

Universitatea Transilvania din Brașov

# **HABILITATION THESIS**

**Title: Predictability in language processing** 

**Domain: Philology** 

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## CONTENTS

A. SUMMARY	5
A.1. Romanian summary	5
A.2. English Summary	8
B. Scientific and professional achievements and evolution	11
B(i) Scientific and professional achievements	11
B(i)-1 Differential object marking in Romanian	12
1.1. DOM in present-day Romanian	14
1.1.1. Factors determining the use of DOM	
1.1.2. The function of DOM	
1.2. The diachronic evolution of DOM in Romanian	19
1.2.1. Animacy and definiteness	
1.2.2. DOM and its effects at the discourse level	23
1.2.3. Clitic doubling	
1.3. Conclusions	
B(i)-2 Prominence in discourse	
2.1. Prominence	
2.2. Factors contributing to the prominence of referents	
2.2.1. Thematic roles affect pronoun production	
2.2.2. Effects of implicit causality on the subsequent discourse	
2.3. The discourse structuring potential	
2.4. The dual processing model of reference	
B(i)-3 Teaching and Learning in Higher Education	
3.1. Background	
3.2. The introductory course	
3.3. Implementation of the blended learning project	
3.4. Conclusions	64
B(ii) Career evolution and development plans	66
B(ii)-1 Career evolution: from the beginnings up to now	
B (ii) 1.1. Academic Formation	66
B(ii) 1.2. Professional Experience	69
B(ii) 1.3. Research activities and impact	73
B (ii) 1.4. Teaching Engagements	
B (ii) 1.5. Service to the field	94
B(ii)-2 Career development objectives	
B (ii) 2.1. Research activities	
B (ii) 2.2. Educational activities	98
B(iii) Bibliography	101

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## A. SUMMARY

## A.1. Romanian summary

Teza de față descrie principalele domenii și teme de cercetare pe care le-am abordat începând cu perioada imediat următoare susținerii tezei de doctorat (iulie 2011) și până în prezent. Lucrarea este structurata in trei capitole, dintre care primul detaliază contribuția mea in diverse domenii și direcții de cercetare. Al capitol se axează pe prezentarea unor proiecte de cercetare viitoare, care sunt fie în curs de implementare, urmând a fi încheiate în următorii doi ani, fie sunt în diverse faze incipiente, urmând a fi demarate în viitorul apropiat, dar cu o arie de desfășurare care se întinde pe următorii șapte până la zece ani. Ultimul capitol conține bibliografia folosită.

Activitățile mele de cercetare și predare s-au desfășurat în cadrul a trei centre universitare, după cum urmează: În perioada 2007 - 2012 am lucrat în cadrul Departamentului de Lingvistică (Germanistică) al Universității din Stuttgart, Germania, iar în perioada aprilie 2012- octombrie 2015 am fost angajată a Institutului de Limbă și Literatură Germană I, Departamentul de Lingvistică, al Universității din Köln, Germania. În aceste perioade am predat cursuri de lingvistică la nivel de licență, masterat și doctorat, continuând in paralel cercetarea în domeniul lingvisticii generale și comparative. Am investigat fenomene lingvistice din limbile germanice și romanice, cu un accent deosebit pe semantica si pragmatica limbilor română, germană și engleză, cum ar fi marcarea diferențială a obiectelor directe, marcarea obiectelor directe cu clitic, specificitatea, relații de proeminență între referenții discursivi. Începând cu luna octombrie a anului 2015 lucrez la Universitatea Transilvania din Brașov, Facultatea de Litere, în cadrul Departamentului de Lingvistică Teoretică și Aplicată, unde desfășor activități de predare și cercetare.

Un impact însemnat asupra activității mele de cercetare au avut-o și stagiul de tip "visiting scholar" desfășurat la Universitatea "University of Southern California" din Los Angeles, Statele Unite ale Americii, în cadrul Departamentului de Lingvistică, în perioada ianuarie - iunie 2011. În cadrul acestui stagiu de cercetare, am avut ocazia să lucrez îndeaproape cu diferiți lingviști de talie mondială in cadrul echipelor lor de cercetare exploratorie. Această colaborare m-a ajutat să aprofundez domeniul lingvisticii experimentale, reușind să derulez o serie de experimente vizând diverse aspecte legate de semantica și pragmatica diferitor grupuri nominale în limbile română, germană și engleză. Teza de fata reprezintă o sinteză a activităților desfășurate după încheierea lucrării de doctorat și este organizată în trei capitole. **Primul capitol** prezintă rezultatele mele științifice și profesionale, fiind structurat în trei subsecțiuni distincte, după cum urmează:

Secțiunea 1 descrie contribuția mea privind semantica mecanismelor de marcare diferențiată a obiectului direct (Differential Object Marking). În prima parte evidențiez o serie de observații cu privire la diverse aspecte de ordin sintactic și semantic ale acestui fenomen în limba română din perspectiva sincronică. Ultimele subsecțiuni se concentrează cu precădere pe rezultatele investigațiilor mele cu privire la evoluția diacronică a acestor construcții, subliniind totodată necesitatea luării în considerare a componentei discursiv-pragmatice pentru analiza fenomenului.

Secțiunea 2 cuprinde o discuție mai largă a unei serii de experimente, care au ca punct comun noțiunea de proeminență sau importanță referențială. Prima dintre cele patru subsecțiuni reprezintă o introducere succintă a acestui concept, făcând referire la Teoria Accesibilității și evidențiind câteva dintre întrebările fundamentale la care orice model referențial trebuie să răspundă. Următoarea subsecțiune prezintă acei factori, care contribuie la un nivel ridicat de proeminență referențială. Discuția va fi centrată pe rezultatele investigațiilor mele cu privire la efectele cauzalității verbale implicite, a diferitor roluri tematice și a animației asupra proeminenței referențiale. Se va evidenția faptul că anumite construcții sunt dotate cu un potențial ridicat de structurare a discursului ("Discourse structuring potential"). Ultima subsecțiune introduce modelul dual de procesare referențială ("The dual processing model") propus pentru explicarea contribuției grupurilor nominale (in)definite la nivelul discursului.

Secțiunea 3 se oprește asupra unui alt domeniu de interes în cercetarea mea, care vizează procesele de învățare și predare în învățământul superior. În această secțiune prezint rezultatele obținute în urma derulării unui curs inovativ de introducere în lingvistica germană, implementat la Universitatea din Köln, Germania, în perioada 2012-2015. În acest proiect am pus în aplicare o serie de concepte și metode de didactică, pe care le-am învățat în timpul certificării în domeniul didacticii universitare la Universitatea din Köln în anul 2018.

**Capitolul 2** este o descriere a dezvoltării și evoluției mele profesionale academice și prezintă totodată planurile de dezvoltare a carierei pe termen scurt și mediu, fiind împărțit în două secțiuni.

Secțiunea 1 reprezintă o radiografie a formării mele academice și a dezvoltării mele profesionale. În cea de-a doua parte a acestei secțiuni sunt prezentate rezultatele de

6

cercetare obținute și impactul acestora în domeniu. De asemenea, în această secțiune sunt evidențiate și activitățile didactice și de mentorat desfășurate de-a lungul anilor la universitățile din Stuttgart, Köln și respectiv Brașov.

Secțiunea 2 este dedicată planului de dezvoltare a carierei mele, fiind centrată pe activitățile de cercetare și didactice pe care intenționez să le desfășor în următoarea perioadă.

Ultimul capitol cuprinde lucrările citate în această teză.

## A.2. English Summary

The present habilitation thesis is a reflection upon my scientific and professional achievements after the completion of my doctoral work at the University of Stuttgart, Germany, in July 2011. After synthesizing the results obtained so far, I will then turn to presenting my career evolution and development plans for the next five to seven years.

The thesis is structured in three chapters. The first chapter is centered around my contribution to different themes and research directions, the second chapter describes my academic formation and professional experience, detailing on the research and didactic activities I conducted, to then outline my career goals and plans. The last chapter contains a selective list of bibliographic resources cited throughout the thesis.

My academic journey and research endeavors have been affiliated with three prestigious (inter)national institutions of higher education. Firstly, I was engaged at the Department of German Linguistics at the University of Stuttgart, Germany, from 2007 to 2012. Subsequently, I became a part of the Department of German Language and Literature I ("Institut für Deutsche Sprache und Literatur I") at the University of Cologne, Germany, from 2012 to 2015. Lastly, I joined the Department of Theoretical and Applied Linguistics at the Transilvania University of Brasov, Romania. During my tenure in Germany, I not only taught linguistics classes at the Bachelor's (B.A.), Master's (M.A.), and doctoral levels but also pursued my research in general and comparative linguistics. Given the international working environment I was part of, and the research projects I joined as a principal investigator or as a research member, I investigated different phenomena in various German, Romance and Turkic languages, mainly focusing on semantic and discourse-pragmatic aspects of differential object marking, clitic doubling, specificity, referentiality and referential resolution. At the Transilvania University of Braşov, I continue to advance both my research and teaching endeavors in the domain of linguistics.

The half-year period I dedicated to being a visiting scholar at the Department of Linguistics, University of Southern California, Los Angeles, USA, in 2011 significantly influenced my academic growth. This experience allowed me to engage closely with esteemed researchers in the field and their interdisciplinary, innovative teams. It was during this period that I embraced more experimental methodologies in my own research endeavors.

This thesis is structured in three chapters. The first chapter is dedicated to my scientific results and is further divided in three sections, as follows:

Section 1 focuses on my contribution concerning the distribution of Differential Object Marking (DOM). The first part of this section outlines several syntactic and sematic factors influencing DOM in contemporary Romanian. The main part of this section is dedicated to the diachronic development of DOM from 1800 to 2000. In essence, the insights presented in this section call for the integration of the discourse-pragmatic contribution of DOM into any comprehensive account of this phenomenon in Romanian.

Section 2 comprises the results of a series of investigations on different aspects of discourse prominence. After introducing the basic concepts on prominence or accessibility and some important open issues on these topics in the first subsection, I then review the most researched prominence-lending factors. The centerpieces of this discussion will be three factors I particularly focused on in some of my recent work, namely: the animacy of referents, different thematic roles, the implicit causality of interpersonal verbs and the way in which they impact the unfolding discourse in terms of referential management. Most research has focused on the discourse history of an anaphoric expression to determine the degree of accessibility of a referent by investigating the factors that contribute to the choice of a particular reference form, while I underline that referents may be associated with forward-looking properties as well, such as their discourse structuring potential. In the last part of this section, I review the Dual Processing Model, which I developed together with two colleagues at the University of Cologne to account for the discourse behavior of definite and indefinite noun phrases.

Section 3 focuses on my longstanding commitment to interdisciplinary teaching and learning in higher education. I present the main insights from an innovative blended-learning introductory course I redesigned and implemented at the University of Cologne, from 2012 to 2015. Throughout this project, I applied concepts and skills acquired within my higher education teaching certificate obtained from the University of Cologne.

**Chapter 2** is a review of my career evolution and an outlook to my development plans for the next five to seven years and is divided into two sections.

Section 1 reviews the milestones of my academic formation and professional experience, summarizing the most important achievements. This section furthermore highlights the teaching and supervising activities I have conducted at the Universities of

9

Stuttgart, Köln and Braşov. Other activities that contributed to my professional experience (e.g., reviews of publications, projects) are mentioned in this section as well.

Section 2 is dedicated to my career development plans, which include my teaching and research projects and plans for the next years.

The **last chapter** contains the bibliography used in this thesis.

#### B. Scientific and professional achievements and evolution

The main part of this thesis is dedicated to the presentation of my scientific and professional accomplishments, as well as the delineation of my career progression and future development plans and is divided in three chapters. The first chapter presents the principal research themes that have guided my research throughout my academic career since attaining my doctoral degree. These themes are grouped into three sections: (i) differential object marking, (ii) prominence in discourse, and (iii) teaching and learning in higher education.

The second chapter chronicles my academic evolution and outlines the developmental blueprint for the forthcoming years of my academic trajectory. It commences with an overview of my academic formation, professional growth, and teaching experiences accumulated over the past 12 years post-completion of my doctoral studies. Lastly, I introduce my research and pedagogical objectives for the next five to seven years.

#### B(i) Scientific and professional achievements

This chapter discusses the primary research themes that have been central to my academic pursuits, particularly in the years following the completion of my doctoral degree. The first section discusses the phenomenon of differential object marking (DOM), a research theme I have been interested in since the writing of my Magister thesis at the University of Stuttgart, Germany, in 2007. The presentation focuses on the findings of a more recent corpus investigation I have conducted. The second section is dedicated to the broad notion of prominence in discourse, while the third section presents my research in the field of teaching and learning in higher education. In the subsequent sections, I address each theme individually.

## B(i)-1 Differential object marking in Romanian

Natural languages employ different linguistic means to identify and single out the participants in an event that is being described. These participants can either be the obligatory arguments of the verb, or its adjuncts. The array of strategies languages utilize to fulfil this identifying function includes morphological case marking (e.g. Nominative, Accusative, Ergative), prepositional phrases, a specific word order, a rich system of congruence, or a combination of these means. Across languages, direct objects commonly lack overt marking, though when they are marked, it is often not done systematically. Whether or not a direct object receives a case marker is a long-researched phenomenon. The optional marking of direct objects is referred to by various terms like "prepositional Accusative", "Accusative marking", or "differential object marking". Throughout this chapter I will adopt the typologically-oriented term "differential object marking" (henceforth DOM, as per Bossong 1982, 1991).

In Romanian, a subset of direct objects gets marked under particular conditions (Niculescu 1965, Aissen 2003). Consider, for example, the sentences in (1), in which the direct object "the brunette boy" receives obligatory *pe*-marking in (1a), while the direct object "the spiral notebook" in (1b) remains unmarked.

- (1) (a) Paul îl vede pe băiatul brunet.
  Paul CL see PE boy brunette
  'Paul sees the brunette boy.'
  - (b) Paul (\*îl) vede (\*pe) caietul spiralat.
    Paul CL see PE notebook spiral
    'Paul sees the spiral notebook.'

Romanian differentially marks direct objects by means of *pe*, a morpheme that was derived from the homophonous preposition p(r)e < Lat. per (with the regional variants *pă*, *pi*, *piră*, *pri*, *pre*), which means 'on' (Onu 1959, Niculescu 1965, Farkas 1978, Dobrovie-Sorin 1994, Pană-Dindelegan 1997, von Heusinger & Onea 2008). The classification of *pe* as DOM is not straightforward, as it displays some prepositional properties, but it does not have a prepositional meaning. Moreover, in present-day

Romanian, *pe*-marked DOs are also doubled by a weak clitic pronoun, as seen in (1a) above.

DOM is determined by several properties of the direct object and research has focused on filtering out the relevant factors for each language. The two implicationallyrelated scales that have been shown to guide DOM cross-linguistically are the animacy scale and the referentiality scale (Comrie 1975, Aissen 2003). Languages are sensitive to different parts of these scales, which determine which direct objects are obligatorily, optionally or excluded from being marked. For example, in nowadays Romanian, *pe*marking is obligatorily with personal pronouns and proper names, if they refer to human entities. For definite and indefinite noun phrases referring to human entities, the marker is optional (Niculescu 1965, Pană-Dindelegan 1997, von Heusinger and Onea 2008). The optional use of pe-marking with indefinite noun phrases has been a principal focus guiding my research over the years. In Chiriacescu (2009), Chiriacescu & von Heusinger (2010), Chiriacescu (2014), I explored longer discourse segments and noted that the use of *pe*-marking also comes with a discourse structuring function. Direct objects marked in this way are more prone to be picked up next, are more continuous in the discourse and make better subsequent topics compared to their non-marked counterparts.

After focusing on the distribution of DOM with definite and indefinite noun phrases in present-day Romanian, I was also interested in the grammaticalization path of DOM and particularly in exploring the discourse-pragmatic effects of *pe*-marking in Old Romanian. To this end, I conducted an extensive corpus study and analyzed the use of *pe* with direct objects during 1800 and 2000 in several Romanian short stories. I was interested in the triggering factors for differential object marking for that period of time and in particular for definite and indefinite noun phrases, which represent an optional domain in present-day Romanian. The subsequent sections are dedicated to the presentation of the results of the diachronic investigation and are organized as follows. First, in section 1.1, I offer a brief background on DOM in contemporary Romanian. Following that, in section 1.2, I outline the primary findings of the corpus study conducted on Romanian, which were published in the book "Die diachronic development of differential object marking in Romanian) with Metzler/Springer in 2018. Lastly, in section 1.3, the conclusions regarding DOM in Romanian are provided.

## 1.1. DOM in present-day Romanian

In this, section I summarize the main synchronic distributional patterns pertaining to DOM in Romanian. The presentation will show that animacy, referentiality and specificity are the most important factors that account for the use of *pe*-marking with direct objects. Furthermore, the examples will show that *pe*-marking is used as a signal for the listener that more information about the referent marked in this way will follow. DOM in Romanian is equipped with a discourse structuring function that is mirrored in the discourse following its introduction in terms of the referential persistence and topic shift potential of its associated referents.

## **1.1.1. Factors determining the use of DOM**

As already discussed in the introductory part, the overt marking is obligatory with a subset of direct objects, blocked for others and optional for a third set (Niculescu 1965, Farkas 1978, Dobrovin-Sorin 1994, Pană-Dindelegan 1997, von Heusinger and Onea 2008, Chiriacescu 2011). Moreover, in Romanian, *pe*-marked objects are often doubled by an accusative weak pronoun. In Spanish, only a few noun classes allow for the cooccurrence of DOM and the clitic pronoun, however, in synchronic Romanian most noun phrases in direct object position are double marked (Gramatica Limbii Române 2005). As clitic doubling and DOM usually co-occur, they were more often than not analyzed as representing one and the same phenomenon. I will adopt this view throughout this thesis.

DOM in present-day Romanian is mainly triggered by the semantic and pragmatic factors of the associated referent, namely by animacy, definiteness/ referentiality, specificity and topicality. Typologically, these factors are represented as scales or hierarchies, as illustrated in (2). The differential marking of the direct object was shown to extend in a continuous way, starting at the prominent part of these scales and extending to the right of these scales, to their less prominent parts (Comrie 1975, Bossong 1985, Aissen 2003, among others). The hierarchies have been used to account for the distribution of DOM cross-linguistically.

## (2) Factors triggering DOM

## Animacy scale

human > animate > non-animate

Definiteness scale

pers. pron. > PN > def. DP > indef DP > non-arg DP

Specificity scale

specific > non-specific

Topicality scale

topic	> non-topic

Simplifying somewhat, *pe*-marking in nowadays Romanian typically applies to those direct objects that are associated to human entities. This factor determines the acceptability of DOM with the noun *femeia* ('the woman') in (3a) and its unacceptability with the noun *cartea* ('the book') in (3b).

(3)	(a)	Am văzut	-0	pe	femeia	de la	aprozar.
		Have. seen	CL	PE	woman.DEF	from	grocery store
		'I saw the wo	man fro	om the g	grocery store.'		
	(b)	*Am citit	-0	pe	cartea	despre	Spania.
		Have. read	CL	PE	book.DEF	about	Spain
		'I read the book about Spain.'					

Besides animacy, Romanian *pe*-marking is sensitive to the reference type used to realize the direct object, as summarized in Table 1.

Table 1: *Pe*-marking of postverbal human direct objects in Romanian depending on the Definiteness Scale (Chiriacescu 2014)

pers.	> PN	> def. NP	> spec. indef	> non-spec. indef	> non-arg
pron.			NP	NP	NP
+	+	+/	+	+/-	-

#### Habilitation thesis

Full personal pronouns referring to animate entities are always preceded by *pe* and accompanied by a clitic pronoun in synchronic Romanian, as (4) shows. Proper names referring to humans are always *pe*-marked, as in (5). The picture becomes more interesting when we turn to definite and indefinite noun phrases, which allow for more optionality (given that other syntactic and/or semantic restrictions do not apply, as discussed in Chiriacescu (2014) and Lindemann (2022)). For example, human definite noun phrases in direct object position can optionally receive the *pe*-marker, as see in (6).

- (4) Maria îl ascultă pe el.
  Mary CL listens PE he
  'Mary listens to him.'
- (5) Am văzut-o pe Maria.
  Aux. seen-CL PE Mary
  'I have seen Mary.'
- (6) A: O fată merge la terapie. ('A girl goes to therapy'.)
  - (a) Psihologul consiliază fata.Psychologist.DEF counsels girl.DEF'The psychologist counsels the girl.'
  - (b) Psihologul o consiliază pe fată.
    Psychologist.DEF CL examines PE girl
    'The psychologist counsels the girl.'

The interesting observation pertaining to sentences (6a) and (6b) is that they represent two options of expressing similar referential categories. In accordance to the language register, or the context of use, Romanian speakers favor one construction over the other. In such examples, *pe*-marking and clitic doubling seem to be optional, as both variants have the same propositional content. However, in Chiriacescu (2010) I explored the discourse context in which definite noun phrases are used and investigated cases similar to those illustrated in (6) above. The picture that emerged is that speakers mark a direct object with *pe* whenever they intend to elaborate upon the referent introduced in this way in the discourse. And, conversely, a referent introduced by a non-*pe*-marked direct object is less prone to be frequently mentioned in the ensuing text. The information status of the

direct object seemed to play the crucial role in explaining the optionality found with definite noun phrases.

For indefinite noun phrases, specificity was shown to fulfil an important role in regulating DOM in Romanian (Farkas 1978, Dobrovie-Sorin 1994, von Heusinger and Onea 2008, among others). *Pe*-marked indefinite noun phrases receive referential readings in opaque contexts, as they generally take wide scope, have fixed reference, etc. However, in plain and transparent contexts that do not involve any sentence operators, indefinite noun phrases allow for an optionality similar to that found with definite noun phrases, between the *pe*-marked form and the non-*pe*-marked form. In such contexts, we do not see any contrasts with respect to sentence semantics. For such instances, it is again decisive to investigate the discourse function of *pe* with respect to the ensuing discourse.

## **1.1.2.** The function of DOM

The linguistic theory on differential object marking focused more on the function and distribution of the marker cross-linguistically. In functional typology, the assumption is that the case marking of a verb's arguments may have one of two functions: a discriminatory, or an indexing function. According to the first view, which is known as the Ambiguity Approach (Comrie 1975, Silverstein 1976, Moravcsik 1978, Bossong 1985, Aissen 2003), DOM was developed so as to distinguish a verb's most important arguments, the subject/ agent from the object/ patient. As languages tend to overtly mark idiosyncratic structures and leave canonic structures unmarked, it is more natural for the direct object to receive the special marker and not the subject (Bever 1970, among others). Another option to distinguish between a verb's core arguments is to mark both with different markers. This is a valid observation for the Latin declension case system. In sum, the competition between a verb's arguments in terms of different semantic and pragmatic features determines the presence of DOM, or its absence. The Ambiguity Approach applied to a SVO language like Romanian would predict that direct objects, which are prototypically lower in animacy and definiteness than subjects, would remain unmarked. Direct objects associated with human, definite referents should receive the marker, to distinguish them from other arguments. This applies for human direct objects realized as proper names and pronouns, which are marked systematically with pe. However, direct objects realized as human definite and indefinite noun phrases do not get pe-marked, not even when the subject referent is animate.

The second view on the cross-linguistic function of DOM is the Indexing or Transitivity Approach (Hopper and Thompson 1980). According to this view, case marking serves to indicate particular semantic or pragmatic properties of the direct object, such as a particular thematic role or the degree of affectedness or individuation associated to the referent of the direct object. In other words, a direct object receives the marker, if it is a prototypical argument of a salient transitive event. For Naess (2004) and subsequent work, affectedness describes the involvement in the event described by the verb and the change of state of the participant as a consequence of this event. Moreover, an affected referent is an individualized referent. This means that a *pe*-marked direct object would contribute to a higher degree of transitivity of the sentence it contains, as in (7a). On the contrary, to express low transitivity, a non-*pe*-marked form would be used, or an alternative construction, such as a reflexive verb and a prepositional object, as illustrated in (7b).

(7)	(a)	Anton (îl)	întîlneşte	(pe)	un	prieten.	
		Anton CL	meets	PE	a	friend.	
		'Anton meets	a friend.'				
	(b)	Anton se	întîlneşte	cu	un	prieten.	
		Anton SE	meets	with	a	friend.	
		'Anton meets (himself) with a friend.'					

In the book "Special indefinites in sentence and discourse", published in 2020 with Gunter Narr, I elaborated upon and refined the ideas initially formulated in my dissertation regarding the discourse prominence of direct objects marked with *pe* compared to those unmarked. See section 2.1 in this thesis for a more ample discussion on the concept of prominence. For the purposes of this section, it suffices to say that I investigated the discourse behavior of DOM marked indefinite and definite DOs in an innovative web-based paragraph continuation experiment and showed that referents associated with *pe*-marked DOs: (i) are referentially more persistent than unmarked direct objects, and (ii) exhibit a systematic preference to become the topic in the subsequent discourse. Starting from these observations, similar findings were reported for DOM in other languages, such as Korean (e.g., Kim & Kaiser, 2013), Mongolian (e.g., Guntsetseg, 2016), Burmese (e.g., Ozerov, 2015), Bantu languages (e.g., Poeta, 2017), and many more.

A natural continuation of my investigation into the discourse function of DOM involved examining whether it exhibited comparable discourse structuring effects in its historical development. The next section reports on an extensive corpus study undertaken to address this inquiry. The results were published in the book "Die diachronische Entwicklung der differentiellen Objektmarkierung im Rumänischen" (The differential object marking in Romanian), which was published with Metzler/ Springer in 2018.

## **1.2.** The diachronic evolution of DOM in Romanian

DOM in Romanian can be traced back to the times of the earliest written language document attested, namely Neacşu's Letter ('Scrisoarea lui Neacşu') from 1521. Since then, the spreading of DOM has been well documented and analyzed (see e.g., Onu 1957, Niculescu 1965, von Heusinger & Onea 2008, Avram & Zafiu 2017). The investigations show that in the 16<sup>th</sup> century *pe*-marking was already attested with personal pronouns and proper names and was spreading to other types of referring expressions. The present study explored the development of the *pe*-marker along the referentiality scale to other types of referring expressions, besides pronouns and proper names, from 1800 to 2000. Another goal of the study was to investigate whether *pe*-marking was associated with discourse-pragmatic effects similar to those observed for present-day Romanian.

The corpus study comprised twelve short stories that were selected based on two criteria: (i) each short story revolved around a human protagonist; (ii) each story involved a limited number of human referents, as I investigated all referential chains established in each story. To compare the data more systematically, the time span of 200 years was divided in four spans of fifty years each. Every referent encountered in each story was manually coded with respect to its animacy, referentiality, information status (i.e., whether it referred to given or new information) and referential persistence (i.e., the nextmention bias and the frequency of subsequent mention of each referent). Below I present the main results of the diachronic investigation of DOM in Romanian.

#### 1.2.1. Animacy and definiteness

A constant increase in the overall use of *pe*-marking can be observed since the beginning of 1800. A closer inspection of the results reported in Table 2 show that in the first two intervals (i.e., 1800-1850 and 1850-1900 respectively), only about 15% of the total

occurrences of DOs received the *pe*-marker. DOM reaches its peek between 1900 and 1950. After this point, a decrease in the overall use of *pe*-marking is observable.

	1800-1850	1850-1900	1900–1950	1950-2000
-pe	88%	85%	80%	84,2%
+pe	12%	15%	20%	15,83%

Table 2: Evolution of DOM from the 19<sup>th</sup> to the 20<sup>th</sup> century (Lindemann 2018)

The results furthermore show that DOM developed along the same scales that are relevant for accounting for its distribution in present-day Romanian, which were introduced in section 1.1. above. More concretely, we find that animacy, referentiality, specificity and topicality are the factors that determine the use or absence of pe.

First, as in nowadays Romanian, *pe*-marked DOs are necessarily associated with animate referents. Irrespectively of the time span analyzed, over 90% of the DOs that received the *pe*-marker are associated with human referents, whereas only 10% of the non-*pe*-marked DOs have animate referents.

Second, the percentage of *pe*-marked DOs drops from left to right on the definiteness scale for each time span investigated. More concretely, those types of referring expression high on the definiteness scale, such as personal pronouns and demonstrative pronouns are systematically preceded by *pe*, if they are associated to human referents, whereas other types of referring expression are marked to a lesser extent or not at all. This diachronic development mirrors the findings attested for Spanish reported on in von Heusinger & Kaiser (2005). Like in present-day Romanian, the only proper names that do not receive DOM are toponyms.

The picture becomes more interesting if we turn to definite and indefinite noun phrases, which constitute optional DOM domains in present-day Romanian. Table 3 presents the distribution of *pe*-marking with (modified) definite and indefinite noun phrases. Overall, few definite and indefinite noun phrases receive the *pe*-marker.

Table 3:Distribution of *pe*-marked DOs with definite and indefinite noun phrases<br/>(Lindemann 2018)

+pe	1800-1850	1850-1900	1900–1950	1950-2000
Def. mod. NP	7%	45%	43%	43%
Def. unmod. NP	10%	33%	29%	1%
Indef. mod.NP	5%	0	14%	0
Indef. unmod.NP	11%	0	35%	0

Definite modified noun phrases, which are associated with masses of people, as illustrated in (8a) or with non-human referents, as illustrated in (8b), remain unmarked throughout the corpus.

(8a) [...]care pune batalionul de la Drăgăşani [...].<sup>1</sup>
which puts batallion.DEF of Drăgăşani
`[...] which puts the battalion of Drăgăşani.'

(8b) [...] c -a văzut acest cîine, care [...].<sup>2</sup>
that has seen this dog which
'[...] that s/he saw this dog, which [...].'

Definite unmodified noun phrases remain mostly unmarked. This observation is particularly true for the last time span investigated. A reason for the systematic absence of *pe*-marking from this domain is a DOM-independent rule of Romanian, which does not allow the combination of a preposition (except for *cu*, 'with' and *de-a*, 'as') with a noun with an overt definite article, if this noun is not further modified, as seen in (9). This phenomenon, known as *article drop* (Dobrovie-Sorin 2007), and limited otherwise to prepositions, holds for use of *pe* as DOM as well.

(9) Am stat pe scaun(\*-ul).

have sat pe chair-DEF

'I sat on the chair.'

<sup>&</sup>lt;sup>1</sup> Lindemann (2018, 87).

<sup>&</sup>lt;sup>2</sup> Lindemann (2018, 87).

Some systematic exceptions from the grammatical rule mentioned above were found in the present corpus, which allow the presence of the *pe*-marker preceding the definite noun in the absences of other modifiers, as illustrated in (10a) and (10b). The archaic usage of certain kin terms allows for the *pe*-marker, as these noun phrases behave like logical proper names in the short stories and contribute to the unique identifiability of their associated referents.

- (10) (a) Amstrigat pe şeful.<sup>3</sup>
   have called PE chief.DEF
   'I have called the chief.'
  - (b) Am văzut pe tata.have seen PE father.DEF'I have seen (my) father.'

As for indefinite noun phrases, they prefer not to be *pe*-marked in the investigated corpus. The non-*pe*-marked indefinite noun phrase in (11) bares an unspecific reading and is associated with a referent that does not play an important role in the short story in which it appears.

(11) [...] vei avea un amic modest [....].<sup>4</sup>
will have an acquaintance modest
'[...] (you) will have a modest acquaintance [...].'

Whenever the indefinite noun phrase receives the *pe*-marker, as in example (12), its associated referent is the protagonist of the short story, being relevant for the developing of the plot. This importance at the level of the discourse is further mirrored by the high frequency of subsequent mentions of this referent and by its topic shift potential. I will elaborate on the discourse function of *pe*-marked referents in the next section.

(12)	[]	a	văzut	pe	un	tâlhar. <sup>5</sup>
		has	seen	PE	a	robber
'[] has seen a robber.'						

<sup>&</sup>lt;sup>3</sup> Lindemann (2018, 88)

<sup>&</sup>lt;sup>4</sup> Lindemann (2018, 89)

<sup>&</sup>lt;sup>5</sup> Lindemann (2018, 90)

## 1.2.2. DOM and its effects at the discourse level

To determine the discourse-level effects of *pe*-marking during the investigated time span, three aspects were explored, namely: (i) the information status of the referents; (ii) the type of referring expression used to pick up the referents for the first time, and (iii) the referential persistence or frequency of the DO referents. The information status of a referent establishes whether it represents new information, or whether it picks up old, already established information. The second parameter, the type of referring expression, investigates the reference form used as a first anaphoric device for the referent associated to the initial DO. The general assumption is that prominent reference needs less elaborated types of referring expressions, whereas the opposite holds true for less important information (see chapter 2 for a more ample discussion on the processing of reference forms). The third parameter, referential persistence or continuity, establishes the next-mention bias and the frequency of subsequent mention of each referent associated to a direct object.

The investigation revealed that from as early as the beginning of the 19<sup>th</sup> century, *pe*-marking had similar effects to nowadays. With respect to information structure, more *pe*-marked referents are used for old or already established referents than for introducing new referents, as summarized in Table 4.

Table 4: Distribution of <i>pe</i> -marking according to information status (Lindemann 2018)
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+pe	1800-1850	1850-1900	1900–1950	1950-2000
Given referents	73%	50%	74%	79%
Brand-new referents	27%	50%	26%	21%

These results are in line with the observation that *pe*-marking rarely occurs with indefinite noun phrases, rather preceding pronouns, demonstratives and definite noun phrases. Table 5 offers a more detailed distribution of the first anaphoric expression used to pick up the referents of the *pe*-marked direct objects representing given information. *Pe*-marked definite unmodified noun phrases and proper names are predominantly used to pick up already established referents. Unsurprisingly, indefinite noun phrases are used to introduce brand-new referents.

Table 5: Type of the first anaphoric expression used to pick up the *pe*-marked referents (Lindemann 2018)

Given information	1800–1850	1850-1900	1900–1950	1950-2000
Personal pronoun	100%	100%	100%	100%
Proper name	78%	100%	100%	87%
Definite mod. NP	64%	55%	85%	100%
Definite unmod. NP	100%	100%	100%	_
Indefinite mod. NP	25%	0	100%	_
Indefinite unmod. NP	50%	_	33%	100%

The results pertaining to the frequency of subsequent mention of the *pe*-marked referents are summarized in Table 6 below. The table shows that these referents are more prone to be re-mentioned in the next three sentences after being introduced in the discourse. This is particularly true for the immediately adjacent sentence, in which at least 38% of referents are being subsequently mentioned.

Table 6: Frequency of subsequent mention of the *pe*-marked referents (Lindemann 2018)

+pe	1800-1850	1850-1900	1900–1950	1950-2000
S1	43%	38%	39%	52%
S2	24%	27%	29%	55%
<b>S</b> 3	26%	24%	24%	45%

In sum, the effects of the *pe*-marker on the direct objects are observable at the discourse level as well, such that their associated referents show higher next-mention and frequency of mention rates. Before concluding this part, I review some relevant findings from the corpus analysis pertaining to the distribution of clitic doubling in relation to DOM.

## 1.2.3. Clitic doubling

Clitic doubling is a phenomenon strongly associated with present-day Romanian. Accordingly, I investigated the spreading of the accusative pronominal clitic during 1800 and 2000 as well. As illustrated in Table 7, clitic doubling with *pe*-marked DOs was fairly uncommon in the analyzed corpus. At the beginning of the 19<sup>th</sup> century, only a minority

of 4% of the total occurrences of direct objects were doubled by a weak pronoun. We furthermore notice that the distribution of clitic doubling rises constantly, such that by the end of the analyzed period, over 20% of direct objects are doubled by a weak pronoun.

Table 7: Clitic doubling for DOs in the 19<sup>th</sup> and 20<sup>th</sup> centuries (Lindemann 2018)

	1800-1850	1850-1900	1900-1950	1950-2000
Clitic doubling	4%	8%	13%	22%

Results furthermore show that the occurrence of the weak pronoun doubling the direct object is connected to the presence of the *pe*-marker throughout each time span. In other words, significantly more *pe*-marked direct objects are being clitic doubled than non-*pe*-marked objects, as illustrated in Table 8. Furthermore, we notice a rise in clitic doubling in the presence of the *pe*-marker, but not in other contexts.

Table 8: Distribution of clitic doubling with *pe*-marked direct objects (Lindemann 2018)

	1800-1850	1850-1900	1900-1950	1950-2000
+pe	21%	32%	46%	97%

Clitic doubling follows the evolution path of *pe*-marking (for similar results see von Heusinger & Onea 2008). A closer inspection of the development path of clitic doubling reveals the existence of contexts, which obligatorily triggered clitic doubling, other contexts that blocked its occurrence and yet other contexts that optionally allow it. The position of the direct object is a strong indicator of the presence of the clitic doubling. In other words, preverbal, topicalized direct objects, were always clitic doubled in the analyzed corpus, irrespective of the presence or absence of DOM, as seen in (13).

(13) Bătaia Sculenilor nimeni n -a descris -o [...].<sup>6</sup>
Battle of the Sculeni noone not has described CL.Fem.SG.Acc
'The Battle of the Schuleni has not been described [...].'

<sup>6</sup> Lindemann (2018, 95)

The referentiality of the direct object influenced the use of clitic doubling as well. When realized as *pe*-marked personal or relative pronouns, direct objects were obligatorily doubled, irrespective of the animacy status of the associated referent.

For direct objects realized as proper names, we observe changes in their distributional patterns during 1800 and 2000. While proper names were not clitic doubled at the beginning of the 19<sup>th</sup> century, unless they were topicalized, they were optionally doubled during 1850 and 1950. The presence or absence of the weak pronouns was conditioned by the animacy of the direct object, such that only when the referent associated with the direct object was human, was the occurrence of the weak pronoun possible. Whenever the direct object referred to non-human referents, clitic-doubling was blocked. By the end of the analyzed time period, all *pe*-marked direct objects, which referred to human referents were also clitic doubled.

Definite and indefinite noun phrases in direct object position were non-*pe*-marked during 1800 and 1950. Starting with 1950, few examples of human *pe*-marked and clitic doubled definite modified noun phrases could be found.

In sum, in the analyzed corpus, the presence of clitic doubling was conditioned by the position of the direct object, such that topicalized direct objects simultaneously received the *pe*-marker and were clitic doubled. Like for *pe*-marking, an additional factor triggering clitic doubling was definiteness.

## **1.3.** Conclusions

This chapter summarized the results of a corpus analysis investigating the gradual diachronic development of DOM in Romanian from 1800 to 2000. Diverse typological-functionalist analyses of DOM in other languages showed that this phenomenon is mainly triggered by animacy and definiteness or referentiality. Based on such observations, the prediction was that DOM spreads steadily from elements high in animacy and definiteness to elements lower on these scales. These predictions were borne out in the corpus study described in this section. In particular, results showed that the grammaticalization process of DOM was completed for personal and relative pronouns at the beginning of the 19<sup>th</sup> century, as both types of referring expressions obligatorily triggered DOM. Furthermore, results showed that the transition from one type of referring expression to another was favored by subtle differences, such that at the beginning of the 19<sup>th</sup> century only those definite noun phrases received the DOM, which had a stable and

unambiguous referent, while indefinite noun phrases received the DOM whenever their associated referent was specific. However, results highlighted the observation that between 1950 and 2000 the evolution of DOM reverses, such that during this period, definite and indefinite noun phrases are less frequently *pe*-marked than at the end of 1950.

The development of DOM in Romanian did not emerge out of the syntactic need to assign case to the direct object, but out of discourse-pragmatic considerations. The spreading started with personal pronouns, which are morphologically marked for case and do not need to be structurally case-marked (see, e.g. von Heusinger & Onea 2008). As for present-day Romanian, the corpus study showed that DOM marked referents were associated with a higher discourse structuring potential compared to their non-marked counterparts.

## **B(i)-2** Prominence in discourse

This section is dedicated to a series of experimental studies on different aspects of discourse prominence. After introducing the basic concepts of prominence and some important open issues on this topic, I discuss the most discussed prominence-lending factors. The centerpieces of this discussion will be three factors that I have focused on in my own research, namely: animacy, thematic roles, and the implicit causality of interpersonal verbs. In this section, I furthermore introduce the notion of discourse structuring potential, which is used to account for the forward-looking effects associated to different types of referring expressions. Finally, in the last part of this section, I review the Dual Processing Model, which I developed together with two colleagues at the University of Cologne to account for the discourse effects of definite and indefinite noun phrases.

## **2.1. Prominence**

The findings outlined in this section have been primarily discussed in the following publications:

- Chiriacescu, Sofiana. 2011. Factors contributing to the salience of referents. In: Studia linguistica et philologica, Omagiu Profesorului Nicolae Saramandu la 70 de ani, edited by Manuela Nevaci. Bucuresti: Editura Universitatii. ISBN: 191-198 6061600550, 9786061600557.
- Jasinskaja, Katja, Sofiana Chiriacescu, Marta Donazzan, Klaus von Heusinger & Stefan Hinterwimmer. 2015. Prominence in discourse. In Amedeo De Dominicis (ed.), Prominences in Linguistics. Proceedings of the pS-prominenceS International Conference. University of Tuscia, Viterbo: DISUCOM Press, 134-153. ISBN: 9788894043105.
- Lindemann, Sofiana. 2017. Referenz und Prominenz. Germanistische Beiträge, Band 41/2017, Editura Universitatii din Sibiu, Sibiu. 173-195. ISSN: 1454-5144.
- Sofiana I. Lindemann. 2021. Pronoun resolution and the factors that influence it. Exploring Language Variation, Diversity and Change. Cambridge Scholars Publishing. ISBN: 1-5275-7183-1.

In the last decades, the study of discourse has received an increasing amount of attention from a wide range of disciplines, including linguistics and psycholinguistics. This represents a major development in research, given the fact that linguistics used to focus almost exclusively on isolated sentences. One of the major concerns of discourse analysis has been the investigation of the linguistic devices that contribute to the "discoursehood" of a multi-sentence text. More specifically, the focus has been on those overt or covert linguistic signals that glue utterances together in such a way that the result is a connected and meaningful discourse stretch. There seems to be a general consensus in the literature that what turns multiple sentences into a meaningful discourse unit is their cohesion and coherence. Referential relations and discourse relations are two core components that contribute to the connectedness of various utterances to produce a discourse. Different connectivity devices may linguistically mark referential and relational coherence. For example, referential continuity may be achieved by means of anaphoric relations, while discourse relations may be indicated by connectives and adverbials. In the remainder of this chapter, I focus on different types of referring expressions as a means to achieve coherence.

The investigation of the use and contribution of referring expressions has a long tradition and has been explored from different linguistic perspectives. The referential-semantic view on the contribution of noun phrases, which goes back to Frege and Russell, assumes that definite descriptions express an existential and uniqueness condition, while indefinites make just an existential assertion (and a non-uniqueness implicature) to the sentence (Heim 2011). Dynamic semantics and discourse representation theories (e.g. Karttunen 1969/1976, Heim 1982) assume that both definite as well as indefinite noun phrases introduce discourse referents (while quantifiers do not). The main contrast between a definite and an indefinite noun phrase boils down to the contrast between a familiar and a novel discourse referent.

Another view on definiteness comes from different pragmatic approaches, which highlight the importance of information status on the felicitous use of different types of anaphoric forms. At least since Prince (1981), it is commonly known that a categorical distinction between given and new information and thus between definite and indefinite noun phrases as referring to known and new entities respectively, is too simplistic and has to be reconsidered.

Referential expressions primarily serve to introduce discourse referents with particular referential properties and to connect them to previously introduced ones. They also contribute to the activation status of these referents in different ways and thus to the general structure of the discourse. The general consensus is that speakers explicitly or

29

implicitly indicate the degree of accessibility associated to a referent at each point in the discourse. According to this view, each type of referring expression signals a particular degree of accessibility (e.g. Givón 1983, Ariel 1990, Gundel, Hedberg, and Zacharski 1993, Grosz et al. 1995). This observation is captured within intuitive scales or hierarchies, such as the Accessibility Marking Scale, as introduced in (14).

(14) The Accessibility Marking Scale (Ariel 1990: 73), with my own examples:

Expression	Example		
Full name + modifier	Tudor Vianu, the president		
Full ('namy') name	Tudor Vianu		
Long definite description	The nice and consequent president		
Short definite description	The president		
Last name	Vianu		
First name	Tudor		
Distal demonstrative	That president we met last week		
+modifier			
Proximal demonstrative	This president we met last week		
+modifier			
Distal demonstrative +NP	That car		
Proximate demonstrative	This car		
+NP			
Distal demonstrative	that		
Proximate demonstrative	this		
Stressed pronoun +gesture	SHE (with gesture)		
Stressed pronoun	SHE		
Unstressed pronoun	she		
Cliticized pronoun	(no examples in English)		
Reflexive	herself		
Gaps	Zero, traces and agreement		

Low Accessibility Markers

High Accessibility Markers

On such accessibility-related scales, different types of referring expressions are arranged in a precise way, such that pronouns and other lexically reduced types of referring expressions represent high accessibility markers, while definite and indefinite noun phrases, which occupy a position at the other extreme of such scales, are considered low accessibility markers. The use of particular types of referring expressions are predicted based on their associated level of accessibility. In other words, the basic idea is that lexically less elaborated referring expression, e.g., a pronoun in English, refers to the entity that is most accessible in the speaker's and/or addressee's mental representation, whereas other more elaborated forms (e.g., definite modified noun phrases) refer to entities that are less accessible. We thus find an inverse relation between accessibility and referential form.

One of the most-researched challenges of language processing has to do with reference resolution. Consider a sentence like He won a gold medal, in which the expression he could refer back to David Popovici, Caeleb Dressel, or to any human masculine singular referent who won a medal. On its own, the personal pronoun delivers insufficient information to successfully resume the intended referent, as it is semantically under-informative. Any member of a potentially very large set of referents could serve as the antecedent expression of the pronoun. As a consequence, successful comprehension of such anaphoric forms requires a mechanism of narrowing down the domain of potential referents. Despite such complex language mechanisms, we encounter 'underspecified' forms very frequently in both written and spoken language and are able to interpret them without difficulties. These considerations rise the following general questions: what constrains the referential domains for different referring forms: based on which cues can language users expect certain referents but not others to be picked up next? One of the major tasks for researchers is clear: to identify the different factors that contribute to entity prominence. Here, I outline several key factors, including my own contribution, that have been proposed to address this question.

#### 2.2. Factors contributing to the prominence of referents

Referring expressions introduce and continue reference by indicating to the addressee how accessible a referent is at a given point in the discourse (Ariel 1990). Determining the degree of accessibility associated to a referent at a given point in the discourse is a complex task and can be determined by several factors. A lot of research has been dedicated to filtering out the factors that contribute to referential accessibility. Some of the more discussed ones are reviewed below, highlighting my contribution to these issues.

Competition is one of the factors that has been shown to impact the choice of referring expressions in discourse. Studies investigating the processing of pronouns in discourse have shown that the presence of multiple referents bearing the same gender, present within the clause or discourse, diminishes the probability of any of these referents to be resumed to a pronoun (e.g., Givón 1981, Ariel 1990). Crucially, recent investigations convincingly showed that the degree of accessibility associated to a referent is also influenced by its animacy (e.g., Dahl & Fraurud 1996). Based on the findings from a sentence completion experiment, which explored the influence of animacy (i.e., human vs. non-human) on choice of referring and its interaction with other factors, such as gender, I showed that a context involving more than one referent contributed to the production of more definite noun phrases in the following sentences (i.e. Chiriacescu 2015, Lindemann 2021). For example, participants were more likely to continue a sentence that contained two human referents of different genders, like Amanda saw the man in the park with a sentence like The woman encountered the same man two days ago in the mall, than with a sentence using a personal pronoun, as for example She encountered the same man two days ago in the park. Importantly, the rate of pronominalization dropped also in contexts in which a pronoun would have nonambiguously referred back to one of the two referents. This pattern changed in sentences that contained two referents that differed in terms of their animacy, as the overall pronoun production rates significantly increased for both referents. This study highlighted a novel effect on the use of more or less elaborated referring expressions that hinges on the animacy status of the referents (see Chiriacescu 2014 on similar argumentations with respect to the replication of Gernsbacher & Shroyer's 1981 study on English indefinite this). These results parallel the conclusions drawn from neurolinguistic investigations, which indicated that transitive sentences are processed more easily when their arguments are distinguishable based on animacy (e.g. McElree 2006).

Another factor that has been shown to impact the accessibility associated to a referent is the degree of **unity** between the anaphor and antecedent. In general, unity is concerned with the distance in number of clauses between anaphor and antecedent. A tight cohesion between two mentions of the same referent contributes to the use of reduced types of referring expressions, while a loose connection generally contributes to the production of lexically more elaborated referring expressions (e.g. Givón 1981).

The **givenness** status of a referent has also been shown to impact the degree of accessibility of a referent and the choice of referring expression. Accordingly, an entity that has already been evoked in the discourse and represents given information, known by the discourse participants, needs less elaborated types of referring expressions to be picked up. Conversely, newly introduced information, that does not represent shared knowledge between discourse participants, will be introduced in the discourse by more explicit types of referring expressions, such as (in)definite noun phrases (Prince 1981, Chafe 1976).

A structural factor that has been extensively shown to impact reference form production and comprehension is the **syntactic function** of a referent. Being realized as the grammatical subject as compared to a direct object or oblique, contributes to a higher rate of subsequent pronominalization of that referent (Givón 1983, Lambrecht 1994, Arnold 1998, Ariel 2001, Lindemann 2020). According to these observations, an initial sentence like the one in (15a), in which two female referents are introduced by means of proper names in the discourse, are more likely to be continued as in (15b) and (15d), with a pronominalized subject. Studies showed that participants consider a sentence like (15c), in which only the initial object is pronominalized, as being non acceptable.

- (15) (a) Anna saw Mary in the central park.
  - (b) She<sub>1</sub> told Mary (that she was thinking about her that day).
  - (c) ? She<sub>2</sub> told Anna (that she was thinking about her that day).
  - (d) Mary told her<sub>1</sub> (that she was thinking about her that day).

The psycholinguistic literature substantiates these observations with more data. For example, Clark and Card (1969) found that in a sentence memory task, participants tended to remember grammatical subjects more accurately than referents realized in other grammatical positions.

Furthermore, research demonstrated that a pronominal anaphor is more readily interpreted as referring back to an antecedent realized in a **parallel grammatic position** (Sheldon 1974, Gordon et al. 1993, Arnold 1998, Ariel 2001, Kehler 2002, among others). Returning to the example above, the interpretation of the personal pronoun in (15b) as being coreferential with the subject of the previous sentence is facilitated by the parallelism in terms of syntactic position between the two instances of the referent. Resuming the referent associated to the direct object by means of a pronoun in subject

position, as illustrated in (15c), is rather unnatural and further contributes to the dispreference of this continuation.

Apart from their (parallel) syntactic position, **the linear order** of referents plays also an important role in determining the degree of accessibility associated to a referent (e.g. Gernsbacher and Shroyer 1989, Gordon et al. 1993). In this view, the referent that is mentioned first within a sentence, independently of its syntactic realization, is associated with a higher level of accessibility compared to a referent introduced later in the sentence. Usually, the first position in a sentence corresponds to the grammatical subject position and, thus, it is not easy to tease apart the role played by these two factors in guiding pronoun resolution. However, Kaiser and Trueswell (2008) and Lindemann (2022), among many others, showed that both parameters guide reference processing and that both first mentioned referents and grammatical subjects are resumed by less explicit types of referring expression. Two other factors that have been more recently associated with anaphoric resolution are thematic roles and verbal implicit causality. In the next sections, I will discuss my own findings with respect to the contribution of these parameters to the process of referring and discourse management in general.

#### 2.2.1. Thematic roles affect pronoun production

The next review includes insights from the following papers and presentations:

- Sofiana I. Lindemann. 2022. Thematic roles affect pronoun production in Romanian. In: Gianorllo, Chiara, Lukasz Jędrzejowski, Sofiana Lindemann. USB Monographs, Köln. ISBN: 978-3-946275-13-8.
- Sofiana I. Lindemann, Stanca Măda, Laura Sasu & Mădălina Matei.
   2020. Thematic role and grammatical function affect pronoun production.
   Proceedings of the 11th International Conference of Experimental Linguistics,
   October 2020, Athens, Greece. ISSN: 2529-1092.
- Sofiana I. Lindemann. *Thematic role biases in pronoun processing*. Presentation at the 18th conference on British and American studies. Transilvania University of Braşov, Romania, 20-21 May, 2022.
- Sofiana I. Lindemann. *Thematic roles and grammatical function affect pronoun production*. Presentation at the 11th international conference on experimental linguistics. Paris, October 2022.

There is still no consensus about the role played by thematic roles in guiding pronoun resolution, as some studies argued that thematic roles do not play a role (Kehler, Kertz, Rohde & Elman 2008), while others suggested that they do (Kaiser, Li & Holsinger 2011). I investigated these two alternatives in a sentence production study on Romanian, which was designed to find out whether thematic roles alter the distributional patterns of null and overt pronouns in Romanian, in addition to the long-attested subject bias.

The items used for the experiment had the structure NAME-verb-NAME, whereas the two human referents introduced by proper names had the same gender. To keep grammatical and thematic roles apart, we used transfer-of-possession verbs. These verbs were particularly suited for the purposes of this study, as some realize the Source referent in subject position (e.g., *give* in CND\_1 in Table 9), while others realize the Goal referent in grammatical subject position (e.g., *get* in CND\_2 in Table 9).

CND1_Goal=Non-Subject	Paul i-a dat un bilet lui George	
	Paul gave a note to George.	
CND2_Goal=Subject	Ana a primit o carte de la Paula.	
	Ana got a book from Paula.	

Table 9: Example items with English translations

Participants were asked to read the initial sentences and to provide one-sentenced written continuations to each item. We crossed grammatical function (subject and object) and thematic role (Source and Goal) and created 18 target items, 9 for each condition and an additional set of 20 filler items, which were then distributed in two lists. Based on the considerations found in the literature, we expected participants to produce null pronouns to resume the initial subject referent and overt pronouns to pick up the initial object, irrespective of the thematic role of the referents. However, if being realizes with a particular thematic role does indeed matter, the prediction is that Goal referents will increase the rate of (null and overt) pronominalization, irrespective of grammatical function.

50 native monolingual Romanian students from the Transilvania University of Braşov participated in the study and each experimental list took approximatively 25 minutes to complete. Three annotators manually coded the resulting corpus of 900 sentences for the type of referring expressions used to resume the subject and object referents.

The results from the present study revealed three main observations. Firstly, as expected based on the findings from the literature, the syntactic function of the referents in the initial sentences played an essential role in the referential production patterns observed. Participants produced more covert pronouns when referring back to the initial subject, than for referents realized by means of other syntactic functions. Romanian null pronouns seem to represent the default choice for resuming a subject antecedent. This finding converges with the predictions and other theoretic observations on Romanian (Gramatica Academiei Române 2005, Givón 1981).

Secondly, the findings with respect to the production preferences of overt pronouns are more interesting. These pronouns seem to be more versatile, as they are used to resume both the initial subject and object referents, however, still with a slight preference for the previous subject (57%) rather than the non-subject (43%). The results highlight the observation that we do not find clear distributional patterns of overt pronouns in terms of syntactic structure.

Finally, the results contribute to the debate on the role of thematic roles in the referring process, as participants' responses indicated a significant role played by thematic roles in guiding subsequent referential choices (e.g., Kaiser, Li & Holsinger 2011). In contexts that involve transfer-of-possession verbs participants chose more (null and overt) pronouns to refer back to the initial Goal than to the initial Source. Interestingly, the Goalbias was stronger for the non-subject condition than for the subject condition. Being realized as the thematic Goal increased the rate of subsequent overt pronoun production for the non-subject, but not for the subject referents. In sum, the findings highlighted the privileged role of Goals over Sources in terms of reference production in general, and the use of reduced types of referring expressions in particular. For the Romanian data, we found that thematic roles particularly benefit overt pronoun production (as compared to null pronoun production which strongly relied on grammatical role).

## 2.2.2. Effects of implicit causality on the subsequent discourse

This section is based on the considerations formulated in the following publications and conference presentations:

- Sofiana I. Lindemann & Sabina Homană. 2019. *The causality implicit in verbs*.
   Scientific Bulletin of the Politehnica University of Timisoara. Transactions in Modern Languages. Vol. 18. Nr. 1. p. 14-28. ISSN: 1583-7467.
- Mădălina Matei & Sofiana I. Lindemann. 2022. Implicit causality biases of Romanian interpersonal verbs: elicitation and initial results. Bulletin of the Transilvania University of Braşov, Series IV: Philology and Cultural Studies, Vol.15(64).
- Sofiana I. Lindemann & Mădălina Matei. Verbal implicit causality and discourse connectives in Romanian sentence production. International conference of he German Science Foundation, Deutsche Gesellschaft für Sprachwissenschaft. Köln, Germany, March 2023.
- Laura Sasu & Sofiana Lindemann. The effect of implicit causality on reference resolution. 17th conference on British and American Studies. Universitatea Transilvania din Braşov, Romania. May 10-11, 2019.
- Sofiana Lindemann. Verb-based implicit causality in sentence production.
   Conference: The first international conference on emotions, language processing and psycholinguistics. The Iorgu-Iordan-Al. Rosetti Institute of Linguitsics, Romanian Academy, Bucharest, Romania. 12-15. October 2017.
- Sofiana Lindemann. Verb-based implicit causality. CADIM 2, Universität zu Köln, Germany. June 22-23, 2017.
- Sofiana Lindemann. Next mention biases and the implicit causality in verbs.
   15th conference on British and American Studies. Universitatea Transilvania din Braşov, Romania. May 12-13, 2017.

Another factor that impacts the prominence of referents is **implicit causality** (e.g., Au, 1986; Brown & Fish, 1983; Caramazza, Grober, Garvey, & Yates, 1977). In pretheoretical terms, this property defining some verbs is understood as the amount of knowledge that may be activated when interlocutors decide who did what. In their work on the implicit causality of interpersonal verbs, Garvey and Caramazza (1974) argued that this property stems from the semantics of the verb root and that the direction of causal assignment may differ. They introduced a threefold distinction with respect to the direction of causal assignment. The first verb class comprises verbs such as *admire* or *approach* that assign the cause of the event to the first noun phrase, the subject. The second class is made up of verbs such as *admire* or *fear*, which attribute the cause of the event to the second referent, the object. And finally, the third class of verbs contains verbs that were shown to be neutral with respect to the direction of assignment of the cause of the event were empirically tested and validated in a series of experimental studies.

Since the initial considerations formulated in Garvey & Caramazza (1974), different taxonomies have been devised to classify interpersonal verbs (Au, 1986; Brown and Fish, 1983, Rudolph and Försterling, 1997). The research I conducted mainly relies on Rudolph and Försterling's 'revised action-state taxonomy', which classifies interpersonal verbs into two main categories, namely 'action verbs' and 'state verbs', which are further divided into two subcategories, as illustrated in Table 10.

Table 10: The revised action-state taxonomy of interpersonal verbs (Rudolph and Försterling 1997)

Main categories	Subcategories	Examples
Action verbs	Agent-Patient	help, convince, seduce
	Agent-Evocator	criticize, respond, praise
State verbs	Stimulus-Experiencer surprise, impress, inspire	
	Experiencer-Stimulus	admire, love, forgive

The cross-linguistic validity of the verb categories put forth by Rudolph and Försterling (1997) was empirically tested on such diverse languages as English, German, Spanish, Japanese and Mongolian, Russian. Extensive research was carried out in order to explore whether verbs expressing the same actions and pertaining to the same categories proposed by Rudolph and Försterling, display the same patterns with respect to the structure given to the ensuing discourse. My own research extends the aforementioned considerations by

investigating for the first time Romanian verbs with respect to their implicit causality patterns.

Exploring the causality implicit in verbs is particularly relevant as such verbs may have different contributions to the discourse. Besides ascribing the implicit cause towards one or the other referent, the implicit causality interpretation associated with the verb used in one sentence may influence the interpretation biases of an anaphoric pronoun found in the immediately following sentence. Take for an illustration example (16), which introduces two human referents, *Susann* and *Annabella*.

- (16) (a) Susann admired Annabella. She<sub>2</sub> steers the work of the committee.
  - (b) Susann surprised Annabella. She<sub>1</sub> steers the work of the committee.

The personal pronoun in the second sentence of (16a) is more readily resumed towards the second referent introduced, *Annabella*, as it is the causally implicated referent. On the contrary, given the use of the verb *surprise* in example (16b), which is a stimulus-experiencer verb, the personal pronoun in the second conjunct is preferentially interpreted as co-referring with the subject referent, *Susann*, rather than with the object.

Besides its contribution to anaphora resolution and to next-mention biases, verbal implicit causality was shown to impact the way in which the discourse proceeds, as it tends to trigger more explanation continuations compared to other types of verbs. For example, Kehler et al. (2008) found that roughly 60% of all implicit causality verbs used in their study triggered explanations, while only 24% non-implicit causality verbs did so. Returning to the examples given in (16) above, the prediction is that participants will continue these sentences by explaining what makes *Annabella* admirable by *Susann* in (16a), and why *Susann surprised Annabella* in (16b). On the contrary, non-implicit causality verbs such as *hear* or *see*, do not give rise to similar predictions in terms of type of continuation (i.e., explanations).

The effect of implicit causality triggered by interpersonal verbs is robust and it has been shown to hold in adults (e.g., Rudolph & Försterling, 1997) and children (e.g., Au 1986) alike. In a similar manner, implicit causality effects have been shown to hold across languages and cultures (e.g., Brown & Fish 1983, Hartshorne & Snedeker 2013, Bott & Solstad 2014). For example, Hartshorne et al. (2014) found similar IC patterns in Spanish, Mandarin, Russian, Japanese, and other languages, however, the study highlighted the fact that IC effects may vary in strength from language to language. Up to this point, there is no study on the implicit causality of interpersonal verbs in Romanian. One of the aims of the PCE project I am coordinating at present is to provide normative data on the implicit causality biases of interpersonal verbs in Romanian to researchers, scholars and professionals working in different areas. On a more general level, we investigate causal relations triggered by verbs to shed light on the process of referring in general.

In the first phase of the project, we explored the semantic structure underlying different verb types, which was shown to constrain next-mention preferences (subject vs. object) and the choice of coherence relations (e.g., Explanations vs. other types of continuations). We furthermore investigated how the observed continuation biases interact with the sentence connective "because" in modulating participants' continuations.

In our first sentence-continuation experiment, we elicited biases for 64 high frequency verbs in Romanian. Following the predictions formulated in the literature, we expected implicit causality to impact: (i) next-mention biases, such that the causally implicated referent will be picked up next (Caramazza, Grober, Garvey, Yates 1974; McKoon, Greene, Ratcliff 1993; inter alia); (ii) the continuation type, such that participants will continue the discourse with a sentence describing the cause of the IC event (e.g., Kehler & Rohde 2013).

75 native monolingual Romanian students participated in the experiment (age range = 19-45 years, 54% female and 46% male). We selected 64 verbs from several lists of German, English and Spanish verbs presented in Bott & Solstad 2014, Goikoetxea et al. 2008, according to four criteria: (i) the verbs should belong to one of the four types of verbs from the revised action-state taxonomy introduced above (i.e., Stimulus-Experiencer (SE), Experiencer-Stimulus (ES), Agent-Patient (AP), Agent-Evocator(AE)); (ii) the verbs should display a clear next-mention bias towards one of the two referents (i.e. as close to 100% as possible); (iii) should sound natural in a sentence with two human referents and (iv) should be easily translated to Romanian. We ended up selecting 16 SE, 16 ES, 16 AP and 16 AE verbs to be tested.

For each verb type, we constructed a transitive sentence of the form NP1 V NP2, whereby the noun phrases were realized as two same-gendered proper names (i.e., either two masculine or two feminine proper names). The names were selected upon agreement by the four annotators of this study, so as to represent typical Romanian names. We furthermore selected names similar in length. Each experimental item had to versions,

one that ended with the connector "because" and one that ended in a full-stop prompt, as illustrated in Table 11.

Table 11: Sample experimental items from the Stimulus-Experiencer condition with English translations

SE, because	Mihai l-a surprins pe Andrei pentru că	
	Mihai surprised Andrew because	
SE, full-stop	Mihai l-a surprins pe Andrei.	
	Mihai surprised Andrew.	

Participants' task was to read each experimental item and to add one sentence continuation to each of them. It took about 25 minutes to complete each version of the study.

Two coders manually annotated the resulting corpus of 4.800 sentences for: continuation type (i.e., coherence relations used in the continuations formulated by the participants) and choice of next mention (i.e., subject/object coreference of the first anaphor). Pearson r reliability between the two coders was 96%. In the case of disagreement, differences were resolved through discussion. Based on the results obtained in the literature on IC in other languages, we predicted that participants will show a significant preference for Explanation relations regardless of prompt (Bott & Solstad, 2014; Kehler et al. 2008), with stronger preference for Explanations in the "because" condition. With respect to next-mention biases we expected to observe a preference for the causally implicated referent (i.e., a bias towards ref1/subject in SE and AP verbs and towards ref2/object in ES and AE contexts).

Preliminary results from the sentence-continuation study are reported below. Regarding the coherence relations, we observe an overall preference for Explanations, irrespective of the connector used. Moreover, we find a clear difference between the continuations in the because-condition compared to the continuations chosen for the fullstop condition, as illustrated in Figure 1. Fewest Explanation continuations are produced in the SE condition when prompted by "because".

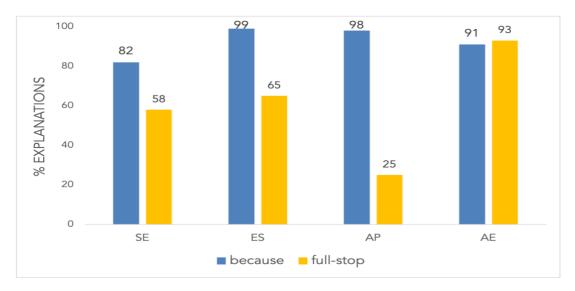


Figure 1: Explanation relations chosen for all types of verbs in the "because" and "fullstop" conditions

Results from the full-stop condition are more heterogenous. Despite an overall preference for Explanations, we find more variability in the coherence relations chosen by the participants. Moreover, for AP verbs, we find reversed patterns, as participants produced more Elaborations (47%) and Results (23%) than in the other conditions.

With respect to the next-mention biases generated by the four verb types, we find that, in general, the predictions were born out, as ES and AE verbs displayed the expected object bias, irrespective of the presence of the connective "because". Figure 2 shows the next-mention results for the because and full-stop continuations for each verb type.

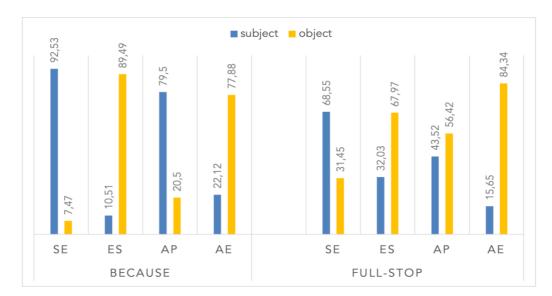


Figure 2. Proportion of subject and object continuations for the "because" and "full-stop" conditions and verb class

For the SE and AP verbs we find the expected subject-bias in the "because" condition and for the SE verbs in the full-stop condition as well. However, AP verbs showed the reversed patterns in the full-stop condition, as participants opted to continue taking about the object referent rather than about the initial subject.

In sum, results show that the selected Romanian verbs display consistent withinclass IC-biases. The strength of bias differs and we find that IC has a continuous rather than a dichotomous nature. Overall, the tested verbs showed the predicted preference for Explanations, irrespective of the presence of the connective (except for AP verbs). SE and AP verbs produced more causal attributions to referent1/subject, and SE and AE verbs produced more causal attributions to referent2/object, irrespective of the connective. AP verbs display this tendency for the "because" condition alone. Overall, we find more robust causality effects in the state verbs (SE and ES) than action verbs (AP, AE).

This is the first study investigating implicit causality biases of 64 verbs in Romanian. The preliminary results reported above replicate and extend similar findings from other languages. We could show that, similar to other languages, Romanian has several classes of verbs that give rise to different predictions with respect to next-mention biases and continuation types. Specifically, verbs already classified as NP1 based on their semantic content triggered continuations that evolved around the initial subject referent (or firstmentioned referent), whereas verbs classified in the literature as NP2, triggered more continuations about the object (or second-mentioned) referent. An exception were AP verbs, which did not conform to the predictions, as the initial subject was not the nextmentioned referent in participants' continuations. We moreover found that the patterns with respect to the state verbs were more robust compared to results from the action verbs. The statistical analysis of the present data as well as follow-up studies will shed more light upon these observations. Moreover, we will also investigate other parameters that were shown to hinge upon the verb type used in an initial sentence, namely: the type of referring expression used to pick up one of the two referents introduced in the sentence containing the verb; (ii) the sentence type (transitive vs. intransitive) used by participants to continue the critical items; (iii) topic shifts. We furthermore plan to investigate the interaction of IC with other sentence connectors (e.g., so, and, therefore) in different age groups (adults vs. children).

The previous sections reviewed some of the most important factors that contribute to a referent's prominence in terms of reference form selection. In the next two sections we

discuss the discourse structuring potential and the dual processing model of reference that were introduced to account for the use of definite and indefinite noun phrases in discourse.

# 2.3. The discourse structuring potential

The considerations presented in the previous sections highlighted that determining the degree of prominence associated to a given referent is a complex matter, since multiple weighted factors may be involved in this process. Establishing the prominence of a referent is a backward-looking mechanism that requires the search of its antecedent expression. The general consensus is that referents realized in preferential positions (e.g. syntactic, discourse-semantic, etc.) are more prominent in the discourse, which is in turn reflected by the type of anaphoric expression that will be used to resume these referents. Accordingly, prominent referents need less elaborated types of expressions to be picked up, whereas less prominent referents need more lexical material to be mentioned (e.g., Ariel 2001). Thus, the type of referring expression used to (re)introduce a referent in the discourse reflects its prominence status.

Most research focused on reference form as a means to indicate referential prominence, however, we may find other effects associated to more or less prominent referents as well. Givón (1983), for example, analyzed referential chains in an extensive corpus of English texts and concluded that thematically important referents (topical referents in his terminology) tend to be picked up more often in the discourse, being more persistent compared to less prominent referents, which show low rates of "cataphoric continuity".

Other studies analyzed the function of certain expressions at the discourse level and considered that importance or salience is mirrored by the form of reference and, simultaneously, by the next-mention probability (sometimes called predictability) and frequency of subsequent mention of a referent. Gernsbacher and Shroyer (1981), accounted for the use of indefinite *this* in English in terms of salience. They concluded that indefinite *this* introduces referents that are more probable to be mentioned next and are more prone to be picked up by means of a less elaborated type of referring expression compared to their simple indefinite counterparts.

There is a growing body of research showing that these effects that have been traditionally associated with prominent referents, may have different sources and need not always point to the same referent. Chiriacescu & von Heusinger (2010) was one of the first studies to call for a dissociation between different effects that have been classically tied to prominence or accessibility. They showed that the *pe*-marking of a direct object in Romanian (known as differential object marking) has a discoursepragmatic impact upon the referent, such that this referent will be mentioned next, however, the marking does not impact the type of referring expression used to resume this referent in the upcoming discourse. Similar findings were reported in Lindemann (2020), where I presented the continuation data from three ample sentence continuation studies that investigated the predictive potential of indefinite noun phrases in English, German and Romanian. The findings underline the necessity to dissociate between factors that impact the accessibility of a referent (e.g. subjecthood) in terms of choice of reference and factors that impact the larger discourse structure in terms of next-mention probabilities. Concretely, results show that from a production perspective, the three indefinite markers investigated (i.e. English indefinite this, German indefinite so'n and Romanian pe-marking) are indicators of the discourse structuring potential of their associated referents. The property of discourse structuring potential is understood in terms of the referential intention of the speaker to indicate to his addressee that he will elaborate upon the referents marked in this way. Furthermore, results showed that these referents are more prone to become the aboutness topics and will be picked up more often in the ensuing discourse. Interestingly, the findings revealed that these indefinite noun phrases vary with respect to the strength of their discourse structuring potential, as illustrated in Table 12.

Table 12: The discourse structuring potential of indefinite noun phrases (Lindemann2022)

	English	German	Romanian	Simple
	indefinite	indefinite	pe-marking	indefinite
	this	so'n		article
Referential persistence	medium	high/medium	high	underspecified
Topic shift	medium	high	high	underspecified

Type of first anaphoric	definite	definite NP	definite NP	definite NP
expression	NP			

Summarizing, the data showed that referents associated with Romanian *pe*-marking are more expected to shift the topic by becoming the aboutness topic in the following discourse and to be frequently mentioned. The potential of referents associated with English indefinite *this* to become the aboutness topic and to be frequently mentioned in the subsequent discourse is lower than that of the referents of *pe*-marked indefinites. Referents associated with German indefinite *so* '*n* fall in between the two indefinite noun phrases. Overall, indefinite noun phrases headed by the simple indefinite article are underspecified for referential persistence and topic shift potential. That means that their associated referents are less likely, but not excluded, from being referentially persistent and becoming the aboutness topic in the following discourse. This observation provides further evidence for the generalization that unmarked forms are less restricted in their distribution compared to marked forms (Givón 1981).

The results highlight the need to dissociate between two types of expectations that are influenced by several factors at different discourse levels. The first type of expectation pertains to the degree of accessibility associated with a particular referent and was already introduced in sections 2.1 and 2.2. A wealth of research showed that different structural factors, such as grammatical function and thematic role contribute to the choice of a particular type of referring expression in language production and comprehension and that the same factors are responsible for next-mention patterns. Another type of expectation was shown to be triggered by other discourse structuring devices, such as the three types of indefinite noun phrases presented above. These linguistic devices make forward-looking predictions, signaling which referent will occupy a preferential role over a larger discourse segment. The forward looking potential of certain referents is a property defining indefinite noun phrases, which generally lack a discourse history, but is not limited to them. In several studies we showed that *pe*-marked definite noun phrases are used as discourse structuring devices as well (e.g., Chiriacescu & von Heusinger 2009). Interestingly, the discourse structuring potential is a fine-grained feature that differentiates between several sub-types of such expressions. In other words, a referent mentioned for the first time by means of an indefinite noun phrase is more or less prone to be mentioned again in the following discourse and to shift the topic, as already discussed in relation to the three languages under scrutiny here. What is different is the formal marking employed by each language for each function and the relative weighting that languages assign to each of them. The main suggestion resulting from the presented evidence is that expectancy operates in parallel at different levels of representation.

More recent studies bring favorable evidence for the discourse structuring potential as well. For example, the study on visual salience conducted by Vogels et al. (2013) reported on similar findings. One of the aims of the investigation was to explore the way in which different factors interact with each other to determine the degree of accessibility of a referent. They explored the way in which non-linguistic visual salience interacts with linguistic salience (subjecthood). Based on the results from two experimental studies, they showed that the visual salience of a referent (represented by its foregrounding or backgrounding) impacts reference choice or next-mention probability, but not the choice of anaphoric expression that will be used for it, which is determined by grammatical function. It seems that hearers develop expectations about both: the referents more likely to be picked up in the following discourse and also about the type of referring expression that will be used to mention a referent again.

Further evidence comes from the study of Arnold (2010), who investigated the role played by thematic roles in modulating participants' next-mention biases. She found a strong preference (>80%) to continue talking about the grammatical subject by means of pronouns. Only 20% of the direct object referents were resumed by a pronoun. A less expected result was the tendency to mention the initial object referent first, which was realized as the thematic Goal, and not the grammatical subject, which was realized as the thematic Goal, and not the grammatical subject, which was realized as the thematic first highlight once more the need to dissociate between factors that impact the likelihood of subsequent first mention (e.g. being realized as the thematic Goal) and such factors that impact the likelihood of subsequent pronominalization (e.g. being realized as the grammatical subject).

In sum, the notion of discourse structuring potential (DSP) was developed to describe the contribution of different types of referring expressions, from indefinite to definite ones. It was firstly introduced in my dissertation on "The discourse structuring potential of indefinite noun phrases. Special markers in Romanian, German and English" (Chiriacescu 2014). In light of the findings of several sentence-completion and eye-tracking studies, the DSP of a referent was defined in terms of three measurable parameters, namely: (i) referential persistence, or the number of anaphoric expressions that are used to refer back to a referent, (ii) topic shift potential, or the probability to become topic, and (iii) referential explicitness, or the type of referring expression used to

pick up a referent. I showed that while these three measures usually coincide, as frequently mentioned referents tend to be continued as topics and to be mentioned again by means of reduced types of referring expressions, this does not always have to be the case (see, for example, ample discussions in Chiriacescu 2009, Chiriacescu & von Heusinger 2010, Chiriacescu 2011, Chiriacescu 2014, Lindemann 2020). I showed that this observation is particularly true for referents realized in non-prominent positions (i.e., as indefinite noun phrases vs. (weak) definite noun phrases; or as the direct/indirect object compared to the subject referent). Furthermore, these effects are particularly visible in larger discourse units, consisting of more than two adjacent sentences. In the next section, I review the Dual Processing Model put forth in Brocher, Chiriacescu & von Heusinger (2018) to account for the discourse effects of definite and indefinite noun phrases.

## 2.4. The dual processing model of reference

As discussed in section 2.3, several factors may simultaneously indicate the level of accessibility of a particular entity, thus, it is not a simple endeavor to single them out. In German, for example, the antecedent of a personal pronoun may be the grammatical subject and simultaneously the thematic Agent, the first-mentioned referent, and the aboutness topic.

Traditionally, most studies on anaphora resolution focused on personal pronouns as being associated to the most prominent referent. Less attention was directed towards those types of referring expressions that are associated to less prominent referents, such as definite or indefinite noun phrases. The general view from the literature is that all referential forms realized in one language are influenced by the same set of constraints. However, I pointed out throughout my work that different types of referring expressions show different degrees of sensitivity to different factors, sustaining the idea of a formspecific multiple-constraints approach to reference resolution. Kaiser (2003, 2010) and Kaiser and Trusewell (2004b, 2008) pointed to similar asymmetries in the resolution preferences for different types of referring expression in Finnish, Dutch, Estonian and German.

Continuing the exploration of less-prominent referents initiated in Chiriacescu (2014) and the pursue to disentangle the factors that may impact prominence in general, in Brocher, Chiriacescu & von Heusinger (2018) we proposed a model that is aimed at corroborating different prominence triggers to one relational prominence structure. In a series of experimental studies, we explored the interaction of information status (or familiarity), a noun phrase's definiteness marking, and additional pragmatic inferences with respect to the prominence status of the associated discourse referents. We focused on descriptive noun phrases and explored the way in which they introduce a new referent and equip it with a particular degree of prominence.

Compared to proper names and pronouns, descriptive noun phrases, such as definite and indefinite noun phrases (e.g. *the owner* or *a construction worker*) identify their associated referent by an interaction of the function of the article (e.g., the definite article *the* or the indefinite article, a(n)), the meaning of the descriptive material (*owner*, *construction worker*), and their link to the preceding context (e.g., *construction site*). We used definite and indefinite noun phrases (henceforth definites and indefinites, respectively) as they permit the disentanglement of concept and referent activation.

Within the framework of dynamic semantics (Heim, 1982; Kamp 1981; Karttunen, 1969), both definites and indefinites are analyzed as expressions that introduce discourse referents into a discourse. Both types of expressions denote a concept through their descriptive content and then assign a referent to that concept. Importantly, definites indicate that there is exactly one referent falling under the descriptive content of the noun phrase and that this referent can be uniquely identified. In contrast, indefinites lack a uniqueness condition, leading to a non-uniqueness implicature (Heim, 2011).

In addition to the different functions of definiteness, the descriptive material of the noun phrase has a particular information status. Prince (1981) introduced a threefold distinction between given, inferred, or brand-new referents. A referent that has a coindexed expression in the preceding discourse represents given or old information. A referent that can be identified based on an inference relation between the antecedent and anaphor is inferred (e.g., the anchor *construction site* activates the concept *worker*). Finally, when a referent cannot be traced back to a previously introduced referent or anchor, it represents brand-new information. In Borcher et al. (2018) we tested the impact upon referential processing of inferred and brand-new referents realized as definite and indefinite noun phrases.

The notions of concept and referent activation have been largely neglected in the empirical literature and almost no work was dedicated to disentangle the two (Arnold, & MacDonald, 1999; Burkhardt, 2006, represent few exceptions). This is even more surprising in light of the fact that explicit accounts were formulated in the theoretical literature (e.g., Elbourne, 2013; Hawkins, 1978; Lyons 1999; Prince, 1981).

In our **first experiment**, using visual world eye tracking, we created stories as illustrated in (17). Each story consisted of three sentences: (i) a context sentence that contained the anchor (i.e., the construction site), (ii) a second sentence introducing two human referents, the subject and object (i.e., *Philip* vs. *a/the principal* and *a/the pedestrian*), and (iii) a third sentence that included a pronoun (i.e. *he*, which could be resumed back to either the subject or object referent).

(i) The construction site at the neighbor's was loud and dusty.				
(ii) Philip stared at	(a) the principal at the fence. [def/inferred]			
	(b) a principal at the fence	[indef/inferred]		
	(c) the pedestrian at the fence.	[def/brand-new]		
	(d) a pedestrian at the fence.	[indef/brand-new]		
(iii) When the dust dispensed, he stepped back and rubbed his eyes.				

(17) Sample experimental item translated from German from Brocher et al. (2018)

Crucially, the critical items were constructed in such a way that the subject (i.e. *Philip*) and the direct object (the critical item in (a-d) in 17(ii)) could be both resumed by means of the pronoun introduced in the third sentence in (17(iii)). The probability of being resolved towards the initial direct object was taken as a measure of the prominence status associated to that referent relative to the prominence of the initial subject. A crucial manipulation was made in terms of information status (i.e., inferred in 17 (a) and (b) vs. brand-new in 17 (c) and (d)) and definiteness marking (i.e., definite in 17 (a) and (c), vs. indefinite in 17 (b) and (d)), which resulted in 4 conditions. The critical items were presented over headphones. During story presentation, participants looked at a computer screen showing a picture of the referent in subject position, a picture of the referent in object position, and a look-away picture, as illustrated in Figure 3.



Figure 3. Visual display from the eye tracking experiment. The referent associated to the subject (i.e., *Philipp*) was on the right of the screen, the referent associated to the object (i.e., *principal/ pedestrian*) was positioned to the left of the screen and the look-away object (i.e., *the dust*) was presented at the top of the screen.

**Participants**: 40 monolingual native speakers of German, with self-reported normal or corrected-to-normal vision, took part in the experiment

**Materials and procedure.** We used 24 critical items containing three-sentence stories, as in (17), in which we manipulated the realization of the direct object introduced in the second sentence in terms of information status and definiteness, which resulted in 4 conditions: [def/inferred], [indef/inferred], [def/brand-new], [indef/brand-new]. An additional set of 48 filler stories were used. The items were distributed across 4 lists. At the beginning of each trial, the visual scene appeared onscreen and after 500 ms, the auditory presentation of the items began. After each story, participants were asked to answer a yes/no comprehension question. As we were interested in the prominence of the object referents, we measured the direction of the looks of the participants staring at the pronoun. The general prediction was that the more prominent a referent is, the more looks will fall on the picture showing that referent.

**Results** showed the following patterns: the picture of the object was fixated most when the concept of the associated referent (i) could be inferred from preceding context and (ii) was expressed by a definite marked noun phrase (cf. (16 (iia))). For referents associated with brand-new concepts, no differences in prominence were found (cf. (16 (iic-d))). In other words, definiteness marking did not affect a referent's degree of prominence when the associated noun phrase was brand-new. Finally, and most surprisingly, referents associated to inferred indefinite noun phrases (cf. 16 (iib)) were least accessible at pronoun encounter for online effects of information status and definiteness marking at the descriptive noun phrase.

In our **second experiment**, we explored a referent's topic shift potential and its persistence in the ensuing discourse (see Chiriacescu & von Heusinger, 2010) by using the first two sentences of the materials from Experiment 1 (cf. 16 (i-ii)). We asked 101 native speakers of German to continue the two target sentences by producing five additional sentences.

The findings revealed several patterns. First, referents associated with inferred definite noun phrases were mentioned again least often. This effect could be observed early on in participants' continuations. Moreover, these referents were also least prone to become the topic in the continuations. Second, the referents associated with the inferred indefinites, brand-new indefinites, and brand-new definites, were mentioned again and represented topics roughly equally often.

The strong contrast in terms of prominence between definite and indefinite inferred noun phrases can be explained based on the theoretic assumption that definites come with a uniqueness condition, while indefinites come with a domain restriction and only express existence.

We accounted for the results within a Dual-Process Activation Model, which accommodates different prominence cues, such as information status, definiteness marking and pragmatic inferences into one relational prominence status. More specifically, we proposed that the choice to mention a referent next and its use as an aboutness topic is guided by two general discourse planning principles, namely the Discourse Saturation Principle and Topic Saturation Principle of discourse planning. We suggest that the rate with which a referent is mentioned again correlates negatively with its overall prominence, based on an assessment of expectedness. Specifically, the more expected a referent is when it is firstly introduced, the less noteworthy it is and, thus, the need to remention it drops, such that it will be picked up less often in the discourse. On the contrary, the less expected a referent is, the more noteworthy it is, as its introduction calls for a proper justification and, thus, it is more prone to be subsequentially mentioned. The notion of expectation is of relevance for both the production and the comprehension results. The general idea is that whenever a speaker is presented a discourse (fragment) he assesses how expected the referents are, by evaluating their noteworthiness. When producing text, the speaker addresses the noteworthiness of the referents by justifying the introduction of the less expected referents by elaborating more on them than on the expected referents, that do not come with this requirement.

The Discourse Saturation and Topic Saturation Principle generalize previous observations on indefinite noun phrases (Christophersen, 1939; Du Bois, 1980; Kamp, 2015;) and are independent of activation-driven accounts (Brennan et al., 1987; Gordon et al., 1993). The general results point to a complex interaction between the two parameters, information status and uniqueness status and the modulation of this interaction by the type of processing (i.e., discourse comprehension vs. discourse planning).

This part of the results corroborates with observations made in Chiriacescu & von Heusinger (2010) and Lindemann (2020) with respect to speaker choice and listener choice and it also raises questions about the different types of expectations in discourse.

## B(i)-3 Teaching and Learning in Higher Education

Another area of keen interest for me is higher education teaching and learning. In addition to earing a certificate in teaching and learning for higher education from the University of Cologne in 2018, I redesigned and implemented a novel introductory course at the same institution, incorporating innovative teaching and evaluation methods. This section details this educational endeavor, which was later published as a book by Thelem Verlag in 2020.

## 3.1. Background

Historical considerations in the domain of didactics at universities concerning alternative learning and teaching methods gain another dimension in light of the rapid digitalization and the pandemics. Universities are demanded to adapt and change on their different institutional levels, such as teaching and learning, research and administration. While traditional monologic teaching and learning techniques dominated the near past, new methods emerge and establish themselves, such as: team- or project-based work and presentations, simulations, role plays, tutorials. Constructivist didactics methods are integrated and applied to a greater extend during class, as it becomes evident from course program descriptions and recent publications (e.g., Reich 1998, Schulmeister 1997).

The continuous offer of multimodal tools opens up new directions for the design of the learning process in schools and further education institutions. By adopting the new media, new chances for teachers emerge, as they can stimulate the curiosity of their students by transmitting up-to-date, problem-based and complex knowledge. Both cognitive and emotional skills of learners are addressed throughout this process. Moreover, by integrating new multi-media methods in their classes, educators benefit from a reduction of the in-classroom phases. Learners also benefit from the fact that they can internalize the contents in a flexible, autonomous and self-paced rhythm.

Despite all the benefits of the modern information and communication technologies, institutions seem to be resistant in embracing these innovative forms of teaching and learning within their settings. The results of a study exploring the implementation of online-methods in over a thousand higher education teaching projects revealed that the primary function of the new technological forms used was researching for material (Lewin and Heublein 1996). Similar results were obtained in a Bertelsmann-Nixdorf-Stiftung (1997) study, which showed that most of the one hundred fifty-two

teaching projects that were under investigation, only used online teaching materials. The findings of this study reveal the fact that many university professors simply upload their teaching materials for their courses, seminars and tutorials online, without any adaptation to didactic and methodological planning of the contents to the new technologies.

As noted by Harasim, Hiltz, Teles und Turoff (1997: 25), in may educational settings, less adequate (digital) methods are used: "Computer mediated communication can be used for the transmission of lengthy lecture-type material, but because reading, screen after screen of material, with no opportunity to respond, is difficult and boring, this form of communication is better accomplished by textbooks or printed materials". Schulmeister (1997) considers that there is still a long way to achieving the optimal combination of online and face-to-face learning. In their work on virtual learning, Hiltz and Turoff (1987) foresaw that it is going to take a long time until the internet will accelerate and enrich the traditional learning and teaching processes.

At the latest since the Bologna Declaration of 1999, the expectation deriving from digitalization is that teaching, research and administration will become more efficient, professional and more qualitative. Staring from this premise, the target and performance agreement of German public universities and the Federal Ministry of Education and Research for the years 2019-2021, included the consolidation of the digitization of teaching. Accordingly to this view, each university is expected to develop a digitization strategy and to deliver concrete descriptions of the measures undertaken towards a digital transformation. One of the measures that could be adopted at the level of university could pertain to the implementation of new teaching and learning methods and the technical development of the infrastructure that would derive from it.

To live up to these expectations and agreements, many universities have invested enormous amounts of money in digital teaching and learning materials for Learning Management Systems. Additionally, many public universities established central scientific institutions dedicated to the development, security and improvement of teaching. Such support centers advise teachers on how to conceptualize and implement innovative e-learning scenarios in their courses. The computing centers of the universities are central institutions as well, that offer support for the different IT-domains of the university, for example the handling of the e-learning platform of the university (i.e. with the content-management and communication system). Such service centers offer trainings and technical support for new e-learning projects at the university.

During my employment as a full-time researcher and lecturer at the Institut für Deutsche Sprache und Literatur I, the Universität zu Köln was ready to embrace the opportunities offered by digitization on all institutional levels. The Universität zu Köln is one of the oldest universities in Europe and is one of the largest German universities, with more than 48.000 enrolled students in 2017/2018. This university is also a comprehensive university and is divided into 6 faculties, namely: the Faculty of Arts and Humanities, the Faculty of Mathematics and Natural Sciences, the Faculty of Human Sciences, the Faculty of Law, the Faculty of Medicine and the Faculty of Management, Economics and Social Sciences.

The Faculty of Arts and Humanities was (re-)established in 1920 and is the largest faculty of the University of Cologne, counting more than 13.000 enrolled students. It is one of the largest teaching and researching humanities institutions in Europe. The faculty is composed of eight subject groups, which are further divided into different departments and institutes. The third subject group, German language and literature ("Deutsche Sprache und Literatur"), is made up of two institutes: German Language and Literature I and German Language and Literature II. While the second institute is dedicated to the basic education in language, including didactics, special needs education, didactics of language and literature, the first institute is dedicated to linguistics, old language and literature, literature and teaching methodology. As I was employed at the first institute, I contributed to the development of an innovative learning and teaching concept within the German linguistics department. I was very much interested in this new approach to teaching and learning, which I described in more detail in the book "Implementierung von Blended Leaning-Methoden in der Lehre", which was published in 2020 with Thelem publishing house.

The new teaching and learning project was concerned with the university teaching conditions at the Faculty of Arts and Humanities, which are characterized by large student groups and vast course contents to cover. Such circumstances lead to the fact that assessing the individual knowledge level of students is difficult or impossible to obtain. At the heart of the conducted project was the implementation of supporting blended learning-methods alongside traditional face-to-face teaching. Another goal of the project was to adapt to the students' various knowledge levels and learning pace and to offer them new access methods to the scientific disciplines. An important component in this respect is the knowledge of learning and teaching processes and the collegial exchange about the learning process. Additionally, the project aimed at empowering students at the

beginning of their studies to function well in stressful and high-pressure situations during their studies and their future average working days. The advantages of combining traditional teaching sessions with online phases are multiple, such as:

- Students are given the opportunity to self-organize in terms of time and space;
- Communication and collaboration between students and teachers are enhanced and supported;
- Students are supported in their individual learning phases to actively and intensely engage with learning materials and contents;
- Individual learning styles and speeds are taken into account;
- Teaching materials can be effectively and quickly updated;
- Control of successful learning results and immediate feedback sessions are ensured;
- After the first implementation of the learning and teaching platform, the technically laboriously realized teaching and learning scenarios can be reutilized in later semesters with less effort;
- Learning with all senses is sometimes more attractive to the students and contributes to the retention of the information in the long-term memory (e.g., courses recordings in audio or video format, simulations, educational games);
- E-learning on mobile platforms enables students to expand their knowledge on a particular subject anytime and from anywhere;
- Quick availability of comprehensive knowledge pools (course materials, literature, graphics, databases, lectures, study information, etc. HRK 1996);
- Telecooperation (two or more partners working simultaneously or timely displaced at a particular task, HRK 1996);
- Computer-assisted learning environment (interactive teaching and learning programs, intelligent tutorials, HRK 1996).

## **3.2.** The introductory course

The book reported on a two-year long project on the implementation of blended learningmethods in the teaching process of a novel course on introduction to linguistics, which integrated both digital and analogous teaching and learning methods. This was the first time that an introductory course at the German language and literature department combined presence and online teaching. For the implementation of the new project, we used blended learning as a form of e-learning. Both the lecturers and the students were supported by ILIAS, which offers a combination of traditional teaching and digital learning. This system facilitates the distribution of course material and computer-based revisions of online exercises and examination exercises in the designated computer rooms of the Faculty of Arts and Humanities. A goal of the project was to connect the flexibility and efficiency of digital learning methods with the advantages of direct communication and socialization.

The module "Introduction in German linguistics" is an obligatory subject for students studying German for high school teaching. The course is an obligatory component of the discipline and it offers a well-grounded introduction to the major linguistics subfields and the research methods used in this domain. All other linguistics courses throughout the studies are built upon the knowledge acquired within this course. Ideally, students should be able to decide after taking this course, whether they want to specialize in linguistics, or follow another path (e.g., attending more literature classes). There are no prior informational requirements to attend this course. The course is very intensive (4 teaching hours/ week) and is accompanied by an optional 2 hours tutorial spread out over 28 sessions. The maximal number of participants is limited to 45 students per course. At the end of the semester, the examination form is a written exam, which can be organized in two sessions, a mid-term exam and an end-of-the-semester exam.

Nationwide, each German institute may decide on its own, which contents the linguistics introductory course will cover and which teaching form will be chosen for this purpose. While at some universities this course is designed as a course with an accompanying tutorial (e.g., the German linguistics introductory course at the University of Stuttgart), other institutes opt for a course, a seminar and an additional facultative tutorial to cover the contents of the introductory course. This report focuses on the teaching and learning methods used throughout this seminar. For more information concerning the contents and other relevant details of the seminar, see Lindemann (2020a).

In 2012, when the blended learning project started, but also in the years that followed, many students enrolled in the course, such that the institute of German language and literature I offered 10 "Introduction to linguistics" seminars per semester. Each colleague was teaching the introductory class at least once per year, per rotation. Starting from these premises, we decided, in a group of three staff members, to design the course

as exciting and as efficient as possible, so as we and our students would benefit most from this new course design. The idea of implementing an innovative course format for the introductory class was born within this small group. Another superordinate and long-term goal was to obtain a unitary knowledge level across the students attending the introductory classes. Additionally, we intended to offer students different approaches to the scientific subjects and to take into account different knowledge levels. Students should also receive individual feedback with respect to the acquired knowledge and the expected results from the educator, several times within the semester. All these requirements should be fulfilled keeping the educators' efforts within a decent limit. Another developmental chance within the team project was the close teamwork of several educators and tutors. All seminar related decisions were taken within the team, for example the fact that each teacher was responsible for his/her seminar content, while the exercises for the exams and the seminars were developed together and uploaded on the learning management platform ILIAS. In its initial phase, which lasted for one semester, the project was assisted by the teaching and learning center of the University of Cologne, represented by two advisers. They attended the team meetings twice a month, conducted individual teaching counseling on different themes and observed several classes.

According to our teaching experience, but also during the discussions with the advisors, it soon became clear that the planning of a new course design should start with developing a strategic master plan. Equally important were the foregoing considerations with respect to the course's goal, the teaching and learning methods that will be employed throughout the course, the exams and the final evaluation and the supervision of the course. Even before beginning the actual planning, we organized a meeting at which all colleagues and tutors teaching the introductory course (n>20) were invited to report on their experience and best practices.

In the initial phase of the project, we determined the teaching and learning goals and the general setup of the course. In a next step, we chose the learning management system we would use throughout the semester. In this phase, we recruited the teaching assistants and discussed with them their tasks, while they received formal training on the learning management system ILIAS. Prior to the beginning of the semester, we organized sessions of online exercises and tests with a group of ten students, to recognize potential errors and technical problems with the learning management system and with the online exercises. Finally, we discussed and started developing the teaching materials (slides, handouts, instructions, manuals, exercises, etc.). We defined several steps of the planning and development process: defining the background, premises and formal requirements of the seminar, written capturing of the learning goals, the selection of the contents, the appropriate teaching and examination methods, the preparation of the course plan, the planning of each session and the evaluations of the course. The elaborate design of the novel introduction to linguistics course corresponds to the didactics model termed "didactic alignment", which transparently presents to the students the learning outcomes of the seminar on the module level and the examination forms.

#### 3.3. Implementation of the blended learning project

Overall, several aspects of the implemented teaching and learning project were a real success. First of all, we succeeded in making the learning process meaningful for each student, through the integration of online exercises after each major theme, the presentation of own exercises and experiences with language. Additionally, achieving the proposed goals was tested through tests, learning verifications and discussions during the course. The immediate evaluation of the results of the online exercises showed that the students made constant progress. The learning progress during the semester could be assessed based on the students' argumentation, the language examples they presented during the course and the results obtained at the exams. The difficulty level of the exercises was adjusted after taking into consideration the results of the test. The online exercises, which were organized as tests after each major theme, presented the advantage of being accessible at any time throughout the semester, with the correct answers and further comments, such that self-directed learning was possible. Content wise, the students experienced a constant learning gain, which was reflected in their final grades (the grade point average increased from mid-term to final examination) and their evaluations.

Blended learning and teaching formats, in which the new media play a central role, contribute to the training and improvement of their media literacy. While students displayed a certain amount of respect and insecurity in handling the ILAS platform, they were quite confident at the end of the semester. The confidence of the students with technology, the question types and the course material were high by the end of the semester.

The results of the evaluations speak for maintaining this blended teaching and learning format. Moreover, when comparing the evaluation results of those educators who employed multimedia strategies to those that adopt only one teaching method, we observe that the first obtain more positive evaluations compared to the latter.

At the emotional level, students experienced a learning gain as well throughout the course. Students handled the literature and technology more confidently and managed challenges more effectively, learned to make their point by relying on own examples and relevant information. They also found it interesting and fun to look for language phenomena and examples in their everyday life and foreign languages. I could furthermore observe that teamwork and solving the online exercises in small groups contributed to the development of closer friendships among students. This observation was confirmed by the discussion with the students at the end of the semester. The openness and willingness to engage with language will contribute to the students' interest to enroll in further linguistics courses.

The use of different teaching and learning methods and the digitalization of several steps in the planning and implementation of the course contributed to a broader diversity. The combination of online and traditional, face-to-face, sessions led to more effective results. These observations become particularly visible when comparing blended learning projects like the one presented here with seminars and courses in which only traditional methods were used. The flexibility in terms of time and place of the online sessions contributed to a constant and reliable communication within the group of students. Most students were in their first semester of studies and felt empowered, encouraged and well assisted through the intensive support by the team of educators.

The effort of monitoring and assisting the *Online Learning Community* was manageable, as the student cohort did not exceed fifty students. It took approximately six hours per week to offer them support and assist them. The success of adopting an Online Learning Community was measured by means of several criteria, which will be outlined in the following. Considering the activity of the students within the community, it was important to determine, how many students had joined it, how many of them joined the discussion forums on a monthly basis and how many of them contributed to the discussions through uploading of new material, raising questions, etc. The results showed that the value is around 20%. A total of 33 questions related to the content were raised and discussed throughout the seminar. The fact that students communicated through this platform and answered their peers' questions unburdened the educators.

Moreover, it was important to find out whether the students were satisfied with the implementation of the Online Learning Community. The results of the evaluation showed that the community was considered as being very useful. We also determined that the assistance and monitoring of the Online Learning Community generated low costs as well.

Overall, learning and solving exercises from the comfort of ones' home was considered advantageous. The fact that students decided where and when to learn had a positive impact on their learning outcomes.

It was clear from the very beginning that the implementation of the project will bring along several challenges on technical and interpersonal level. First, the diversity of methods and media used requires different pedagogic and didactic planning. Reading of online materials is different than reading a book in paper format and in order to fully benefit from virtual learning, experience with handling this format is required. Media literacy is important both on the side of the teacher and the learner. The professional design of e-learning offers is challenging at fist and requires divers know how in the technical and didactic domains. The educators are also stimulated to choose from the multitude of technological possibilities a didactic concept that suits the course content, the students and the particular context. This innovative process is more often than not driven by the technology, as courses have to be contiguously adapted to new technological possibilities.

Acquiring new hardware and software is a simple step, compared to the effort of the integration of a new technology into a course and to the adaptation of the course contents according to this technology. In close connection to this effort is the expenditure of time required for the planning and execution of such a project. The time spent for the preparation of the course material, the development of the question pools, the implementation of the questions and evaluations in the learning platform ILIAS was very high. The team involved in developing this course had to prepare the regular teaching activities, and besides that, had to cooperate on a long-term basis, had to take part in weekly meetings with the colleagues, the ILIAS team and with the teaching and learning division of the university, in order to develop the materials for the course and exercises.

A wrong assumption was that moving the exercises to online would require a reduced amount of work. The load of time necessary for planning and implementing was much higher, as the multimedia contents had to be prepared from scratch. Simultaneously, educators needed to familiarize themselves with new programs and systems. However,

taking into consideration that the new blended learning concept was developed with the long-term goal in mind to serve other colleagues when teaching the introduction to linguistics class, by freely using the question pools, exercises and tests in ILIAS, the working load was justified.

A general expectation related to the integration of technology in the teaching process refers to the fact that contents will be prepared for a targeted audience and that the high affinity of the students towards the new media and digital contents will be made use of through this process. The fact that the integration of new technologies requires different demands from the students and teacher is often neglected. The competent handling of digital techniques is required on both sides. A possibly high user-friendliness and the support from the central departments of the university is helpful, however, the users have to work the applications of each digital offer out and have to bring some basic competencies in the digital domain along.

Another challenge was the technical development of different question types on the learning platform ILIAS. The pool of questions comprised five different question types, which have to be further developed in the near future. Another time-consuming activity was the training of the student assistants, who managed to handle the question pool and design new questions on their own only by the end of the semester. The plan was to always have a student assistant at the German linguistics department who is an expert in designing questions in ILIAS and who constantly attends ILIAS tutorials to improve and update her knowledge. The IT department organizes tutorials and workshop every semester for university teachers and student assistants.

To conclude, so that the implementation of an innovative project succeeds longterm, all persons involved have to be prepared to engage in constantly updating their skills with respect to handling the learning platform. Equally important is (accepting) the support from the IT department of the university.

The informal character of Online Learning Communities opens up tremendous chances for the initiation of learning processes. A challenge of such communities is their maintenance, as they rely on the students' self-directed learning. The implementation of the blended learning project teaches us that it can be advisable to engage a student with the supervision of such a community. The student would support the students with respect to the organization and even the content.

## **3.4.** Conclusions

The rapid digitalization of the society shows that the implementation of the new media should be understood as a constant mission at universities as well. The technology is used to animate students for activity-based learning. One important aspect is that the students understand how the technical part of the seminar functions and how it is related and contributed to the learning outcomes. Oftentimes we assume that the younger generations are born with a natural aptitude for the digital and meanwhile adolescents are called "digital natives" (Barlow 1996) and they are considered the "internet generation". Nevertheless, that does not mean that they intuitively know how they can decipher new content by means of the new technology. They need guidance in this respect as well. To this end, universities and colleges should offer personal, technical and didactic support, as pointed out during the conference of the Ministry of Culture and Education, which is an assembly of the ministers of education of German states, in 2019. The states and the federal government now have to provide the necessary frame conditions for the goal-oriented digitalization (Conclusions formulated in March 2019).

Digitalizing teaching can occur only in a proper setting, as a combination of new technologies and adapted didactic methods. The main goal of a course should continue to be thoroughly prepared materials. The used methods and media have to be reconsidered and adapted to the changed reality. Generally, all contents should build upon one another and contribute to the learning goals defined at the beginning of the semester. A central in this process comes up to the university didactic, which has to develop research and practically oriented offers for the digital design of the teaching (resolution of the conference of the Minister of Culture and Education in 2019: 5).

The development of digital learning units and their integration in face-to-face learning scenarios firstly represents a time-consuming endeavor, which represents a tremendous starting hurdle into the world of digital teaching. Educators and pedagogues are confronted with the challenge to develop self-learning materials, which they then have to implement into the curriculum.

After its first implementation, the blended learning-project described in this section was run at least once a year, usually in the winter term. Many other colleagues from the German linguistics department adopted this concept for their courses as well, as they were convinced by the efficacy and additional values of the digital teaching and learning concept. The colleagues used the meanwhile extended question pools and online tests on uploaded on the ILIAS platform and the trained students assisted them in the implementation of the new concept. In sum, the new blended learning-format of the introductory course represents a sustainable course design, which will be used and further improved in the next years. The investment of time and energy in the project is particularly justified over the long term.

The long-term advantages are divers. The role of the educator is fundamentally changing, as they are no broadcasters of knowledge anymore and do not have to convey all the knowledge students need. Rather, they become mediators of the learning process, coaches for the interested students, and, finally, curators of comprehensive, thoroughly prepared and online available content. Ideally, they become the ambassadors of the change and will motivate their peers to take part in the process.

Digitalization will mean for students that they will learn new digital formats and that they will need to develop a basic understanding for technology, even for language students. The preparation for the exams will be more sustainable, as there will be no time and place constraints in this respect. By the opportunities opened by the digital methods, students will have new domains of applications for the knowledge acquired through the studies and thus new working domains.

In sum, the following aspects are important such that the university education achieves its aims: (i) a proper infrastructure for the development and assistance of innovative leaning and teaching projects. The universities have to establish service and support structures (e.g., at least a university didactics center and an e-learning center), which are indispensable for sustainable, high-quality teaching. Without such centers, adopting new and innovative teaching and learning projects will remain the exception. Moreover, cross-disciplinal and location independent networks are important such that the exchange of ideas and best practices between educators using innovative methods is enabled. The university administration should favor and support such blended learning models. Furthermore, (ii) digital methods have to be made available, and (iii) digital examination and evaluation methods have to be formally approved and technically integrated in the learning platform used. By adopting the needed measures and procedures universities position themselves as modern and innovative educational institutions, with effective financial expenditures that will also contribute to cost savings in the long run.

#### B(ii) Career evolution and development plans

This chapter serves as an overview of my career progression and a glimpse into my future development objectives. The first sections delineated my academic background and professional experience, which have led to accomplishments outlined later in this section. Moreover, I summarize the teaching and supervisory responsibilities I undertook at the Universities of Stuttgart, Köln, and Braşov. Additionally, I touch upon other professional activities, such as publication and project reviews, that have contributed to my professional growth. The concluding section of this chapter outlies my career development plans, encompassing teaching and research initiatives for the forthcoming five to seven years.

## B(ii)-1 Career evolution: from the beginnings up to now

This section is dedicated to the milestones of my academic formation and professional experience, summarizing the most important achievements. This section furthermore highlights the teaching and supervising activities I have conducted at the Universities of Stuttgart, Köln and Braşov. Other activities that contributed to my professional experience are mentioned in this section as well.

## B (ii) 1.1. Academic Formation

My academic journey began in Romania and progressed through Germany and the USA. Below, I outline the most significant stages of development, presented in chronological order.

After graduating from a German high-school, I attended the "Lucian Blaga" University in Sibiu, Romania, where I studied "Applied Modern Languages" (Limbi moderne applicate), with a focus on German and English. I found the first Diploma program appealing because it offered a comprehensive curriculum that encompassed theoretical aspects of language and literature as well as practical lectures in translation, international relations, and communication.

During this first study in Sibiu, my interest in the theoretical side of language and literature grew. As a consequence, I decided to study German and English language and literature at the University of Stuttgart, Germany during 2002-2007. The Magister degree program was divided into three pillars, namely: literature, linguistics and medieval studies. Modern literature explored the literature and its history from the early modern

period to the present day. The study of linguistics encompassed all major linguistic areas, such as phonetics, phonology, morphology, syntax, semantics, pragmatics, language acquisition and change and language typology. Areas of special linguistic focus at the University of Stuttgart were morpho-syntax (offered by the English department) and semantics and pragmatics (offered by the German department). The study of German medieval studies focused on the beginnings of German literature in the Middle Ages, as well as in the early modern period (from 800 to 1600). The Magister program allowed students to specialize throughout their study in two out of the three core disciplines mentioned above. My main interests were linguistics and literature, and I chose to write my thesis in German linguistics. In July 2007 I graduated from the second university program (German: Magister Artium<sup>7</sup> with the thesis "Pe-Markierung und Diskursprominenz im Rumänischen" ('Pe-marking and discourse prominence in Romanian'). The thesis represented an ambitious endeavor, as it was the first linguistic study to explore the evolution of the phenomenon of differential object marking in Romanian. After the laborious manual annotation of an extensive corpus of written short stories, I analyzed the referential and discourse properties of all direct object arguments in these texts. The general findings revealed that the diachronic development of differential object marking started from elements high on the definiteness scale and spread continuously to elements low on this scale, whereas each development stage is facilitated by fine-grained semantic distinctions, which act as triggering cues.

The linguistic knowledge and results obtained up to that point, paired with the offer to continue my research in linguistics, encouraged me to accept the proposal to start a doctoral program in linguistics within the German department at the University of Stuttgart at the beginning of 2008. The individual doctorate program (German: "Individualpromotion") I pursued, offered great flexibility and specialization in determining my own topic of the dissertation and research interests. The successful finalization of such a full-time program heavily relied on the good collaboration between the advisors and myself and the integration of my research into the discipline, the close contact with other scholars, researchers and doctoral students within the institute and the faculty. During the doctorate program, each doctoral candidate spends the majority of

<sup>&</sup>lt;sup>7</sup> The "Magister Artium" degree is used for an advanced degree below the doctorate, which requires 4-5 years of study. Magisters are mainly awarded in the humanities and social sciences, while Diplomas are more common in natural sciences and engineering. Since the Bologna process, Magisters and Diplomas have been phased out by Bachelor and Master degrees in many countries, including Germany.

time conducting his or her research, but was simultaneously required to take an active part in the life and culture of the institute. Accordingly, regular attendance to the colloquia, courses and seminars organized for or by the institutes' scholars was mandatory, as well as presenting my own research at specialized training events, conferences, and collaborative events with national or international research partners.

I completed my doctoral program in July 2011 with a doctoral dissertation on: "The discourse structuring potential of indefinite noun phrases. Special markers in English, German and Romanian". The book was published in 2014 at the University of Stuttgart publishing house and it focused on three types of indefinite noun phrases, to deepen our understanding of the nature of the form-function mapping during the referential process. Concretely, I investigated the way in which formal linguistic elements (i.e. different markers of indefiniteness) give rise to expectations pertaining to the ensuing discourse. The centerpieces of this work were indefinite noun phrases headed by indefinite *this* in English, indefinite so 'n in German and pe in Romanian. The picture that emerged is that these indefinite noun phrases share common features at the sematic and discourse-pragmatic level that set them apart from simple indefinite noun phrases preceded by a(n). This was among the few investigations in the literature on indefinites that looked at larger discourse units (i.e., more than two adjacent sentences) in which such indefinite noun phrases occurred. The findings highlighted that, compared to their simple indefinite correlates, referents associated with these marked indefinites are more prone to: (i) be referentially more continuous in the subsequent discourse and to (ii) contribute to a topic shift, functioning as discourse structuring devices. Their main discourse function is to establish coherence at a more global level, by pre-activating particular referents. The pre-activating function is a signal to the hearer that the referent introduced in this way will be mentioned next and will eventually become a topical referent.

Prior to finishing the doctoral program, I spent almost half a year (01/2011-06/2011) as a visiting scholar at the linguistics department of the University of Southern California in Los Angeles, USA. Throughout that period, I collaborated closely with globally recognized (psycho)linguists on shared research interests and benefited from advanced classes in psycholinguistics and experimental linguistics. The domain of psycholinguistics is a relatively new interdisciplinary field, that explores the way in which humans acquire, use and represent language. Some of the main research interests of the psycholinguistics faculty were language processing in adults and first and second language acquisition, which they investigate with both behavioral and computational modelling methods. My dissertation thesis directly benefited from the insights gained throughout my stay at USC.

In sum, the doctoral program was a fruitful and research-intensive experience, contributing to extending my knowledge and expertise in my profession, especially in domains such as semantics, pragmatics, psycholinguistics and quantitative and qualitative research methods. At the same time, my involvement in a sizable research team at the University of Stuttgart underscored the significance of collaborative research and teaching for me. Additionally, the highly international environment of the German Linguistics Institute was another integral aspect of academic life there.

As I have always been interested in the way lecturers can create a positive, supportive and inclusive learning environment for their students through the application of different techniques and technologies, I visited, already during my doctoral study years at the University of Stuttgart, different courses on classroom management and lesson planning for higher education teachers. Finally, during my employment years at the University of Cologne, Germany, I enrolled in a certificate program called Higher Education Teaching Certificate (ger.: "Professionelle Lehrkompetenz für die Hochschule") organized by the Faculty of Humanities. I obtained the certificate in 2018, after attending 240 work units, which were acquired within workshops, cooperative job sharing and innovative teaching projects.

During my doctoral studies and beyond, I held positions as a researcher and lecturer (ger. "wissenschaftliche Mitarbeiterin") at the Universities of Stuttgart and Köln. Since October 2015, I have been employed at the Transilvania University of Braşov. Further details regarding my professional experience are outlined below.

#### B(ii) 1.2. Professional Experience

My professional journey commenced in Romania and was consolidated during the fourteen years spent abroad at the Universities of Stuttgart and Cologne, Germany.

My professional experience began at the University Transilvania of Braşov, Romania, where I was employed as a full-time junior lecturer ("preparator universitar"). During that time, I was a member of the Department of Foreign Languages at the Faculty of Letters and was teaching German as a foreign language and German for specific purposes to students from various faculties of the university. My professional experience abroad started at the same time as my doctoral studies did, in 2008, when I was employed as a "wissenschaftliche Mitarbeiterin"<sup>8</sup> at the University of Stuttgart, Germany, at the Institute of German linguistics. Between 2008-2011, I was a full-time researcher within two research projects, namely: "Case and referential context" and "Discourse particles", within the Collaborative Research Centre "Incremental Specification in Context" (CRC 732). The Collaborative Research Centre was funded from 2006 to 2018 by the German National Science Foundation (DFG). The infrastructure project together with the integrated graduate school united more than 50 researchers from the Institute of Natural Language Processing and the Institutes of Linguistics at the University of Stuttgart, Germany, comprising a total of 29 projects. The research was dedicated to different areas of theoretical linguistics, to language-technological models and methodologies and used various resources, such as speech and text corpora and computational analysis tools.

Project C2, Case and referential context, was concerned with the investigation of the referential context for Differential Object Marking (DOM), a linguistic phenomenon found in many languages. The project developed a semantic model to account for DOM in Spanish, Romanian, Turkish, Mongolian and Uzbek. My main task within this project was to investigate the semantic and discourse-pragmatic factors that contribute to DOM in nowadays Romanian, compared to other languages.

The second project, C4, Discourse particles, examined those discourse properties that control the interpretation of discourse particles. While the analysis was mainly focused on German particles, it was extended to other languages as well, such as Dutch, Hungarian, English, Romanian, Bulgarian and Russian. Within this project I contributed to the analysis of the distribution and interpretation of discourse particles in the so-called "Nacherstposition" in German and investigated the discourse-pragmatic uses of German *so'n*.

Apart from the aforementioned research activities, I taught one course per semester and was involved in many other activities at the Institute of German linguistics of the University of Stuttgart, as for example: conference and workshop organization and participation, attendance to weekly meetings and lectures.

<sup>&</sup>lt;sup>8</sup> A "wissenschaftlicher Mitarbeiter" or research fellow is an academic position at a German university or institute. His/her duties include teaching and research activities.

After finishing my doctoral studies, I was offered another full-time position at the University of Cologne (Universität zu Köln), Faculty of Arts and Humanities (Philosophische Fakultät), Institut für Deutsche Sprache und Literatur I, Lingusitics, where I was employed between April 2012 and September 2015 as a "wissenschaftliche Mitarbeiterin". The Faculty of Arts and Humanities was (re-) established in 1920 and it is the largest Faculty of the University of Cologne, with more than 13.000 enrolled graduate and undergraduate students. The faculty is one the largest teaching and research institutions in Europe and it encompasses the largest German Language and Literature Department in Germany.

The working environment at the University of Cologne was outstanding, as the institution was awarded the title of "Excellence University" between 2012 and 2019 by the German Council of Science and Humanities and the German Research Foundation. This title promoted the university in the Ivy League of German public institutions, by sustaining cutting-edge research and generating outstanding conditions for young scholars.

My responsibilities at the University of Cologne comprised teaching, research and administrative activities. The position included the obligation to teach 4 hours per week to (under)graduate students in the German linguistics department. I also supervised B.A. theses in linguistics and pedagogy at the University of Cologne.

Apart from teaching, I also focused on research, participating in (inter-)national conferences and workshops as a speaker and publishing papers. During 2013 and 2014 and 2015 and 2016 I was the principal investigator of two research projects financed by the Faculty of Arts and Humanities, namely "Referential expressions in discourse" and "From local to global discourse structure".

The administrative duties during my employment years included attending different lectures and meetings at the department, institute and faculty level. Another important responsibility included the participation in the "Prüfungsausschuss" (examination board) of the Faculty of Arts and Humanities. The examination board met monthly for several hours, or when needed, and discussed and decided upon legal, organizational and implementational aspects of all examinations, decided upon the recognition of degrees and other course achievements, decided upon the prolongation of deadlines, and examination withdrawal, and other information concerning examination regulations at the faculty level.

I was also responsible with the department's relation with the institute's library and contributed to ordering new linguistics books for the department while sorting out those books that were no longer relevant for the institute's research interests. It was due to my privileged and fruitful relation with the library's employees that I organized several book donations of more than 4.000 (mainly) linguistics books to the Transilvania University of Braşov. The last book donation from the University of Cologne was in October 2022.

Since October 2015, I am employed at the Transilvania University of Braşov, Romania. During the first two years, I served as a full-time assistant professor ("asistent universitar") at the Faculty of Letters, Department of Foreign Languages. My duties encompassed teaching, research and administrative responsibilities. Throughout this period, I instructed courses and seminars in German as a foreign language and German for specific purposes at the Faculties of Economics, Informatics, and Psychology. The teaching workload averaged a minimum of 20 teaching hours per week. Research activities included participation in conferences and workshops and the publication of articles.

In 2016, I wrote three project proposals for three research competitions, at national and institutional level. Two of the submitted projects received funding in 2018, after being evaluated by the UEFISCDI and the Transilvania University of Braşov.

From November 2017 to February 2021, I was employed as a full-time senior lecturer ("lector universitar") at the Transilvania University of Braşov, Faculty of Letters, Department of Theoretical and Applied Linguistics, German department. After returning from the first maternity leave (10 months, from January 2018 - October 2018), I started teaching German linguistics courses and seminars besides teaching German as a foreign language and German for specific purposes. Apart from my teaching activities, I coordinated the aforementioned research projects as a principal investigator. The first project was financed by the Transilvania University of Braşov during 2018 and 2019, and was dedicated to exploring the causality implicit in verbs. The second project I coordinated as a principal investigator was nationally funded by UEFISCDI, through a "Young Researchers" grant ("Tinere echipe") and was carried out between October 2018 and December 2020.

In 2019, I wrote two other project proposals for two national calls, financed by UEFISCDI: "Tinere echipe 2019" and "Proiecte de cercetare exploratorie 2019", which were both evaluated positively in December 2020 for being financed.

Since March 2021, I work as a full-time associate professor ("conferentiar universitar") at the Transilvania University of Braşov, Faculty of Letters, Department of Theoretical and Applied Linguistics, German department. After returning from my second maternity leave (11 months, from February 2021 - January 2022), I started coordinating the PCE project "Predictability in reference processing" as a principal investigator. The project received funding for a duration of 36 months and involves a team of six junior and senior researchers. In addition to my research responsibilities, I teach German linguistics to undergraduate and graduate students at the Faculty of Letters.

My academic background and professional growth are reflected in the research projects, teaching commitments, and other activities undertaken during my formative years. Below, I highlight the key research endeavors, teaching-related projects, and other engagements that have contributed to my professional development.

#### **B(ii) 1.3. Research activities and impact**

This section is devoted to outlining the most significant research activities I have undertaken. A decisive ingredient of my entire academic development was the teamwork. Nowadays, this term is heavily used and it refers to the qualified work within larger teams of researchers. My research and teaching definitely benefitted from the intensive teamwork experimented throughout the years working within larger academic communities. I started working within a high-performing collaborative research network in 2008, during my doctoral studies. This period was characterized by diversity in knowledge and expertise, views, background, perspectives, as well as age, gender and race. Not necessarily in solving routine activities is teamwork beneficial, but especially for research and development with an interdisciplinary character is a team more efficient than single researchers working successively on their tasks. Table 13 summarizes the research projects I coordinated as a project leader and those I was a research member of. I will then present each project in more detail and outline its main outcomes in terms of publications, presentations and workshop/conference organization.

# Table 13. Research projects as a project leader and member

I. Predictability in reference processing: effects of implicit causality and coherence relations, https://refproc.unitbv.ro. PN-III-P4-1D-PCE-2020-0731, PNCDI IIIProject leader2022- leaderFinanced by CNCS - UEFISCDI, "Proiecte de cercetare exploratorie" (PCE) Total funding: 245.000 EUROProject leader2018- leader20202. Discourse reference: processing pronouns and demonstratives, https://refdisc.unitbv.ro. PN-III-P1-1.1-TE-2016-1241, PNCDI IIIProject leader2018- leader2018- leader3. Verbal implicit causalityProject 20192018- leader2018- leader2019Financed by the Transilvania University of Braşov, Romania Total funding: 4.500 EUROProject 20192018- leader2019Financed by the Transilvania University of Braşov, Romania Total funding: 4.500 EUROProject 20162016- leader2016- leaderFinanced by the University of Köln, Germany Total funding: 10.000 EUROProject 2013- leader2016- leader2016- leaderFinanced by the University of Köln, Germany Total funding: 10.000 EUROProject 2013- leader2013- leader2014- leader	Research Projects	Role	Period
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Total funding: 10.000 EURO	Financed by the University of Köln, Germany		
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6. Discourse particles	Project	2008-
https://www.sfb732.uni-stuttgart.de	member	2012
Financed by the German National Science Foundation (DFG) at		
the University of Stuttgart, Germany, within the CRC 732		
Total funding: approx. 500.000 EURO		
7. Case and referential context	Project	2008-
https://www.sfb732.uni-stuttgart.de	member	2012
Financed by the German National Science Foundation (DFG) at		
the University of Stuttgart, Germany, within the CRC 732		
Total funding: approx. 500.000 EURO		

# 1. Predictability in reference processing: effects of implicit causality and coherence relations

Since 2022 and until December 2024, I am the project leader of the collaborative research project "Predictability in reference processing: effects of implicit causality and coherence relations", financed by **CNCS – UEFISCDI, Proiecte de cercetare exploratorie** (PN-III-P4-ID-**PCE-2020**-0731, PNCDI III). The total funding for the project is 245.000 EURO. More details about the project can be found here: <u>https://refproc.unitbv.ro</u>.

This project sets out to investigate the sematic structure of verbs, which guide next-mention biases (e.g., subject/NP1 vs. object/NP2 next-mentions), pronominalization rates and subsequent coherence relations between sentences. To this end, we experimentally test the impact of different verb types in local and global discourse through behavioral measures by means of sentence-continuation studies, questionnaires and corpus investigations. We will provide normative data on the implicit causality of a large number of high frequency verbs in Romanian. We will furthermore explore how the implicit causality of verbs interacts with sentence connectors in guiding participants' sentence continuations. We will explore these patterns in different populations: adults and children. Finally, we compare our findings to those obtained from other languages to contribute to the larger question of the universality of different implicit causality patterns.

## Achievements (status April 2024):

## **Publications:**

- 1. Lindemann, Sofiana & Mira, Ariel. "Accessibility Theory in Linguistics". In Oxford Bibliographies in Linguistics. Ed. Mark Aronoff. New York: Oxford University Press. ISBN: 9780199772810-0319.
- **2.** Chiara Gianollo, Jędrzejowsk Lukasz and **Lindemann, Sofiana** (eds.). 2022. Paths through meaning and form. Festschfit offered to Klaus von Heusinger on his 60<sup>th</sup> birthday. Universitäts- und Stadtbibliothek Köln, Köln. ISBN: 978-3-946275-13-8.
- **3.** Mădălina Matei & **Sofiana I. Lindemann**. 2022. Implicit causality biases of Romanian interpersonal verbs: elicitation and initial results. Bulletin of the Transilvania University of Brașov, Series IV: Philology and Cultural Studies, Vol.15(64). <u>https://webbut.unitbv.ro/index.php/Series\_IV/article/view/3107</u>
- **4. Sofiana I. Lindemann**. 2022. Thematic roles affect pronoun production in Romanian. In: Gianorllo, Chiara, Lukasz Jędrzejowski, Sofiana Lindemann. USB Monographs, Köln. ISBN: 978-3-946275-13-8. Link: <u>https://monographs.ub.uni-koeln.de/index.php/usbk/catalog/book/3</u>
- **5. Sofiana I. Lindemann.** 2021. Animacy and gender affect production. Ex oriente lux. In honorem Nicolae Saramandu. Ediziono del'Orso. <u>https://intranet.unitbv.ro/Portals/0/UserFiles/User343/Vol-omag-2021.pdf</u>
- 6. Sofiana I. Lindemann. 2021. Pronoun resolution and the factors that influence it. Exploring Languag Variation, Diversity and Change. Cambridge Scholars Publishing. ISBN: 1-5275-7183-1. <a href="https://anglistica.unitbv.ro/images/PDF/volum\_2021.pdf">https://anglistica.unitbv.ro/images/PDF/volum\_2021.pdf</a>

## **Conferences:**

- 1. **Sofiana I. Lindemann.** "Implicit causality biases of Romanian psychological state verbs". Presented at the international conference on "Referential Structure in Communication". University of Tokyo, Tokyo, Japan, March 18-19, 2024. (keynote speaker).
- 2. **Sofiana I. Lindemann** & Mădălina Matei. Verbal implicit causality and discourse connectives in Romanian sentence production. International conference of the German Science Foundation, Deutsche Gesellschaft für Sprachwissenschaft. Köln, Germany, March 2023.
- 3. **Sofiana I. Lindemann**. Verbal implicit causality. Conference on "Experimental Linguistics". Paris, France, October 2022. (online).
- 4. **Sofiana I. Lindemann**. Adverbialsätze im Rumänischen. International workshop on "Diachronie und Variation von Adverbialsätzen". Köln, Germany, September 15-17, 2022.

- 5. Mădălina Matei & **Sofiana Lindemann**. Implicit causality in Romanian interpersonal verbs. Confernce "Structure, Use and Meaning (SUM)", Universitatea Transilvania din Brașov. Brașov, Romania, September 2022.
- 6. **Sofiana I. Lindemann**. Thematic role biases in pronoun processing. Presentation at the "18th conference on British and American studies". Universitatea Transilvania din Brașov. Brașov, Romania, 20-21 May, 2022.
- 7. Marta Corcotoi, Minea Vlăduț, **Sofiana Lindemann**. Effects of grammatical function and thematic role in Romanian pronoun production. IMPRS Conference, Max Planck Institute of Psycholinguistics. Nijmejen, Netherlands, 1-3 June 2022 (attended online).

## Other project-related activities:

Since June 2022, I am a reviewer for the psycholinguistics conference, "Architectures and Mechanisms for Language Processing" (AMLaP). This international conference established itself as the main European venue for interdisciplinary psycholinguistic research. According to the organizers' own statement, "The conference aims to bring together experimental, computational, and theoretical perspectives on the cognitive architectures and mechanisms, which underly any aspect of human language processing, from lexical processing, parsing and interpretation, through to discourse level mechanisms"<sup>9</sup>. Furthermore, since April 2023 I am a reviewer for the international journal "Frontiers in Language Sciences" (https://www.frontiersin.org/journals/language-sciences).

## 2. Discourse reference: processing pronouns and demonstratives

From 2018 to 2020, I served as the project leader for the collaborative project "Reference in discourse: Processing pronouns and demonstratives", financed by CNCS – UEFISCDI. (Project: PN-III-P1-1.1-TE-2016-1241). The total funding was 450.000 LEI.

The project aimed at exploring some neglected mechanisms involved in reference resolution in Romanian and German, focusing on pronouns and demonstratives. We furthermore extended previous approaches by investigating not only the backwardlooking function of these expressions (i.e., the status previously occupied by the referents

<sup>&</sup>lt;sup>9</sup> http://www.amlap.org/

associated to these expressions in the previous discourse), but investigate their forwardlooking function (e.g., signaling a probable topic shift and referential continuity) as well.

We explored how these two functions are modulated by prominence or accessibility-related factors, including grammatical function, thematic roles, verbal implicit causality and topicality. Furthermore, we experimentally tested the impact of these factors in local discourse (i.e., between two adjacent sentences) and in global discourse (i.e., between more than two adjacent sentences) through behavioral measures by means of sentence-continuation studies and questionnaires.

#### Achievements

#### **1.1.** Publications (Books and articles)

- Sofiana I. Lindemann. 2020. Special indefinites in sentence and discourse. Tübingen: Gunter Narr. ISBN: 978-3-8233-8381-9.
- Sofiana I. Lindemann. 2022. Pronoun resolution and the factors that influence it. In: Fourteenth conference on British and American studies. Marinela Burada (ed.). Cambridge Scholars Publishing. ISBN: 1-5275-7183-1.
- Sofiana I. Lindemann, Stanca Mada, Laura Sasu, Madalina Matei. 2020. *Thematic role and grammatical function affect pronoun production*. Proceedings of the 11th International Conference of Experimental Linguistics, 12-14 October 2020, Athens, Greece. ISSN: 2529-1092.
- 4. **Sofiana I. Lindemann.** 2020. *Effects of indefiniteness on topic transitions. Revue Roumaine de Linguistique* LXV, 3, p. XX-XX. ISSN: 0035-3957. (ISI)
- Lindemann, Sofiana. 2017. Referenz und Prominenz. Germanistische Beiträge, Band 41/2017, Editura Universitatii din Sibiu, Sibiu. 173-195. ISSN: 1454-5144.

#### 1.2. Participation in (inter)national conferences and workshops

- Sofiana I. Lindemann, Stanca Măda, Laura Sasu, Mădlăina Matei. *Thematic roles and grammatical function affect pronoun production*. Presentation at the 11th international conference on experimental linguistics. University of Athens, Greece, October 12-14, 2020 (moved to online).
- Sofiana I. Lindemann. Information structure and postnominal demonstratives in Romanian. Invited speaker at the international workshop on "Prominent interfaces". University of Cologne, Germany, September 17-18, 2020 (moved to online).

- Sofiana I. Lindemann. Animacy effects in English pronoun production. Presentation at the 6th conference on "Theoretical and applied linguistics: structure, use and meaning". Transilvania University of Braşov, Romania, September 18-19, 2020 (moved to online).
- 4. **Sofiana I. Lindemann,** Stanca Mada & Laura Sasu. *Effects of thematic role and grammatical function on pronoun interpretation*. Presentation at the seventh Summer Neurolinguistics School. Moscow, Russia, June 22-24, 2020 (moved to online).
- Sofiana I. Lindemann. Special indefinites as discourse markers. Evidence from English and German. Workshop on "Approaches to Discourse-Relational Devices (DRDs): Textual connectors, discourse markers, modal particles". University of Bucharest, Romania, October 15-16, 2019.
- Sofiana I. Lindemann & Klaus von Heusinger. Discourse function of weak and strong demonstratives in Romanian. International conference on "Pronouns and discourse prominence". Kassel, Germany, October 1-4, 2019.
- 7. **Sofiana I. Lindemann**. *Pronouns in Romanian*. International conference on "Pronouns and discourse prominence". Kassel, Germany, October 1-4, 2019.
- Sofiana I. Lindemann & Laura Sasu. The effect of implicit causality on reference resolution. Presented at the "7th conference on British and American Studies". Universitatea Transilvania din Braşov, Romania. May 10-11, 2019.
- Sofiana I. Lindemann & Sabina Homană. *The causality implicit in verbs: A review*. The international conference "Professional communication". Universitatea Politehnica Timisoara, Romania. April 4-6, 2019.
- Sofiana I. Lindemann. Referenzielle Eigenschaften indefiniter Demonstrativpronomen. Presented at the "XXII. internationale Tagung Kronstädter Germanistik". Transilvania University of Braşov, Romania. April 5-6, 20109.
- 11. **Sofiana I. Lindemann.** *Verb-based implicit causality in sentence production.* CADIM 2, Universität zu Köln, Germany. June 22-23, 2017.
- Sofiana I. Lindemann: Next mention biases and the implicit causality in verbs. Presented at the "15th conference on British and American Studies". Transilvania University of Braşov, Romania. May 12-13, 2017.

#### 1.3. Keynote Speaker

**Sofiana I. Lindemann.** *Information structure and* postnominal demonstratives in *Romanian.* Invited speaker at the international workshop on "Prominent interfaces". University of Cologne, Germany, September 17-18, 2020 (moved to online).

#### **Organized conference:**

**Sofiana Lindemann** & Klaus von Heusinger organized the international conference on "Pronouns and discourse prominence" in Kassel, Germany, during 02-03.10.2019. More information about the conference can be found here: https://refdisc.unitbv.ro/index.php/conf-alias.

#### 1.4. Submission of another proposal on national level

In 2018 I wrote another proposal for a research project that was accepted for financing in the national competition for young researchers ("Tinere echipe 2019", call for project proposals organized by UEFISCDI). The project was called "**Grammatical and coherence effects in referential resolution**" and was on the list of projects to receive a funding of 450.000 LEI during 2021-2023. As I had to choose between the two project proposals that received funding in the 2019 UEFISCDI-organized competitions, the "Tinere echipe 2019" project and the "Proiecte de cercetare exploratorie 2019", I opted for conducting the latter, as it will be financed for a longer period of time than the first.

## 2. Verbal implicit causality

From 2018 to 2019 I was the project leader of the project "Verbal implicit causality", financed by the Transilvania University of Braşov, Romania, through a grant for young researchers ("Granturi pentru tineri cercetatori", competitia 2017). The total funding for the project was: 22.500 LEI.

The main aim of the project was to explore the semantic structure of verbs, which constraint next-mention biases (e.g., subject vs. object next-mentions). To this end, we elicited biases for verbs with a high frequency of occurrence in sentence-continuation studies.

#### Achievements (books, articles, conferences, selection):

## **Publications:**

- Lindemann, Sofiana. 2018. Die diachronische Entwicklung der differentiellen Objektmarkierung im Rumänischen. J.B. Metzler/ Springer. ISBN: 978-3-658-19612-7. <u>https://link.springer.com/book/10.1007/978-3-658-19612-7</u>.
- Sofiana I. Lindemann & Sabina Homană. 2019. *The causality implicit in verbs*. Scientific Bulletin of the Politehnica University of Timisoara. Transactions in Modern Languages. Vol. 18. Nr. 1. p. 14-28. ISSN: 1583-7467.

## **Conference participations:**

 Sofiana I. Chiriacescu: Script knowledge effects on information structuring. 39th annual conference of the German Linguistic Society (DGFS). Workshop on Information Structuring in Discourse. Universität des Saarlandes, Saarbrücken, Germany. March 8-10, 2017.

## 4. From local to global discourse structure

During 2015-2016 I was the project leader of the project "**From Local to Global Discourse Structure**", financed by the Faculty of Arts and Humanities of the University of Köln, Germany, together with Dr. Andreas Brocher and Prof. Dr. Klaus von Heusinger.

Although this undertaking may appear straightforward, it entails intricate decisions across various levels of discourse. For instance, how do speakers select the appropriate type of referring expression, and on what grounds do they chose a lexically elaborate expression over an attenuated one? Moreover, how does the choice of reference impact the subsequent discourse? In contrast to much of the existing literature in the field, which primarily examines the use of pronouns, our focus was predominantly on definite and indefinite noun phrases. We investigated how such expressions influence a speaker's discourse planning and shape a listener's anticipatory expectations regarding the progression of discourse. Crucially, this represented the first theoretical and experimental endeavor that manipulated the introduction type of a referent, i.e., its contextual dependency in terms of information status, and its referential mode. Moreover, this project analyzed the local, sentence-by-sentence impact of different types of referring expressions, and their global effects (i.e. within larger, multi-sentence discourses). To this end we employed both offline and online experimental paradigms to test four factors

pertaining to referential prominence, namely: (i) the likelihood that a referent will be mentioned again in the subsequent discourse (i.e. its immediacy of reference), (ii) the explicitness of the anaphoric term, (iii) the referential persistence of a referent (i.e. its frequency of subsequent mention), and (iv) the topic shift potential of a referent, continuing the work initiated in my dissertations.

## Achievements (selection):

- Brocher, A., S. Chiriacescu & K. von Heusinger. 2018. Effects of Information Status and Uniqueness Status on Referent Management in Discourse Comprehension and Planning. In: Discourse Processes, Vol. 5, 1-25.
- Chiriacescu, Sofiana. 2015. Effects of animacy and gender on the choice of referring expressions. Bulletin of the Transilvania University of Braşov, Vol. 18 (57). 15-21.
- Jasinskaja, K., S. Chiriacescu, M. Donazzan, K. von Heusinger. 2015. Prominence in discourse. In: Amedeo De Dominicis (ed.), Prominences in Linguistics. Proceedings of the pS-prominenceS International Conference. Univ. of Tuscia, Viterbo: DISUCOM Press, 134-15.

## **Conference participations:**

- "Effects of information status and definiteness on topic shift". Conference on Structure Use and Meaning (SUM). Transilvania University of Braşov. 21-23 September 2016.
- "Effects of reference form on the subsequent discourse. Evidence from English".
   14th conference on British and American Studies. Transilvania University of Braşov. 13-14 May 2016.
- "Salienz und Referenz am Beispiel von Personalpronomen". Conference: 19. Internationale Tagung Kronstädter Germanistik. Transilvania University of Braşov. 7-9 April 2016.
- "Definiteness marking affects referent processing in comprehension and production". Conference: Linguistic and Cognitive Effects in Anaphora Resolution. Aristotle University of Thessaloniki, Greece. 2015.
- "Towards a two-stage model of the comprehension of definite and indefinite noun phrases". Conference on Reference Tracking in Discourse. Universität zu Köln, Germany, 2015.

 "Der Einfluss von Definitheit und Informationsstruktur auf die referenzielle Prominenz". Workshop: Referenzielle Ausdrücke zwischen Informationsstruktur und Diskurs". Universität zu Köln, Germany, April 2015.

## 5. Referential expressions in discourse

During 2013 and 2014 I coordinated, together with Prof. Dr. Klaus von Heusinger, the collaborative project "Referential expressions in discourse", which was financed by the University of Köln, Faculty of Arts and Humanities, Germany.

## Aims of the project:

One important question of language theory deals with reference tracking, which refers to the way in which persons, things and events (generally termed referents) are introduced and maintained in the discourse. Psycholinguistic studies have shown that different factors are responsible for the introduction and remention of a referent, as well as the reference form used for this purpose. The project explored the role played by indefinite and definite noun phrases for giving structure to the unfolding discourse. The aim is to analyze the interconnection between three factors, namely: (i) indefiniteness of the noun phrase (definite vs. indefinite), (ii) the referential form used in the subsequent discourse and (iii) the discourse structuring potential of the referents.

## **Achievements (selection)**

## **Publications:**

- Chiriacescu, S. (ed.). 2013. Proceedings of the international conference" Theoretical implications of the syntax/ semantics interface in Romance". Konstanz UP, Germany.
- 2. von Heusinger, K. & S. Chiriacescu. 2013. The discourse structuring potential of differential object marking. *Revue Roumaine de Linguistique* LVII (4), 439-456.

## **Conferences:**

- "Effects of information status and givenness on topic shift. Evidence from a sentence-continuation study on German". Conference: RED14 - Indefinites in Discourse Structure. Universität zu Köln. 2014.
- "Information structure and discourse prominence. Evidence from differential object marking in Romanian". Conference on Focus realization and interpretation in Romance and beyond". Universität zu Köln. 2014.

- "Definiteness affects pronoun resolution: Evidence from German. Conference: Architectures and Mechanisms for Language Processing (AMLaP). University of Edinburgh, Scotland. September 2014.
- 4. "Effects of information status and definiteness on topic shift. Evidence from a sentence-continuation study on German". Conference: RefNet Workshop on Psychological and Computational Models of Reference Comprehension and Production. Edinburgh University Informatics Forum. Organized by EPSRC RefNet Research Network. September 2014.
- "Looking beyond accessible referents. Effects of different types of indefinite noun phrases on the subsequent discourse". Conference: Architectures and Mechanisms for Language Processing (AMLaP). University of Edinburgh. September 2014.
- "Definiteness and givenness affect pronoun resolution: Evidence from eye fixations". Poster presented at the 27th Annual CUNY Conference on Human Sentence Processing, Columbus, Ohio, USA. March 13-15, 2014. (with von Heusinger, Klaus, Andreas Brocher & Tim Graf).
- "Predicting upcoming referents: Evidence from German definite noun phrases". Conference on Discourse expectations: Theoretical, experimental and computational perspectives. Universität Tübingen, Germany. 2013.
- 8. "Definite noun phrases and their prominence in discourse". Conference: pSprominenceS. Prominences in Linguistics. University of Tuscia, Italy. 2013.
- "The discourse structuring potential of indefinite noun phrases in German and English. Consequences of reference form on the subsequent discourse". Conference: Linguistic evidence- Berlin Special conference. Humboldt-Universität zu Berlin, Germany. 2013.
- "Predictability effects of case-marking on direct objects: Evidence from Romanian". Conference: 26th Annual CUNY Conference on Human Sentence Processing (CUNY 2012). Columbia, SC, USA. March 2013.

## **Organized conference:**

Conference on "Focus realization and interpretation in Romance and beyond". Universität zu Köln. October 2014.

#### 6. Discourse particles

From 2008 to 2012, I was a research member within the collaborative research center "Incremental Specification in Context" at the University of Stuttgart, Germany, within the project "Discourse particles", financed by the German National Science Foundation (DFG). The Collaborative Research Centre was funded between 2006-2018 by the German National Science Foundation (DFG). In its last phase, the CRC comprised more than 16 projects and 40 researchers. All projects investigated the linguistic property of "underspecification" from different perspectives. The idea behind this property is that individual linguistic expressions are often ambiguous or underspecified when treated in isolation. However, when these elements are combined to create larger units, the majority of ambiguities are resolved.

#### About the project:

The project explored those discourse properties that guide the interpretation of discourse particles. We focused on the distribution and interpretation of discourse particles in the so-called *Nacherstposition* in German, which corresponds to the position immediately following the first constituent in a matrix clause. The common view is that the use of a discourse particle in this position is associated with an effect of topic shift.

## Achievements:

## **Publications:**

- Chiriacescu, Sofiana (2011): Effects of Reference Form on Frequency of Mention and Rate of Pronominalization. In: I. Hendrickx, S. Lalitha Devi, A. Branco &R. Mitkov (eds.). *Anaphora and Reference Resolution*. Selected papers of the 8th Discourse Anaphora and Anaphor Resolution Colloquium. Heidelberg: Springer.
- 2. Chiriacescu, Sofiana (2011). Factors contributing to the salience of referents. *Volume in honour of Prof. N. Saramandu*. Bucharest: Bucharest UP.
- Chiriacescu, Sofiana & von Heusinger, Klaus von (2011): Discourse Structuring Potential of definite noun phrases in natural discourse. In: I. Hendrickx, S. Lalitha Devi, A. Branco &R. Mitkov (eds.). Anaphora and Reference Resolution. Proceedings of the 8th Discourse Anaphora and Anahpor Resolution Colloquium (DAARC 2011). Lisbon: Edições Colibri, 151-162.

- 4. Chiriacescu, Sofiana & von Heusinger, Klaus von (2011): Discourse Structuring Potential of definite noun phrases in Romanian. In: K. van Deemter, A. Gatt, R. van Gompel and E. Krahmer (eds.). Proceedings of the Workshop on the Production of Referring Expressions (PRE-CogSci 2011): Bridging the gap between computational, empirical & theoretical approaches to reference, 1-5.
- Chiriacescu, Sofiana (2011). The role of expectancy in choice of referring expressions. In: Lucrarile celui de-al treilea Simpozion International de Lingvistica (Working Papers of the Third International Linguistics Colloquium), ed. N. Saramandu & M. Nevaci & C. I. Radu. Bucharest: Bucharest UP, 2011.
- von Heusinger, Klaus & Sofiana, Chiriacescu (2011): *Pe*-marked definite NPs in Romanian and discourse prominence. In: N. Pomino & E. Stark (eds.), *Proceedings of the V Nereus International Workshop "Mismatches in Romance"*. Arbeitspapier 12x. Fachbereich Sprachwissenschaft, Universität Konstanz.
- Chiriacescu, Sofiana (2010). The presentative function of German *so'n*. ("Functia prezentativa a lui so in limba germana"). In: Lucrarile celui de-al treilea Simpozion International de Lingvistica", ed. N. Saramandu & M. Nevaci & C. I. Radu. Bucharest: Bucharest UP.
- 8. Chiriacescu, Sofiana & Klaus von Heusinger (2010). Discourse prominence and *pe*-marking in Romanian. *International Review of Pragmatics* 2(2). 298-332.

## **Conference Presentations:**

- "Effects of Reference Form on Frequency of Mention and Rate of Pronominalisation". Conference: 8<sup>th</sup> Discourse Anaphora and Anaphor Resolution Colloquium (DAARC), Faro, Portugal. 6-7. October 2011.
- "The Discourse Structuring Potential of Two Types of Definite Noun Phrases in Romanian". Conference: 8<sup>th</sup> Discourse Anaphora and Anaphor Resolution Colloquium (DAARC), Faro, Portugal. 6-7. October 2011 (with Klaus von Heusinger).
- "The Discourse Structuring Potential of Definite Noun Phrases in Natural Discourse". Conference: 33<sup>rd</sup> Annual Conference of the Cognitive Science Society (COGSCI), Boston, MA, USA. 20. July 2011 (with Klaus von Heusinger).

 "Stability of reference, discourse prominence and *pe*-marking in Romanian". Guest lecture at the Psycholinguistics Lab of the University of Southern California, LA, USA. 20 April 2011.

## **Organized conferences and workshops:**

- International conference: "Nereus VI, Theoretical implications at the syntax/semantics interface in Romance". University of Köln, 15-17. November 2012 (together with Prof. Dr. Martin Becker, Prof. Dr. Chiara Gianollo, Prof. Dr. Klaus von Heusinger).
- Workshop on "Formale Pragmatik", organized at the University of Stuttgart, Institute of German Linguistics (together with Prof. Klaus von Heusinger). February 6, 2009 (<u>http://gerlin.phil-fak.uni-koeln.de/kvh/konf/2009\_FormalePragmatik/index.html</u>).

## 7. Case and referential context

From 2008 to 2012, I was a research member within the collaborative research center "Incremental Specification in Context" (CRC) at the University of Stuttgart, Germany, within the project "Case and referential context".

## About the project:

The project "Case and referential context" investigated the phenomenon of Differential Object Marking (DOM) in different languages, such as Spanish, Romanian, Turkish and Mongolian. DOM is a phenomenon that describes the tendency found in certain languages to morpho-syntactically mark the direct object if its associated referent displays specific properties: it is situated high on the scales for animacy, definiteness and topicality. The project developed a semantic model that accounted for the interaction of these three quite different categories and unified them in the new concept of referential context, which determines the specification process of underspecified lexical forms.

## Achievements:

## **Publications:**

1. Chiriacescu, Sofiana (2011a). The Discourse Structuring Potential of Indefinite Noun Phrases. Special Markers in Romanian, German and English. Doctoral thesis. University of Stuttgart.

- Chiriacescu, Sofiana (2011b). In: I. Hendrickx, S. Lalitha Devi, A. Branco & R. Mitkov (eds.). Anaphora and Reference Resolution. Selected papers of the 8th Discourse Anaphora and Anaphor Resolution Colloquium. Heidelberg: Springer. pp. 132-143.
- Chiriacescu, Sofiana (2011c). In: Nevaci, M. (Ed.), Studia Linguistica et Philologica: Omagiu Proferoruli Nicolae Saramandu la 70 de ani (Volume in honor of Prof. N. Saramandu). Bucharest: Bucharest UP, pp. 247-254.
- Chiriacescu, Sofiana (2010). In: Lucrările celui de-al treilea Simpozion International de Lingvistică, ed. N. Saramandu & M. Nevaci & C. I. Radu. Bucharest: Bucharest UP.
- Chiriacescu, Sofiana & Klaus, von Heusinger. (2009). *Pe-marking and referential persistence in Romanian*. In: Riester, Arndt & Onea, Edgar (Hrsg.). SinSpec, Vol. 3, "Incremental Specification in Context". Online Publikationsverbund der Universität Stuttgart (OPUS), 1-19.
- Chiriacescu, Sofiana. (2009). DOM in Romanian and the referential form-mental accessibility interplay. Bulletin of the Transilvania University of Braşov, 2(51). Series IV: Philology and Cultural Studies, 149-154.
- Chiriacescu, Sofiana. (2009). Indefinite NPs and pe-marking in Romanian. 2009.
   In: N. Saramandu, M. Nevaci und C. I. Radu (ed.). Proceedings of the Second International Linguistics Colloquium. Bucharest: Bucharest UP, 401-413.

## **Conference Presentations:**

- "Topic shift and pe-marking in Romanian". Conference on Specificity from Theoretical and Empirical Points of View, Universität Stuttgart, Stuttgart, Germany, September 1<sup>st</sup>, 2010.
- "Two specific indefinite articles in German". Workshop at the University of Southern California, Los Angeles. (May 25, 2010); Guest lecture at the University of California, Santa Cruz, (May 18, 2010); Linguistics Colloquium at the Universität Konstanz, May 6, 2010 (with Klaus von Heusinger & Annika Deichsel).
- 3. "So-indefinites in German". Workshop on Reference and Accessibility, Universität Stuttgart, Stuttgart, Germany. February 2010.

- "The presentative function of German so'n". Conference: The Third International Linguistics Conference organized by the "Iorgu Iordan - Alexandru Rosetti" Institute of the Romanian Academy, Bucharest, Romania. November 2009.
- 5. "Topic persistence of differentially marked direct objects", Institute for Lingusitics, Universität Bielefeld, Bielefeld, Germany. March 2009.
- "The prominence-enhancing function for indefinite markers". Sinn und Bedeutung, Workshop on Indefiniteness Cross-Linguistically, Humbold-Universität zu Berlin. February 24-26, 2009.
- "Factori locali si globali responsabili pentru marcarea OD cu pe" ("Local and global factors responsible for DOM marking"), conference organized by the "Iorgu Iordan-Alexandru Rosetti" Institute of the Romanian Academy, Bucharest, Romania. November 2008.
- "Remarks about the evolution of DOM in Romanian (2018-2000)", organized by the Institute for German Linguistics, Universität Stuttgart. 15.06.2007. (Invited speaker).

## **Organized conferences and workshops:**

- International conference on "Reference and Discourse Structure", organized at the University of Stuttgart, Germany, 15-17 January 2010 (together with Klaus von Heusinger).
- 2. Workshop on "Reference and Accessibility", Universität Stuttgart, Stuttgart, Germany. February 2010.

# In summary, the academic impact of my research is reflected in the following accomplishments:

- (i) the number of national and international projects I supervised as a project leader (n=5, of which 2 projects coordinated at the University of Köln and 3 at the Transilvania University of Braşov),
- (ii) the number of books as a single author published abroad (n=4),
- (iii) the number of edited books published abroad (n=2),
- (iv) the number of ISI articles (n=5),
- (v) the number of other papers (n=22).
- (vi) the number of presentations at national and international conferences (n = >50).

Moreover, two of the research impact indicators currently used by CNADTCU, namely KVK-Karlsruher Virtueller Katalog and WorldCat, cite my publications approx. 70 and 50 times respectively. As for Google Scholar, my profile subsumes 54 entries, which are cited 311 times, resulting in an h-index of 9.

#### **B** (ii) 1.4. Teaching Engagements

My teaching experience stems from an extensive period of professional growth involving various activities, including research, documentation, analysis, evaluation and the dissemination of my own and others' research endeavors. On the one hand, my teaching expertise has benefited from the period I spend as an undergraduate, graduate, and doctoral student at different national and international universities from 2002 to 2011. Shadowing experienced educators allowed me to familiarize myself with a range of teaching methodologies, enabling me to eventually adopt those that resonated most with me. On the other hand, my teaching approach has evolved and matured over time through my own teaching practice.

Another significant facet of my teaching background is its international exposure, shaped by my education at various higher education institutions, namely two German universities, the Universität Stuttgart and the Universität zu Köln, an American university, the University of Southern California, and two Romanian universities, the Universitatea Transilvania din Brașov and the "Universitatea "Lucian Blaga" Sibiu. In the following, I detail the key aspects that contributed to the constant development of my teaching activities. An international teaching career at universities in Europe and America offers multiple advantages, such as: (i) the exposure to diverse cultures, which enriches the teaching approach and fosters cross-cultural understanding among students; (ii) enhancement of language skills and facilitation of communication with diverse student populations; (iii) access to up-to-date resources; (iv) building a global network of colleagues, enhancing professional connections and opportunities for collaboration; (v) enabling the direct comparison the three educational systems and management styles.

The two Diploma and Magister degrees I obtained, in Applied Modern Languages and Literature and Linguistics, as well as my doctoral studies, constituted the starting point not only for my research career but for my teaching activities as well. During this period of almost ten years, I was trained and formed as a student in two different educational systems: the Romanian and the German one. Moreover, I attended different doctoral and postdoctoral classes during my stay as a visiting scholar at the University of Southern California, gaining insight into the American higher educational system as well. Besides my experience as a student in the aforementioned systems, I was employed as a teaching and research staff member within a Romanian university and two German universities, starting with 2007. Accordingly, I was able to develop my research competence alongside my teaching and organizational abilities in a fruitful international environment.

To develop my teaching skills and techniques I attended the theoretically-oriented postgraduate course, "Modulul de formare psihopedagogica pentru profesia didactica", offered by the "Departamentul de Pregatire al Personalului Didactic" (Teacher Training Department) in 2003. Moreover, during 2012 and 2015 I attended the intensive theoretically and practically-oriented qualification program for professional teaching and learning skills for the university, "Professionele Lehrkompetenz für die Hochschule", organized by the Center for Advanced Teaching and Learning at the Universities of Stuttgart and Köln. The program includes a thoroughly founded didactic qualification and concludes with a certificate, which is becoming a prerequisite for teaching at many universities throughout Germany. The certificate is comprised of 200 work units/hours, which are acquired within workshops, seminars and courses, cooperative job shadowing and as part of an innovative teaching project at the end of the program. My teaching abilities greatly benefited from this program.

My teaching activities started in October 2003 at the Transilvania University of Braşov, Faculty of Letters. I was employed at the Department of Foreign Languages (German studies) where I taught German as a foreign language and German for specific purposes to B.A. students at various levels of language proficiency.

During my employment years at the University of Stuttgart, Germany, within the Department of German Linguistics, I taught various courses, seminars and colloquia to B.A. students, such as *Examenskolloquium* (course preparing students for their final exams in German linguistics), *wissenschaftliche Arbeitsmethoden* (academic writing), *Einführung in die Linguistik* (introduction to linguistics).

Between April 2012 and October 2015, as I was employed at the Institut für Deutsche Sprache und Literatur I at the University of Köln, Germany, I taught different courses and seminars to both B.A. and M.A. students, including *Einführung in die Sprachwissenschaft* (introduction to linguistics), *Wortbildung* (word formation), *Semantik* (semantics), *Pragmatik* (pragmatics), *Nominalisierungen* (nominalisations), *Text und Anapher* (text and anaphora).

Since October 2015, I have been teaching at the Transilvania University of Braşov, within the Faculty of Letters, various courses and seminars on *German as a foreign language* (different proficiency levels and for different professionals), *Grammatische Strukturen* (grammatical structures), *Schriftliche Kommunikation* (written

92

communication), *Pragmatik* (pragmatics), *Morphosyntax* (moprho-syntax), *Lexikologie* (lexicology), *Einführung in die Deutsche Gegenwartssprache* (introduction to linguistics), *Syntax* (syntax), *Terminologie* (terminology), *Text und Referenz* (text and reference), *Linguistische Interferenzen* (linguistic intereferences), *Übersetzungen* (translation), *Morphologie* (morphology), *Interkulturelle Modelle* (models of intercultural learning), *Textualität und Textstruktur* (textuality and text structure).

My constant preoccupation with improving my teaching skills is mirrored in one of my latest teaching-related projects, namely in the developing of course material in the form of an exercise book for Morphology students with detailed explanations. The book was published at the beginning of 2023 with Thelem publishing house.

I have always maintained a close connection between my academic and research activities, by collaborating with students on topics that are highly relevant in various research areas. During 2012-2015 I have (co-)supervised several B.A. and Master theses in linguistics and pedagogy at the University of Cologne.

Another teaching-related activity I have taken part in was the development of an innovative teaching and evaluation concept for the course "Introduction to linguistics" at the University of Köln, Institut für Deutsche Sprache und Literatur I, Sprachwissenschaft. Together with two department colleagues and other representatives of the Advanced Teaching Department of the university, we designed and implemented a blended-learning concept for the aforementioned course, which we then tested during 2012-2014. Its design, concept and implementation are documented in the book "Implementierung von Blended Learning-Methoden in der Lehre" (Implementing blended learning-methods for teaching), published with Thelem in 2020. The book highlights the advantages of combining digital learning tools with more traditional classroom face-to-face instruction methods. We chose a rotation method, in which students rotate between self-paced online learning and presence training units. A detailed description of the project is presented in section Bi(3).

Another administrative activity, which brought me closer to students' concerns and problems was the participation as a permanent member in the meetings of the "Prüfunsgausschuss", which is a consultative examination board of the Faculty of Arts and Humanities of the University of Köln, and which examines and evaluates some exceptional cases pertaining to the undergraduate, graduate and postgraduate students of the faculty. The listed activities contributed to the expression of my didactic experience, which has been highlighted by:

- Teaching activities at two German universities (Stuttgart and Köln) and a Romanian (Brasov) university;
- (ii) Publishing a monograph on an innovative blended-learning teaching concept designed and implemented at the University of Köln, Germany (in 2022);
- (iii) Publishing a monograph on exercises in Morphology (in 2023);
- (iv) Conducting research projects in the domain of teaching and learning for higher education.

## B (ii) 1.5. Service to the field

In the last years, I have accepted the invitation to review several papers and books for different publications, such as the *Natural Language and Linguistic Theory*, Springer; Revista Espanola de Lingüística Aplicada/ *Spanish Journal of Applied Linguistics*, John Benjamins; *Frontiers in Languages Sciences*; *Revue Roumaine de Linguistique*; *Editura Ars Docendi*. Reviewing a paper is a time-intensive process as writing a paper report can be almost as much work as writing a manuscript, however, as a reviewer, researchers return the service they receive when submitting a paper.

Besides reviewing article submissions to journals and other publications, I have also evaluated abstract submissions for different conferences, such as: AMLaP (Architectures and Mechanisms of Language Processing), NEREUS Research Network, SUM (Structure, Use and Meaning); Reference and Discourse, and others.

I was chosen as a reviewer for three programs funded by the "Unitatea executiva pentru finantarea invatamantulu superior, a cercetarii, dezvoltarii si inovarii" (UEFISCDI). UEFISCDI is the Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding, which is the main funding agency for research and innovation, directly subordinated to the Romanian Ministry of Education and Scientific Research.

#### B(ii)-2 Career development objectives

My general short-term and mid-term career development plans primarily revolve around the three core aspects that have shaped my academic journey thus far, namely teaching, conducting scientific research, and administrative responsibilities. Pursuing these avenues requires ongoing enhancement and refinement of the knowledge and skills acquired throughout my professional advancement.

The present academic context, characterized by constant change and development, requires, on the one hand, the ability to adapt to new research and teaching methods, and, on the other hand, a clear and constant evaluation and analysis of the applicability and utility of these new methods. The ultimate aim of the learning and updating process is to achieve and sustain a level of excellence within an international, competitive, and evolving academic landscape. In the following sections, I outline the main objectives of my scientific research, didactic and other activities for the upcoming years.

#### B (ii) 2.1. Research activities

My research endeavors will focus on furthering the already established research themes and exploring the development of new ones.

First, one short-term plan (until the beginning of 2025) is to continue the implementation of the research project PN-III-P4-ID-PCE-2020-0731, PNCDI III, financed by UEFISCDI, on the effects of implicit causality and coherence relations on reference processing. The main aim is to investigate the semantic structure of verbs, which guides next-mention biases (e.g., subject vs. object continuations), pronominalization rates and the use of particular sentence continuations in terms of coherence relations (e.g., Explanation vs. Result continuations). This project will explore whether the mechanism of implicit causality is a reflection of the semantic structure of verbs, or rather the expression of the way in which we represent the causal structure of events. More concretely, while it is clear that verbal meaning plays an important role, it is still under debate which aspects of verbal meaning actually trigger these biases (Brown & Fish 1983, Crinean & Garnham 2006, Hartshorne 2014). A goal of this project is to compare the causality biases of Romanian verbs to those obtained from other languages, continuing the cross-linguistic research summarized in Lindemann (2020) and Lindemann & Homană (2019).

95

Additionally, research on implicit causality and coherence relations in general has tended to focus mostly on personal pronouns especially in Germanic languages. However, cross-linguistically, many other types of referring expressions are used for anaphoric purposes. Romanian uses, besides personal pronouns, null pronouns, demonstratives, clitics and definite noun phrases to refer to previously mentioned referents. We will investigate whether causality effects apply to referring expressions beyond personal pronouns. It could be that various types of anaphoric forms differ with respect to how sensitive they are to implicit causality. For example, Lindemann (2019) showed that in Romanian, null and overt pronouns differ in how sensitive they are to grammatical and thematic role. The present project will shed light on these issues by investigating reference resolution preferences for different types of verbs in Romanian and comparing them to those attested for other languages.

Second, I will continue my work on demonstratives cross-linguistically. After investigating the semantic and discourse-pragmatic behavior of proximal demonstratives in German and English (e.g., Lindemann 2022), I will focus on the distribution of preand post-nominal demonstratives in Romanian as devices for marking information structure. Romanian and Spanish show pre- and post-nominal demonstratives. In these languages, the post-nominal demonstrative is preceded by a definite noun with the definite article, as seen in (18b) (what Giusti (1994) calls the "double definiteness phenomenon"), whereas the pre-nominal form remains unmarked for definiteness, as illustrated in (18a). See also Alexander (2007: 62) for Spanish. We also find pre- and post-nominal demonstratives in languages without definite articles, as Latin or Polish. Finally, some languages, like Greek, obligatorily use the definite article with both the pre- and post-nominal demonstrative. For Romanian, Spanish, Latin and Polish the post-nominal demonstrative is less frequent (Zulaica Hernández 2017).

(18)	(a)	acest	om	(b)	omul	acesta
		DEM	Ν		N-ART	DEM
	'this man'			'this ma	ın'	

Most studies on the use of demonstratives in these languages, and Romanian in particular, focus on their diachronic specialization (e.g., Nicolae 2013), selection features and syntactic derivations (e.g., Cornilescu & Nicolae 2010), disregarding their information-structural contribution at sentence and discourse level. The few studies concerned with

these issues (e.g., Ahn 2017, Tasmowski 1990: 95) assume that pre-nominal demonstratives are anaphoric, while post-nominal ones are deictic. Manoliu-Manea (1968: 180), however, argues that pre-nominal demonstratives are topics and post-nominal demonstratives introduce a referent in focus. In a next step, I intend to empirically test this last claim, which still awaits validation. This will connect the structure of the DP with its function in referent management in discourse.

Third, I would like to investigate the use of demonstratives by Transilvanian Saxons in Romania, which speak a variety of Moselle Franconian German. Working on these topics will ideally contribute to the identification of related research themes.

I am highly motivated to continue writing grant proposals for institutional, national and international financing competitions so as to receive funding for other projects as well, continuing my activity as a project leader. One important goal in this respect is to develop a research team based on young researchers so as to steadily increase the volume of scientific results and to sustain the tasks that need to be carried out in various research projects. Additionally, students will have the opportunity to experience working within a project, analyzing the bibliography, developing research questions, choosing empirical methods to address the research question, and conduct the experimental research needed. Furthermore, students will have the opportunity and will be encouraged and mentored to write their theses on a research topic related to the project's topic and to present their work at national conferences.

Furthermore, I will continue to publish research papers and books, preponderantly in high impact journals, such as Revue Roumaine de Linguistique, International Review of Pragmatics, Discourse Processes, Springer, Oxford University Press, Gunter Narr, TUD.

Participating in national and international workshops and conferences to present and discuss (preliminary) results of my research with researchers working on related topics will continue to be on my agenda. I will also encourage my project team members to present joint papers and own work at such events.

Another important overall goal is to increase the (inter-)national visibility of the Department of Theoretical and Applied Linguistics and the Transilvania University. To this end, I will continue to organize conferences and workshops at my home university and abroad. Moreover, I will continue the fruitful collaborations I have established throughout the time.

#### B (ii) 2.2. Educational activities

Educational activities represent an important component of my academic career, which will be further developed in the upcoming years. The universities of today are confronted with tremendous challenges, as our societies are becoming increasingly complex and the technology-based economies are rapidly changing. In response to these changes, universities need to educate to higher academic standards than ever before. According to Shulman (1987), scholars need to be experts in their fields, so that they teach students how to connect information and ideas across different fields and areas and to everyday life.

Another main goal of teaching, which has become even more visible during the pandemic years, is the need to equip students with autonomous and lifelong learning skills. In other words, although the development of a deep understanding of the subject matter remains the basis of learning, schools and universities need to educate students to be autonomous and self-directed lifelong learners (OECD, 2020). As Bjork et al. (2013: 418) considers, our "world creates a need for self-initiated and self-managed learning. Knowing how to manage one's own learning activities has become, in short, an important survival tool".

In addition to subject-matter knowledge, knowledge of self-regulated learning techniques, teaching requires pedagogical skills, teaching methods, knowledge about child and adult development and learning.

Taking into account these factors and my past teaching experience, the primary objectives of my future educational activities will revolve around three key aspects, outlined as follows.

#### **1. Curriculum Development**

- One of the more general aims is offering students an up-to-date learning and teaching environment;
- The constant development and updating of the educational process through the adaptation of the teaching contents to reflect current advances in the field;
- Creating and publication of teaching material for lectures and seminars;
- Using the e-learning platform of the university to sustain the teaching and learning process;

- To enhance the learning and teaching experience, I will persist in incorporating students' course evaluations into the refinement of the didactic process;
- Another overarching objective is to attract students from various parts of Romania to pursue studies at the Faculty of Letters of the Transilvania University of Braşov;
- Encouraging enrollment of students from both EU and non-EU nations in our linguistics BA and MA programs via Erasmus (+) exchange initiatives and similar programs.

# 2. Pedagogy

- Taking classes offered for faculty members, or organized by accredited centers for teaching and learning (e.g., HDZ in Köln, Stuttgart or other cities) has been proven highly beneficial for my teaching development. I plan to attend other such seminars and courses in the upcoming years.
- Participating in regular visits to exchange information, methods and didactic directions will contribute to both my professional growth and the advancement of the department and faculty to which I belong;
- Drawing from my teaching experience and the knowledge acquired thus far, I intend to implement novel teaching methodologies to enhance my instructional approach;
- After publishing a book on the implementation of new teaching concepts in higher education, I intend to continue this line of research.

## 3. Supervising students

- Students benefit tremendously from education if they are self-motivated and engaged in a dynamic community of learners and when education includes a strong learning-by-doing component in a rigorous academic system concept.
- First, deep and skillful training will be provided by means of the courses, seminars and tutorials I will continuously update;
- Second, the courses and seminars will feature a practical focus aimed at addressing real-world problems;
- I will continue to oversee undergraduate and graduate theses on diverse subjects and provide guidance to doctoral candidates as well;

- I will persist in fostering and supporting students interested in research to prepare and deliver presentations at conferences and institutional scientific events (e.g., AFCO, Noaptea cercetatorilor, etc.).
- These goals will be obtained by:
  - Applying didactical methods centered on empirical learning, team and group learning; I intend to stimulate the active involvement of students in courses and seminars;
  - Ideally, motivated students will be extrinsically motivated as well to pursue their scientific interest, by offering them student positions within institutionally or nationally financed research projects. For example, in the nationally funded research projects lead by me, I employed four students (1 B.A. student, 2 M.A. students, 1 doctoral student) to work on implicit causality and other project-related topics;
  - Establishing a good working relationship with the advised students to obtain degree or project completion through: regular check-ins, a clear working structure, discussing goals;

The habilitation thesis and the documents provided in the appendix serve as a condensed written documentation of my year-long commitment to the most significant aspects of higher education. A logical progression in my professional journey is to assume the role of primary advisor to doctoral students. In terms of research, I have demonstrated compliance with all national and institutional requirements to chair doctoral examinations, supported by a robust publication record. Regarding my pedagogical experience, I deem myself well-suited for this responsibility, drawing upon extensive (inter)national experience in supervising BA and MA theses and leading research teams. Additionally, I am keen on exchanging best practices with senior colleagues and participating in training sessions on doctoral advising. At a broader level, through mentorship, I aim to ensue that the forthcoming generation of scholars is adequately prepared to make meaningful contributions to the field. Effective doctoral advisement is paramount for universities, as it contributes to enhancing institutional standing, nurturing future generations of scholars, and fostering innovation and discovery.

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