαυτοῦ λόχον, παρ' ἀσπίδα παραγαγόντας τὴν ἐνωμοτίαν ἐπὶ φάλαγγος·                                                                                                                                                                                                                       | παραγγέλλω |
| Xenophon  | Anabasis  | 4 3 29 | τοῖς δὲ παρ' ἑαυτῷ παρήγγειλεν, ἐπειδὴν σφενδόνη ἐξικνήται καὶ ἀσπίς ψοφῆ, παιανίσαντας θεῖν εἰς τοὺς πολεμίους, ἐπειδὴν δ' ἀναστρέψωσιν οἱ πολέμιοι καὶ ἐκ τοῦ ποταμοῦ ὃ σαλπικτῆς σημήνη τὸ πολεμικόν, ἀναστρέψαντας ἐπὶ δόρυ ἡγεῖσθαι μὲν τοὺς οὐραγούς, θεῖν δὲ πάντας καὶ διαβαίνειν ὅτι τάχιστα ἢ ἕκαστος τὴν τάξιν εἶχεν, ὡς μὴ ἐμποδίζειν ἀλλήλους· | παραγγέλλω |
| Xenophon  | Anabasis  | 5 2 12 | ὃ δὲ τοῖς πελτασταῖς πᾶσι παρήγγειλε διηγκυλωμένους ἰέναι, ὡς, ὅπταν σημήνη, ἀκοντίζειν, καὶ τοὺς τοξότας ἐπιβεβλήσθαι ἐπὶ ταῖς νευραῖς, ὡς, ὅπταν σημήνη, τοξεύειν δεῆσον, καὶ τοὺς γυμνήτας λίθων ἔχειν μεστάς τὰς διφθέρας·                                                                                                                              | παραγγέλλω |

|          |            |        |                                                                                                                                                                                                                                                                        |            |
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| Xenophon | Cyropaedia | 2 4 2  | ἀκούσας δὲ ταῦτα ὁ Κύρος παρήγγειλε τῷ πρώτῳ τεταγμένῳ ταξιάρχῳ εἰς μέτωπον στήναι, ἐφ' ἑνὸς ἄγοντα τὴν τάξιν, ἐν δεξιᾷ ἔχοντα ἑαυτόν, καὶ τῷ δευτέρῳ ἐκέλευσε ταῦτό τοῦτο παραγγεῖλαι, καὶ διὰ πάντων οὕτω παραδιδόναι ἐκέλευσεν.                                     | παραγγέλλω |
| Xenophon | Cyropaedia | 3 3 34 | τῇ δ' ὑστεραίᾳ πρῶ Κῦρος μὲν ἐστεφανωμένος ἔθυε, παρήγγειλε δὲ καὶ τοῖς ἄλλοις ὁμοτίμοις ἐστεφανωμένοις πρὸς τὰ ἱερά παραεῖναι.                                                                                                                                        | παραγγέλλω |
| Xenophon | Cyropaedia | 6 3 21 | παραγγείλατε δὲ τοῖς ταξιάρχοις καὶ λοχαγοῖς ἐπὶ φάλαγγος καθίστασθαι εἰς δύο ἔχοντας ἕκαστον τὸν λόχον.                                                                                                                                                               | παραγγέλλω |
| Xenophon | Hellenica  | 1 6 37 | καὶ οἱ μὲν τοῦτ' ἐποίουν· αὐτὸς δ', ἐπειδὴ ἐκείνοι κατέπλεον, ἔθυε τὰ εὐαγγέλια, καὶ τοῖς στρατιώταις παρήγγειλε δειπνοποιεῖσθαι, καὶ τοῖς ἐμπόροις τὰ χρήματα σιωπῇ ἐνθεμένους εἰς τὰ πλοῖα ἀποπλεῖν εἰς Χίον (ἦν δὲ τὸ πνεῦμα οὖριον) καὶ τὰς τριήρεις τὴν ταχίστην. | παραγγέλλω |
| Plato    | Gorgias    | 485 b  | ὅταν μὲν γὰρ παιδίον ἴδω, ᾧ ἔτι προσήκει διαλέγεσθαι οὕτω, ψελλιζόμενον καὶ παίζον, χαίρω (...)                                                                                                                                                                        | προσῆκει   |
| Plato    | Gorgias    | 525 b  | προσῆκει δὲ παντὶ τῷ ἐν τιμωρίᾳ ὄντι, ὑπ' ἄλλου ὀρθῶς τιμωρουμένῳ, ἢ βελτίονι γίνεσθαι καὶ ὀνίνασθαι ἢ παραδείγματι τοῖς ἄλλοις γίνεσθαι (...)                                                                                                                         | προσῆκει   |
| Plato    | Leges      | 758 c  | (...) ἄντε ἀγγέλλειν βούληταί τις ἐάντ' αὐτὸ πυνθάνεσθαι τι τῶν ὧν προσήκει πόλει πρὸς πόλεις ἄλλας ἀποκρίνεσθαι τε, καὶ ἐρωτήσασαν ἑτέρας, ἀποδέξασθαι τὰς ἀποκρίσεις (...)                                                                                           | προσῆκει   |
| Plato    | Parmenides | 139 c  | ἕτερον δὲ γε ἑτέρου οὐκ ἔσται, ἕως ἂν ᾗ ἔν: οὐ γὰρ ἐνὶ προσήκει ἑτέρῳ τινὸς εἶναι, ἀλλὰ μόνῳ ἑτέρῳ ἑτέρου, ἄλλῳ δὲ οὐδενί.                                                                                                                                             | προσῆκει   |
| Plato    | Phaedo     | 80 b   | τί οὖν; τούτων οὕτως ἐχόντων ἄρ' οὐχὶ σῶματι μὲν ταχὺ διαλύεσθαι προσήκει, ψυχῇ δὲ αὐτὸ τὸ παράπαν ἀδιαλύτῳ εἶναι ἢ ἐγγὺς τι τούτου;                                                                                                                                   | προσῆκει   |

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| Plato     | Phaedrus     | 233 a  | καὶ μὲν δὴ βελτιονί σοι προσήκει γενέσθαι ἐμοὶ πειθομένῳ ἢ ἐραστῇ.                                                                                                                                                                                                                                   | προσήκει   |
| Plato     | Politicus    | 311 c  | καὶ καθ' ὅσον εὐδαίμονι προσήκει γίγνεσθαι πόλει (...)                                                                                                                                                                                                                                               | προσήκει   |
| Plato     | Respublica   | 441 e  | Οὐκοῦν τῷ μὲν λογιστικῷ ἄρχειν προσήκει, σοφῷ ὄντι καὶ ἔχοντι τὴν ὑπὲρ ἀπάσης τῆς ψυχῆς προμήθειαν, τῷ δὲ θυμοειδεὶ ὑπηκόῳ εἶναι καὶ συμμάχῳ τούτου;                                                                                                                                                 | προσήκει   |
| Plato     | Timaeus      | 29 b   | καθ' ὅσον οἶόν τε καὶ ἀνελέγκτοις προσήκει λόγοις εἶναι καὶ ἀνικητοῖς                                                                                                                                                                                                                                | προσήκει   |
| Xenophon  | Anabasis     | 3 2 11 | ἵνα εἰδῆτε ὡς ἀγαθοῖς τε ὑμῖν προσήκει εἶναι σῶζονται τε σὺν τοῖς θεοῖς καὶ ἐκ πάνυ δεινῶν οἱ ἀγαθοί.                                                                                                                                                                                                | προσήκει   |
| Xenophon  | Hipparchicus | 7 1    | παντὶ μὲν οὖν προσήκει ἄρχοντι φρονίμῳ εἶναι.                                                                                                                                                                                                                                                        | προσήκει   |
| Herodotus | Historiae    | 1 53   | τοὺς δὲ Ἑλλήνων δυνατωτάτους συνεβούλευόν οἱ ἐξευρόντα φίλους προσθέσθαι.                                                                                                                                                                                                                            | συμβουλεύω |
| Herodotus | Historiae    | 2 107  | Τὴν δὲ οἱ συμβουλευθεῖσαι τῶν παίδων ἐόντων ἕξ τοὺς δύο ἐπὶ τὴν πυρὴν ἐκτείναντα γεφυρῶσαι τὸ καιόμενον, αὐτοὺς δ' ἐπ' ἐκείνων ἐπιβαίνοντας ἐκσῶζεσθαι                                                                                                                                               | συμβουλεύω |
| Herodotus | Historiae    | 7 120  | ὃς συνεβούλευσε Ἀβδηρίτησι πανδημεὶ αὐτοὺς καὶ γυναῖκας, ἐλθόντας ἐς τὰ σφέτερα ἱρά, ἴζεσθαι ἰκέτας τῶν θεῶν παραιτεομένους καὶ τὸ λοιπὸν σφι ἀπαμύνειν τῶν ἐπιόντων κακῶν τὰ ἡμίσεα, τῶν τε παροίχομένων ἔχειν σφι μεγάλην χάριν, ὅτι βασιλεὺς Ξέρξης οὐδὲς ἐκάστης ἡμέρης ἐνόμισε σίτον αἰρέεσθαι· | συμβουλεύω |
| Herodotus | Historiae    | 7 141  | Τίμων ὁ Ἀνδροβούλου, τῶν Δελφῶν ἀνὴρ δόκιμος ὅμοια τῷ μάλιστα, συνεβούλευέ σφι ἰκετηρίας λαβοῦσι δεύτερα αὐτίς ἐλθόντας χρᾶσθαι τῷ χρηστηρίῳ ὡς ἰκέτας.                                                                                                                                              | συμβουλεύω |
| Herodotus | Historiae    | 7 173  | ἀπικόμενοι γὰρ ἄγγελοι παρὰ Ἀλεξάνδρου τοῦ Ἀμύντεω ἀνδρὸς Μακεδόνοιο συνεβούλευόν σφι ἀπαλλάσσεσθαι μὴδὲ μένοντας ἐν τῇ ἐσβολῇ καταπατηθῆναι ὑπὸ τοῦ στρατοῦ τοῦ ἐπιόντος, σημαίνοντες τὸ πλῆθος τε τῆς στρατιῆς καὶ τὰς νέας·                                                                       | συμβουλεύω |

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| Plato    | Charmides    | 176a3   | ἀλλ' ὄρα εἰ ἔχεις τε καὶ μὴδὲν δέη τῆς ἐπωδῆς· εἰ γὰρ ἔχεις, μᾶλλον ἂν ἔγωγέ σοι συμβουλευσάμι ἐμέ μὲν λήρον ἡγεῖσθαι εἶναι καὶ ἀδύνατον λόγῳ ὁτιοῦν ζητεῖν, σεαυτὸν δέ, ὅσῳπερ σωφρονέστερος εἶ, τοσοῦτῳ εἶναι καὶ εὐδαιμονέστερον.                                    | συμβουλεύω |
| Plato    | Respublica   | 390 e   | οὐδὲ τὸν τοῦ Ἀχιλλέως παιδαγωγὸν Φοῖνικα ἐπαινετέον ὡς μετρίως ἔλεγε συμβουλεύων αὐτῷ δῶρα μὲν λαβόντι ἐπαμύνειν τοῖς Ἀχαιοῖς, ἄνευ δὲ δῶρων μὴ ἀπαλλάττεσθαι τῆς μήνιος.                                                                                               | συμβουλεύω |
| Xenophon | Anabasis     | 3 1 5   | συμβουλεύει τῷ Ξενοφῶντι ἐλθόντα εἰς Δελφοὺς ἀνακοινῶσαι τῷ θεῷ περὶ τῆς πορείας.                                                                                                                                                                                       | συμβουλεύω |
| Xenophon | Anabasis     | 7 1 30  | καὶ ὑμῖν δὲ συμβουλεύω Ἕλληνας ὄντας τοῖς τῶν Ἑλλήνων προεστηκόσι πειθομένους πειρᾶσθαι τῶν δικαίων τυγχάνειν.                                                                                                                                                          | συμβουλεύω |
| Xenophon | Cyropaedia   | 4 5 32  | συμβουλεύω δέ σοι καίπερ νεώτερος ὢν μὴ ἀφαιρεῖσθαι ἅ ἂν δῶς, ἵνα μὴ σοι ἀντι χαρίτων ἔχθραι ὀφείλωνται, μηδ' ὅταν τινὰ βούλη πρὸς σὲ ταχὺ ἐλθεῖν, ἀπειλοῦντα μεταπέμπεσθαι, μηδὲ φάσκοντα ἔρημον εἶναι ἅμα πολλοῖς ἀπειλεῖν, ἵνα μὴ διδάσκης αὐτοὺς σοῦ μὴ φροντίζειν. | συμβουλεύω |
| Xenophon | Hipparchicus | 1 18    | συγκαλέσαντα δὲ χρή τοὺς ἵππέας συμβουλευσάι αὐτοῖς μελετᾶν, καὶ ὅταν εἰς χώραν ἐλαύνωσι καὶ ὅταν ἄλλοσέ ποι, ἐκβιβάζοντας τῶν ὁδῶν καὶ ταχὺ ἐλαύνοντας ἐν τόποις παντοδαποῖς.                                                                                          | συμβουλεύω |
| Xenophon | Memorabilia  | 1 3 6   | τοῖς δὲ μὴ δυναμένοις τοῦτο ποιεῖν συνεβούλευε φυλάττεσθαι τὰ πείθοντα μὴ πεινῶντας ἐσθίειν μηδὲ διψῶντας πίνειν·                                                                                                                                                       | συμβουλεύω |
| Xenophon | Oeconomicus  | 11 23 7 | ὡς συμφέρει αὐτοῖς φίλους εἶναι μᾶλλον ἢ πολεμίους                                                                                                                                                                                                                      | συμφέρει   |
| Plato    | Phaedo       | 81 a    | οἱ ἀφικομένη ὑπάρχει αὐτῇ εὐδαιμονίᾳ εἶναι                                                                                                                                                                                                                              | ὑπάρχει    |

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| Herodotus | Historiae | 7 53 | ὦ Πέρσαι, τῶνδ' ἐγὼ ὑμέων χρηζῶν συνέλεξα, χρήζω<br>ἄνδρας τε γίνεσθαι ἀγαθοὺς καὶ μὴ<br>καταισχύνειν τὰ πρόσθε ἐργασμένα<br>Πέρσησι(...) |
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## Colophon

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