Anaphoric potential of bare nouns and event structure in Turkish

by

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Dedicated to Lian

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List of Abbreviations

A/Ag	Agent
ABIL	Abilitative
ABL	Ablative
ABS	Absolutive
ACC	Accusative
ACD	Antecedent-contained deletion
ADV	Adverb
AGR	Subject-verb agreement or possessor-noun agreement
AGRsP	Subject agreement licensing position
AGT	Agentive case
AOR	Aorist
ASP	Aspect or mood marker (general)
B	Noun class agreement
CAUS	Causative
CL	Classifier
CMP.M	Compound marker
COMP	Complementizer
COMPL	Completive aspect
CONN	Connective particle
CONV	Converb
COP	Copula
CP	Complementizer phrase
DAT	Dative
DEF	Definite
DET	Determiner
DIST	Distal
DP	Determiner phrase
DR	Discourse referent
DRS	Discourse Representation Structure
DRT	Discourse Representation Theory
DU	Dual
DUR	Durative
EC	Existential closure
ECP	Empty Category Principle
EMPH	Emphatic
EP	Epenthetic

ERG	Ergative
EV	Evidentiality
EZ	Ezafe (grammatical particle)
F.NOM	Factive nominal
F/FEM	Feminine
FACT	Factual
FREQ	Frequentative
FUT	Future
GEN	Genitive
HAB	Habitual
ILP	Individual level predicate
IMP	Imperfective
INABIL	Inabilitative
INC	Incorporated
INCOMP	Incomplete
IND	Indicative
INDF	Indefinite
INF	Infinitive
INSTR	Instrumental
INTR	Intransitive
KP	Case phrase
LMEM	Linear mixed effect model
LOC	Locative
MOD	Modal
N	Neuter
NEG	Negation
NI	Noun incorporation
NOM	Nominative (form of *wh*-agreement in Chamorro)
NP	Noun phrase
NumP	Number phrase
OBJ	Objective
OM	Object marker
P.COP	Past copula
PART	Partitive
PASS	Passive
PAT	Patientive
PCT	Participle
PFV	Perfective aspect
PI	Pseudo-incorporation
PL	Plural
PNI	Pseudo-noun incorporation

POSS	Possessive
PP	Prepositional phrase
PPT	Past participle
PRE	Nominal inflection prefix
PredOP	Predicate operator
PRF	Perfect
pro	Covert pronoun
PROG	Progressive
PRS	Present tense
PST	Past tense
PUNC	Punctual
Q	Question particle
RV	Regular verb
S	Subject
SE	Standard error
SG	Singular
SLP	Stage level predicate
SPEC	Specifier
ST	Stative verb
SUBJ	Subjunctive
SUF	Nominal inflection suffix
SUPE	Superessive case
TA	Thematic argument
Th	Theme
TI	True incorporation
TLV	True light verb
TP	Tense phrase
TR	Transitive
UNM	Unmarked morphological case
V	Verb
VAV	Vague action verb
VOS	Verb-object-subject
VP	Verb phrase
VSO	Verb-subject-object
WH	*wh*-agreement
1	First person
2	Second person
3	Third person
4	Fourth person
Ø	Empty element

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1 Introduction

1.1 Goals of the dissertation

This dissertation investigates the discourse-semantic properties of weakly referential nouns in so-called "incorporation structures" in Turkish. The term "incorporation" is used to describe constructions in which the verb and typically the direct object form a close unit (Sadock, 1980; Mithun, 1984; Baker, 1988). Since Massam (2001) coined the term "pseudo-incorporation", a distinction has been made between true incorporation and pseudo-incorporation, where the latter describes a semantically similar phenomenon, but in which the incorporated object has more syntactic freedom than the truly incorporated one. These constructions share peculiar properties, such as name-worthiness, narrow scope behavior, number neutrality and reduced discourse referentiality. This shared semantic nature often leads to the unification of both phenomena under the label "semantic incorporation". However, depending on how the noun and the verb are combined, the properties diverge in various aspects. For an illustration, compare the Turkish noun-verb combinations in (1a) and (1b). The noun *perde* 'curtain' in (1a) retains its meaning when combined with the verb *asmak* 'hang'. In contrast, the noun *surat* 'face' in (1b), in combination with the verb *asmak* 'hang', leads to a non-literal interpretation, suggesting that Nurten was upset.

(1) a. Nurten dün perde as-tı.
Nurten yesterday curtain hang-PST
'Nurten hung curtains yesterday.'

b. Nurten dün bütün gün surat as-tı.
Nurten yesterday whole day face hang-PST
'Nurten was upset all day yesterday.'
Lit. 'Nurten face-hung all day yesterday.'

Within the literature on Turkish noun incorporation, both types of noun-verb constructions are subject to the same analysis and are classified either as true incorporation (Nilsson, 1986; among others) or pseudo-incorporation (Öztürk, 2005a; among others).

Nevertheless, they display differences with regard to both morpho-syntactic and discourse-semantic properties, such as definiteness, gapping and pronominalization, among other properties. Therefore, the first goal of this dissertation is to provide a comprehensive overview of the various perspectives that categorize Turkish bare nouns within the true incorporation account or the pseudo-incorporation account. As a result, I come to the conclusion that these constructions cannot be subject to the same analysis due to their variable behavior. In particular, I argue that bare nouns, when combined with regular verbs (RVS) such as in (1a), should be distinguished from bare nouns involved in idiom formation (IDIOMS) as in (1b), and from bare nouns in combination with other verbs such as true light verbs (TVLS) and vague action verbs (VAVS). Hence, I propose an incorporation strictness scale, as outlined in (2). The scale suggests that bare nouns in idioms, on the left edge, exhibit a tight bond with the verb, adhering strictly to the properties of true incorporation, whereas bare nouns in combination with regular verbs, on the right edge, have a looser bond, indicating less strict adherence to these properties, allowing them to pass the tests proposed in the literature.

(2) [strict] IDIOMS > TLVS > VAVS > RVS [liberal]

An additional finding from the literature review on Turkish noun incorporation is the ongoing debate surrounding the reduced discourse referentiality of incorporated nouns, as exemplified in (3) (adapted from Kılıçaslan, 1998: 89; Erguvanlı, 1984: 23; and Bliss, 2004: 24, respectively; emphasis in bold added).

(3) a. Ahmet göl-de **balık** tut-tu.
Ahmet lake-LOC fish catch-PST
??Onu$_i$/??Onları$_i$ akşam yemeğ-i-ne pişir-ecek.
it-ACC it-PL-ACC evening meal-POSS.3SG-DAT cook-FUT
'Ahmet did **fish$_i$**-catching in the lake. He will cook ??**it$_i$**/??**them$_i$** for the dinner.'

b. Ahmet kaç gün-dür **resim$_i$** yap-ıyor-du.
Ahmet how.many day-ADV picture make-IMP-PST
Nihayet ***pro$_i$*/*onu$_i$** bitir-di.
finally pro/it-ACC finish-PST
'Ahmet was **picture$_i$**-painting for days. He finally finished **it$_i$.**'

c. Nurten **muz$_i$** al-dı. **On-u$_i$/On-lar-ı$_i$** buzdolabın-a koy-du.
Nurten banana buy-PST iT-ACC it-PL-ACC refrigerator-DAT put-PST
'Nurten bought **banana(s)$_i$**. She put **it$_i$/them$_i$** in the refrigerator.'

This debate leads to the second goal of this dissertation, which is tied to the empirical desideratum. It aims to contribute, both theoretically and empirically, to the ongoing debate on whether Turkish bare nouns in contexts with regular verbs introduce discourse referents that serve as antecedents for subsequent pronominal uptake. In this context, I contend that, in the realm of noun incorporation, although accessibility and discourse transparency are related concepts, they may yield different predictions regarding the anaphoric potential of bare nouns or incorporated nouns. As a result of this examination, I formulate the following hypotheses, as depicted in (4).

(4) a. The discourse opacity hypothesis
Bare nouns do not allow anaphoric uptake.

b. The discourse transparency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora to the same extent as their indefinite counterparts.

c. The discourse translucency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora, albeit not to the same extent as their indefinite counterparts.

d. The discourse accessibility hypothesis
Bare nouns allow anaphoric uptake only through low accessibility-marking expressions, such as definite descriptions.

These hypotheses stand in complementary distribution and constitute the cornerstone for the empirical investigation of the anaphoric potential of bare nouns in Turkish, which represents the first in-depth study on this subject. The results reveal that Turkish bare nouns exhibit properties of discourse translucency, thereby corroborating the discourse translucency hypothesis and challenging previous assumptions in the literature.

The third goal pursued in this dissertation involves examining the interplay between nominal and verbal parameters that contribute to the anaphoric potential of bare nouns in Turkish. Previous investigations have highlighted the influence of verb types on the

anaphoric potential of such nouns, suggesting that under certain circumstances bare nouns exhibit reduced discourse referentiality. In light of this, I delve into the topic of affectedness to scrutinize the verbal parameters of event participants. I predict that depending on the event type, the event participant of the bare noun is more or less affected and therefore more or less suited to subsequent anaphoric uptake. I call this "the affectedness hypothesis", as shown in (5).

(5) The affectedness hypothesis

> The anaphoric potential of a bare noun depends on the affectedness of the corresponding theme in the event. The more affected a theme participant is in an event, the more suitable it is for subsequent anaphoric uptake.

In particular, I theoretically and empirically show that bare nouns in combination with creation verbs, as opposed to usage verbs, result in a higher degree of affectedness for the event participants of the bare nouns, rendering them better suited to subsequent anaphoric uptake.

Based on this original finding, I propose a modification of Krifka & Modarresi's (2016) DRT account. I argue that affectedness represents a degree of change along a scale that can be measured in terms of the result state of the theme participant. Therefore, I implement a scale argument, in addition to the event argument, distinguishing the source state and final state of the theme participant. For usage events, I argue that the source state and the final state of the theme participant remain unchanged. In contrast, for creation events, I assume that the final state represents the affected theme participant, thereby introducing a "discourse referent of result" for it. In other words, abstraction ensures that in creation events, the antecedent represents the result argument on the scale, whereas in usage events, the antecedent is selected from among any sub-event arguments, without specifying for the source state or the result state.

Altogether, the three goals pursued in this dissertation address various aspects relating to bare nouns in incorporation structures. On the one hand, they demonstrate that bare nouns in combination with different verb types cannot be argued to be solely subject to the same analysis. On the other hand, they not only show that Turkish bare nouns in combination with regular verbs exhibit properties of discourse translucency, but also

demonstrate that their discourse translucent behavior depends on the event type they occur in.

1.2 Preliminary facts about Turkish

In this section, I briefly summarize key facts about the Turkish language, as it serves as the primary focus of the investigation. The preliminary overview sets the stage for a detailed analysis within the study.

Turkish has a nominative-accusative case system in which subjects are marked with the nominative (null morphology) and direct objects are marked with the accusative case. However, accusative case morphology does not always appear on the object. Consider the examples in (6) (taken from von Heusinger & Kornfilt, 2005: 5).

(6) a. Ben kitab-ı oku-du-m. definite
I book-ACC read-PST-1SG
'I read the book.'

b. Ben bir kitab-ı oku-du-m. specific indefinite
I a book-ACC read-PST-1SG
'I read a certain book.'

c. Ben bir kitap oku-du-m. non-specific indefinite
I a book read-PST-1SG
'I read a book.'

d. Ben kitap oku-du-m. bare noun
I book read-PST-1SG
'I did book-reading.'

Turkish has no definite article, but it does have an indefinite article in the form of the numeral *bir* 'one'. Thus, accusative case morphology is not just a structural case marker, but also a specificity marker, as the contrast between (6b) and (6c) shows (von Heusinger & Kornfilt, 2005). This morpho-syntactic contrast is an instance of Differential Object Marking (DOM), which is a reflection of specificity in Turkish, rather than of definiteness, since accusative case can be combined with the indefinite article (Lewis, 1967; Sezer, 1972; Johanson, 1977; Erguvanlı, 1984; Dede, 1986; Kornfilt, 1997; Enç, 1991; von Heusinger & Kornfilt, 2005; Kornfilt, 2020; among

others). In fact, the definiteness and referentiality of NPs are expressed by a variety of strategies in Turkish, namely morphological marking, stress, word order and context, among which there is an intricate interplay (Erguvanlı, 1984). This means that there is not necessarily a one-to-one mapping between morphological marking and semantic interpretation. Consider the Referentiality Hierarchy in Table 1.

Table 1. Referentiality Hierarchy for Turkish (Erguvanlı,1984: 18).

Grammatical function	**Referential**			**Non-referential**
	Definite	Indefinite		
		Specific	Non-specific	
Subject				
singular	*-Ø*	*bir*	*bir*	*-Ø*
plural	*-lAr*			*-lAr*
Object				
singular	*-(y)I*	*bir* NP*-(y)I*	*bir* NP*(-(y)I)*	*-Ø*
plural	*-lAr-(y)I*			*-lAr-(y)I*

Table 1 shows that the subject has no overt case marking, while the grammatical role of the object is signaled by morphological case marking. An object NP that is not preceded by an indefinite article and not overtly marked for case is assumed to be non-referential, as in (6d), which has led many researchers to argue that it undergoes object incorporation into the verb. A subject NP not preceded by an indefinite article is either definite or non-referential. This ambiguity is resolved by stress or word order, i.e., sentence-initial subjects have a definite reading, while immediately preverbal subjects have a non-referential reading and are argued to undergo subject incorporation (Öztürk, 2005a, 2009; Kornfilt, 2003; Kuribayashi, 2016). As a pro-drop language, Turkish permits the omission of subjects, with the choice between overt and covert subjects being determined by the discourse-pragmatic context (Enç, 1986; Turan, 1996). In addition to subject drop, Turkish also allows for the omission of objects. However, while covert subjects are typically licensed by agreement on the verb, covert objects are not (Kornfilt, 1984).

1.3 Remarks on terminology and conventions

Before delving into further details about the structure of this dissertation, I introduce some of the terminology employed in the discussion.

True incorporation versus pseudo-incorporation. Since Massam (2001) introduced the term "pseudo-noun incorporation", a distinction has been drawn between true and pseudo-incorporation. The former involves compounding, where N and V serve as sisters to form a V, while the latter includes NP and V as sisters forming a V′ or vP. The term "true incorporation" is often used in the literature as a synonym for "noun incorporation" or "object incorporation". On the other hand, the term "pseudo-incorporation" is sometimes used interchangeably with "quasi-incorporation" or "semantic incorporation". Despite this distinction, the semantic characterization of true incorporation and pseudo-incorporation has often unified the two phenomena, relying solely on hallmarks such as name-worthiness, narrow scope behavior, number neutrality and reduced discourse referentiality. In light of this, the term "semantic incorporation" has also been used. In this dissertation, I will consider Turkish bare nouns as semantically incorporated without delving into the discussion of their morpho-syntactic status. Additionally, I will use the general term "incorporation" or "incorporated" where it is not relevant to differentiate between true incorporation and pseudo-incorporation.

Bare nouns versus regular indefinites. The term "bare noun" is used to refer to nouns that appear without determiners, usually lacking explicit marking for definiteness and number, but sometimes bearing marking for case. However, throughout this dissertation, I will use the term "bare noun" for determinerless and caseless direct objects in Turkish, particularly in combination with regular verbs like *Kitap okudum* 'I read book'. The term "regular indefinite" is used to refer to non-specific indefinites like *Bir kitap okudum* 'I read a book'. Thus, regular indefinites serve as the caseless indefinite counterparts of bare nouns in Turkish, which are therefore sometimes referred to as "weak indefinites" (Özge et al., 2016).

Accessibility versus discourse translucency. The terms "accessibility" and "discourse translucency" are related concepts often employed generally within the context of discourse referentiality and anaphoricity. In this dissertation, a broader understanding of the term "accessibility" is assumed, referring to the ease with which referential expressions can be connected to their antecedents or the entities they refer to. In particular, accessibility is regarded as a parameter for identifying prominent entities in discourse. In this context, unstressed personal pronouns or zero forms are assumed to be used to refer to the most accessible entity, whereas more specified expressions, like full descriptive terms, are needed to refer to less accessible entities (Ariel, 1990).
The notion of discourse translucency is employed within the context of Discourse Representation Theory (DRT), referring to referential expressions that introduce less accessible discourse referents (or thematic arguments) into the discourse (Farkas & de Swart, 2003). In this dissertation, I argue that while discourse translucency and accessibility are related, they are distinct notions, predicting opposing anaphoric behaviors concerning weak referential expressions.

Finally, regarding notation, I use a hash mark (#) to indicate unacceptability resulting from semantic violations, such as agreement violations or world knowledge conflicts, and an asterisk (*) to indicate ungrammaticality due to strict syntactic violations. One question mark (?) is utilized when the construction is dubious or marginal and two question marks (??) are reserved for cases where the construction is even less acceptable.

1.4 Outline of the dissertation

The structure of the dissertation follows the research goals I have outlined above.
Chapter 2 gives a cross-linguistic overview of true incorporation and pseudo-incorporation. This chapter mirrors the chronological development of research on noun incorporation, starting with the discussion as to whether noun incorporation belongs to morphology or syntax or to both. It is comprised of four sections. Section 2.1 provides an overview of the notion of true incorporation. In particular, I discuss three different types of approaches, namely the syntactic, the lexicalist and the semantic

approach. In section 2.2, I review the literature on pseudo-incorporation and discuss its morpho-syntax and semantics, as well as cross-linguistically shared and variable properties. In section 2.3, I provide an intermediate discussion of the data presented. In section 2.4, I present various approaches to noun incorporation in Turkish. Specifically, I review the literature on the division between approaches that fall within the true incorporation account (section 2.4.1), the pseudo-incorporation account (section 2.4.2), and the adhesion account (section 2.4.3). Section 2.4.4 discusses the accounts presented, while section 2.4.5 presents evidence for the assumption that bare nouns in idioms exhibit a tight bond with the verb, adhering strictly to the properties of true incorporation, whereas bare nouns in combination with regular verbs have a looser bond, indicating less strict adherence to these properties.

In Chapter 3, I investigate the discourse-semantic properties of number neutrality and discourse transparency from a theoretical and empirical perspective. First, in section 3.1, I discuss the notions of accessibility and discourse transparency, as these notions seem to be related to each other, but evoke different hypotheses with regard to the anaphoric uptake of bare nouns or incorporated nouns. In section 3.2, I present four different DRT approaches to the anaphoric potential of incorporated nouns. In section 3.3, I discuss these accounts and in section 3.4, I present empirical studies on the anaphoric potential of bare nouns in Turkish. Section 3.5 concludes the chapter.

In chapter 4, I present another experiment on the interaction of accessibility and affectedness of bare nouns in Turkish. Section 4.1 provides a brief overview of different approaches to affectedness in the literature. Section 4.2 discusses affectedness and direct object realization in Turkish. Section 4.3 discusses three different verb types that do not pass the classical affectedness tests. In section 4.4, I provide an intermediate discussion on the various approaches to affectedness, leading to the formulation of the affectedness hypothesis. Section 4.5 presents my empirical studies on the interaction of nominal and verbal parameters with the anaphoric potential of Turkish bare nouns. In section 4.6, I present an original DRT account of the anaphoric potential of bare nouns including parameters for different event types.

Finally, in chapter 5, I draw the main conclusions from the research presented in this dissertation and discuss further ideas for future research.

2 True incorporation and pseudo-incorporation

The primary aim of this chapter is to provide a comprehensive overview of the fundamental concepts of true incorporation and pseudo-incorporation. The secondary objective is to demonstrate that (i) diverse explanations exist in the literature for both frameworks concerning Turkish bare nouns in general, and (ii) depending on the properties under consideration, a plausible argument can be made for distinguishing between bare nouns in Turkish based on their environment.

The structure of the chapter is as follows. Section 2.1 provides the theoretical background on one type of object incorporation known as "true incorporation". This section is divided into four subsections, with the first three discussing the lexical, syntactic, and semantic approaches. Section 2.1.4 touches on the general properties of incorporated nouns. Section 2.2 introduces theoretical assumptions about another type of object incorporation, referred to as "pseudo-incorporation". Here, I explore the similarities and differences between true incorporation and pseudo-incorporation, presenting the morphosyntactic properties of pseudo-incorporated nouns in section 2.2.1, and their semantics in section 2.2.2. Subsequent sections (2.2.3 and 2.2.4) focus on essential properties of pseudo-incorporated nouns, followed by an intermediate discussion in section 2.3. Section 2.4 delves into various accounts of Turkish bare nouns in the literature. Section 2.4.1 and 2.4.2 discuss accounts that treat Turkish bare nouns as truly incorporated versus pseudo-incorporated objects, respectively, while section 2.4.3 presents the adhesion account as a departure from these approaches. In section 2.4.4, I briefly examine these accounts, and the chapter concludes in section 2.4.5 by proposing that bare nouns in idiom formation exhibit a tight bond with the verb, adhering strictly to the properties of true incorporation. In contrast, bare nouns in combination with regular verbs have a looser bond, or less strict adherence to these properties, with light verbs falling in between the two poles.

2.1 True incorporation

Noun incorporation (NI) or true incorporation (TI) is a morpho-syntactic process in which a nominal, usually an object, incorporates into a verb, forming a complex verb or predicate (Massam, 2001, 2017). The phenomenon of noun incorporation[1] has been under investigation since the beginning of the 20th century (Kroeber, 1909, 1911; Sapir, 1911) and has garnered substantial attention since the early eighties (Sadock, 1980, 1985; Mithun, 1984; Baker, 1988). The debate between Kroeber (1909, 1911) and Sapir (1911) illustrates that the phenomenon of object incorporation has been controversial from early on, particularly regarding the assignment of noun incorporation to either morphology, syntax or both (Dahl, 2004; Haugen, 2008, 2015; Barrie & Mathieu, 2016). Whereas for Kroeber (1909) noun incorporation is "the combination into one word of the noun and the verb functioning as the predicate of a sentence" (as cited in Sapir, 1911: 254), Sapir (1911: 257) defines it as "the process of compounding a noun stem with a verb […] no matter what the syntactic function of the noun logically is". Thus, for Sapir (1911) noun incorporation is clearly a morphological process that should be treated in isolation from syntax. Sapir (1911: 257) exemplifies his view with respect to the difference between the English sentence 'I write songs' and the noun-verb compound 'I song-write'. The latter case is a compositional replacement for the former, which is a syntactic phenomenon. According to Sapir (1911: 257) the "sacrifice of the syntax to morphology" is a tendency frequently observed in many Native American languages. To elucidate the rationale behind noun incorporation, Sapir (1911: 258) provides the following example in (7) from Nahuatl (Uto-Aztecan).

(7) a. ni-c-qua in nacatl
I-it-eat the flesh
'I eat the flesh.'

[1] The term "incorporative procedure" (originally "einverleibend" in German) was initially introduced by von Humboldt (1836/1988) in the context of polysynthetic languages. In these languages, words are constructed with numerous morphemes to form a sentence, as in the following example from the Mexican Language *ni-tla-qua* 'I eat something.' (taken from von Humboldt, 1988: 130).

b. ni-nica-qua
I-flesh-eat
'I eat flesh'

Sapir (1911: 259) describes the non-incorporating verb in (7a) as of "particular type", i.e., "predicating a single act at one point of time", and the incorporating one in (7b) as of "general type", i.e., "denoting a permanent or general activity".

As noted by Haugen (2008: 89), the discussion between Kroeber (1909, 1911) and Sapir (1911) is "not limited to the compounding word formations found with Noun Incorporation". It is part of a broader theoretical concern regarding the mechanisms of denominal verb formation, leading to the subsequent division into the "lexicalist" (i.e., "Sapirean") and the "syntactic" (i.e., "neo-Kroeberian") approaches. These two perspectives will be closely examined in the following sections, 2.1.1 and 2.1.2, respectively.

2.1.1 The lexicalist approach

Advocates of the lexicalist approach consider incorporation as a derivational process, wherein a noun and a verb merge to create a new verb in the lexicon (Mithun, 1984; di Sciullo & Williams, 1987; Rosen, 1989; Anderson, 1992, 2000; among others). According to this perspective, the noun is not treated as a separate part of the verb at a syntactic level, and it does not serve as the direct object of the clause.

Mithun (1984: 847) characterizes noun incorporation as "a solidly morphological device that derives lexical items, not sentences". She establishes a classification of four different types of incorporated nouns that occur in the world's (polysynthetic) languages. She suggests that these types operate within an implicational hierarchy, as shown in (8) (adapted from Mithun, 1984: 890).

(8) Implicational Incorporation Hierarchy
TYPE IV > TYPE III > TYPE II > TYPE I

Therefore, if languages exhibit Type IV noun incorporation, they are also expected to have Type III; languages with Type III should also have Type II, and so forth. Consequently, Type IV should only occur in languages that also feature noun

incorporation of Types III, II and I. According to Mithun (1984: 847) these types "suggest a path along which incorporation develops historically".[2]

Type I is called "lexical compounding".[3] Mithun (1984) describes it as an intransitive predicate denoting a unitary concept. The incorporated noun "loses its individual salience both semantically and syntactically. It no longer refers to a specific entity; instead, it simply narrows the scope of the V[erb]" (Mithun, 1984: 856). An incorporated noun of this type forms a close tie with the verb, resulting in a compound that is deemed name-worthy. This implies that it typically denotes an institutionalized, habitual, recognizable and familiar state or activity. Examples of Type I from Mokilese (taken from Mithun, 1984: 849; the example is attributed to Harrison, 1976) and English (taken from Mithun, 1984: 848) are given in (9) and (10), respectively.

(9) a. Ngoah kohkoa oaring-kai.
I grind coconut-these
'I am grinding these coconuts.'

b. Ngoah ko oaring.
I grind coconut
'I am coconut-grinding.'

(10) a. He is out picking berries.

b. He is out berry-picking.

Whereas the incorporated objects *coconut* and *berry* in (9b) and (10b) are non-referential and non-individuated, and thus do not refer to any specific coconuts or berries, their non-incorporated counterparts (9a) and (10a) are referential objects that refer to individuated entities. According to Mithun (1984) the non-referential or generic character of incorporated nouns is reflected in their inability to establish discourse referents for subsequent pronominal uptake. Consider the following example in (11) from Mohawk (taken from Mithun, 1984: 871; emphasis in bold added).

[2] See Dahl (2004) and Haugen (2008) for arguments against Mithun's implicational hierarchy.

[3] Mithun (1984: 848) also points out that lexical compounding involves cross-categorial compounding, e.g. noun (N) + N > N; verb (V) + V > V and also V + adjective (A) > V; V + N > V etc. She emphasizes that a compounding language does not necessarily exhibit all possible combinations, but may permit a number of types of compounds, like English or Turkish, N + N > N; N + V > N; N + V > V; A + N > N; N + A > A and so forth.

(11) Wa'-k-**ahy**-ák-ha-'. Iah árok te-yo-**hy**-á:ri.
PST-I-berry-pick-go.to-PUNC not yet DU-it-berry-ripe
'I went **berry**-picking. They are not **berry**-ripe yet.'
('I went berry-picking, but they weren't ripe yet.')

In (11), *-ahy-* 'berry' is introduced as part of the lexicalized Type I compound, and therefore it does not introduce a discourse referent. This is evident from the necessity to repeat the nominal stem -(*a*)*hy*- in the subsequent clause.

Mithun (1984) suggests that there are two language-specific peculiarities in Type I incorporating languages, such as "composition by juxtaposition"[4], whereby the verb and the noun occur as separate phonological words, as in (9), and "morphological compounding", where the formal bond between the verb and the incorporated noun is much tighter than in languages like Mokilese. These compounds are considered single words and are often subject to word-internal phonological processes (Mithun, 1984: 854), as illustrated in (11). Mithun (1984) states that detransitivization is another indicator of the tight bond between the verb and the incorporated object, whereby the compound functions as an intransitive predicate. This pattern typically occurs in ergative languages, where subjects of transitive constructions are marked for ergative case, while subjects of intransitive sentences appear in the absolutive case. Compare the case marking of the subjects in (12) from Tongan, an Oceanic language (taken from Mithun, 1984: 851; the example is attributed to Churchward, 1953; emphasis in bold added).

(12) a. Na'e inu 'a e kavá **'e** Sione.
PST drink ABS CONN kava ERG John
'John drank the kava.'

b. Na'e inu kava **'a** Sione.
PST drink kava ABS John
'John kava-drank.'

[4] Gerdts (1998: 94) regards composition by juxtaposition as a process "very much like", but not equivalent to noun incorporation. Therefore, she terms it "noun stripping" and thus differentiates it from true incorporation, where the noun and the verb form a single word. She admits that noun stripping can be seen as "a precursor of noun incorporation", and can develop into incorporation.

In the non-incorporated construction in (12a), the subject occurs in the ergative case, whereas the incorporated construction in (12b) contains an absolutive-marked subject. Type II is called "manipulation of case" and is characterized as a "natural extension of Type I" (Mithun, 1984: 859). In both Type I and Type II, the incorporated noun forms a unit with the verb it qualifies, and the noun loses its syntactic status as an argument of the clause, and hence is unmarked for definiteness, number and case. While Type I lowers the valence of the verb, deriving an intransitive predicate from a transitive one, incorporated objects of Type II form a transitive complex with the verb, advancing an (oblique) argument into the case-marked position of the object. The examples from Yucatec (Mayan) in (13) (taken from Mithun, 1984: 857), illustrate this type of noun incorporation.

(13) a. k-in-č'ak-Ø-k **če'** ičil in-kool.
INCOMP-I-chop-it-IMP tree in my-cornfield
'I chop the tree in my cornfield.'

b. k-in-č'ak-**če'**-t-ik in-kool.
INCOMP-I-chop-tree-TR-IMP my-cornfield
'I tree-chop my cornfield.' ('I clear my cornfield.)

In the non-incorporated construction in (13a), the noun *če'* 'tree' is the direct object of the verb stem *č'ak* 'chop'. However, in (13b), *če'* 'tree' is incorporated in the transitive verbal complex marked by the suffix *-t*, the preposition *ičil* 'in' is lost and *in kool* 'my cornfield' becomes the direct object. With the omission of the preposition, the cornfield is "affected" in a way that it is not in (13a). Mithun (1994) claims that this type of incorporation is also commonly used with nouns referring to body parts (i.e., *back-pain*, *face-wash*, *foot-hit*).

Type III of noun incorporation, "the manipulation of discourse structure", is an additional strategy for backgrounding known or incidental information (Mithun, 1984: 859). While all three types have the purpose of backgrounding the incorporated noun, Type I reduces the prominence of incorporated nouns within the verb, Type II within the clause and Type III within a particular discourse context (Mithun, 1984: 862). An example is given in (14) from Huauhtla Nahuatl, an Uto-Aztecan language spoken in Hidalgo, Mexico (taken from Mithun, 1984: 860, the example is attributed to Merlan, 1976; emphasis in bold added).

(14) A: askeman ti-'-kwa **nakatl**.
never you-it-eat meat
'You never eat meat.'

B: na' ipanima ni-**naka-**kwa.
I always I-meat-eat
'I eat it (meat) all the time.'

In this turn-taking context the non-incorporated object *nakatl* 'meat' is introduced as a new discourse referent by speaker A. However, in speaker B's reply, the object is "backgrounded" and therefore incorporated, as it has already been introduced by speaker A in the previous discourse (see also Mithun, 1986).[5] Another example, from Siberian Koryak, illustrates the backgrounding purpose in a narration context (15) (taken from Mithun, 1984: 862, emphasis in bold added).

(15) wŭ́tču iñínñin **yúñı** qulaívun. mal-**yúñı**.
this.time.only such whale it.comes good-whale
ga-**yúñy-upényıl̥enau**.
they-whale-attacked
'This is the first time that such a whale come near us. It is a good one (whale). They attacked it (the whale).'

The examples in (14) and (15) illustrate that new or significant information is "foregrounded" in such a way that the objects appear as independent elements, whereas known or incidental information is "backgrounded" through the incorporation of the relevant object. According to Mithun (1994), this type of noun incorporation is usually highly productive, since many different nouns can represent established information.

Finally, in Mithun's categorization, Type IV is referred to as "classificatory noun incorporation", this resembles the Type II incorporating construction but is characterized by the semantic relation between the incorporated noun and the direct object. This construction is also known as "doubling" (Baker, 1988; Rosen, 1989; Chung & Ladusaw, 2004; Haugen, 2008; among others). Consider the example in (16),

[5] Merlan (1976: 184) quotes many examples from Huauhtla Nahuatl like the one in (14) and claims that "incorporation serves to maintain definiteness of the discourse referent by signaling coreferentiality with a previously occurring NP adjunct". She calls this type of incorporation "contextual" or "discourse-determined" incorporation.

from Gunwinggu, an Australian language of Western Arnhem Land (taken from Mithun, 1984: 867, emphasis in bold added).

(16) bene-**dulg**-naŋ **mangaralaljmayn**.
they.two-tree-saw cashew.nut
'They tree-saw cashew.' ('They saw a cashew tree.')

The compound stem, which describes the event of *tree-seeing* can be followed by an independent object *cashew*, which has a more specific lexical meaning, and thus concretizes the argument implied by the incorporated noun. However, Mithun (1984) provides another example from Mohawk in (17) (taken from Mithun, 1984: 870; emphasis in bold added), in which the incorporated noun is accompanied by an independent NP without a morphological head (known as "stranding"; see Baker, 1988; Rosen, 1989).

(17) **Kanekwarúnyu** wa'k-akya'tawi'tsher-ú:ni.
it.dotted.DIST PST.I-dress-make
'I dress-made a polka-dotted one.' ('I made a polka-dotted dress.')

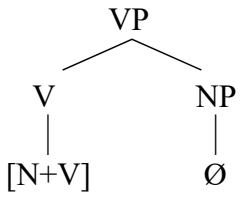
Mithun (1984) acknowledges that constructions of this kind may raise questions about whether noun incorporation is a syntactic rather than a lexical process. Baker (1988) suggests a syntactic analysis to account for these properties.

Among the properties of noun incorporation identified by Mithun, she observed that incorporated nouns are unmarked for case, number or definiteness. They do not refer to specific entities and do not establish discourse referents. Mithun also found that the entire noun-verb complex refers to name-worthy activities or states and is often associated with an idiomatic meaning. Additionally, she noted that all languages exhibiting noun incorporation also have non-incorporating counterparts, which she refers to as "syntactic paraphrases". These properties have since been considered essential features of object incorporation.

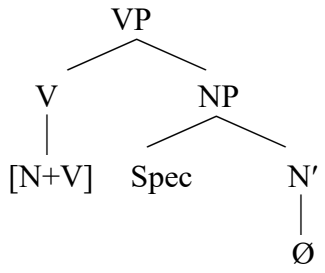
To tease apart structures like those in (16) and (17), Rosen (1989) provides a different classification, assuming that noun incorporation is a morphological process applying in the lexicon, pre-syntactically. She divides noun incorporation cross-linguistically into two fundamentally different types, namely Compound NI and Classifier NI. The former correlates with Mithun's (1984) Types I-III, and the latter with Mithun's Type

IV. According to Rosen (1989: 296), in Compound NI, the noun-verb compound is intransitive, since the process affects the argument structure of the verb (see example (9b)). On the other hand, in Classifier NI, the process does not affect the transitivity of the verb, and therefore the noun-verb complex can co-occur with a direct object argument. Rosen (1989) proposes the following structures to capture the range of possible direct objects following an incorporated noun in (18) (adapted from Rosen, 1989: 297, 298).

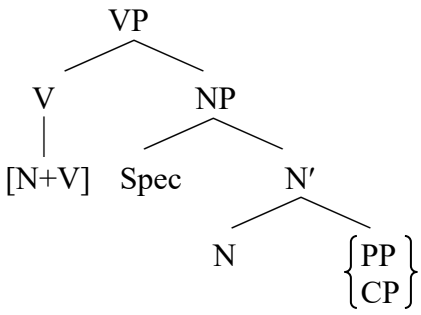
(18) a. Empty NP



b. Stranding



c. Doubling



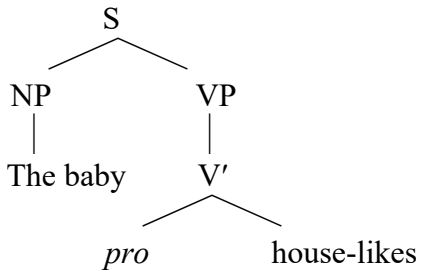
In Classifier NI, the NP can be completely empty (18a), the N or N′ can be empty, which is known as “stranding” (18b), or the entire NP can be filled, which is referred to as “doubling” (18c). “Stranding” refers to the occurrence of determiners, modifiers and possessors outside the noun-verb complex, which are associated with the incorporated noun, without a head noun. Hence, stranded elements are analyzed as modifiers of empty heads (see the example in (17)). An example of doubling was given in (16). Rosen (1989) argues that stranding and doubling do not occur in languages that exhibit Compound NI, as in this type of incorporation the verb becomes intransitive; thus, external objects cannot occur outside the noun-verb complex.

Another lexicalist approach is provided by Di Sciullo & Williams (1987), where incorporated nouns form lexical compounds with the verb resulting in syntactic atoms. According to their view, "the incorporated noun is added to the verb as an act of word formation, governed by the principles of morphology" (Di Sciullo & Williams, 1987: 64). Under the term "qualifier theory", Di Sciullo & Williams (1987) suggest that the incorporated noun functions as a "qualifier" on the theme argument of the verb and does not satisfy the argument structure; this is represented in (19) (adapted from Di Sciullo & Williams, 1987: 64).

(19) house + like (A, Th) → like (A, Th)
|
house

Thus, noun incorporation affects the argument structure of the resulting compound, which is why the internal structure of words is invisible to the syntax, as illustrated in (20) (adapted from van Geenhoven, 1998a: 100).[6]

(20) Qualifier theory



In (20), the syntactic argument position is filled by *pro,* which realizes the thematic role of the transitive verb 'like'. According to van Geenhoven, this structure captures the "atomicity hypothesis" of Di Sciullo & Williams (1987), which "predicts that the syntax of syntactic arguments will be independent of whether or not there is an incorporated noun on the verb" (Di Sciullo & Williams, 1987: 65). Consequently, this analysis posits no syntactic relation between the sentences in (23a) and (23b); this will be discussed below in section 2.1.2.

[6] van Geenhoven (1998a: 100) recognizes an alternative way to depict the syntactic structure of the sentence, suggesting that the VP may not even contain a *pro*, this aligns with Baker's (2009) perspective.

In conclusion, the lexicalist approach to noun incorporation is grounded in the idea that the incorporated noun forms a morphological unit with the verb in the lexicon before syntactic computation. As a result, such accounts do not presume the syntactic independence of incorporated nouns and, thus, may not necessarily account for properties like external modification and referentiality.

2.1.2 The syntactic approach

Proponents of the syntactic approach consider incorporation as an outcome of movement transformations, wherein a head noun incorporates into a verb (Sadock, 1980, 1985, 1986; Baker, 1988).

Sadock (1986) criticizes Mithun's (1984) view, asserting that incorporation is not merely a morphological process. He argues that incorporation, especially in languages like West Greenlandic, involves a syntactic component; this is particularly evident in denominal verb formation, which he considers as an instance of incorporation. Sadock (1980) argues that denominal verbs are syntactically formed through the incorporation of nouns into a verbal head. He supports this argument by pointing out that incorporated nouns can be modified, despite being attached to the verb stem. In doing so, the modifying adjective appears in the instrumental case "the same case that it would have if it were the modifier of a non-incorporated object of a free-standing, formally intransitive verb" (Sadock, 1980: 307), as shown in (21a) and (21b) with non-incorporated and incorporated nouns respectively (taken from Sadock, 1980: 307; emphasis in bold added).

(21) a. Sapannga-mik kusanartu-mik pisivoq.
bead-INSTR beautiful.NOM-INSTR thing-get-IND-3SG
'He bought a beautiful bead.'

b. Kusanartu-mik sapangarsivoq.
beautiful.NOM-INSTR bead-get-IND.3SG
'He bought beautiful bead(s).'

Moreover, Sadock (1980) shows that incorporated nouns in West Greenlandic are discourse transparent, i.e., establish discourse referents that can subsequently be

picked up by personal suffixes, as shown in (22) (adapted from Sadock, 1980: 311; glosses from Van Geenhoven, 1998a; indices and emphasis in bold added).

(22) a. Suulut **timmisartu$_i$**-liur-p-u-q.
Søren.ABS airplane-make-IND-TR-3SG
'Søren made an **airplane$_i$**.

b. Suluusa-qar-p-u-**q$_i$** aquute-qar-llu-**ni$_i$**-lu.
wing-have-IND-TR-3SG rudder-have-INF-4SG-and[7]
'**It$_i$** has wings and **it$_i$** has a rudder.'

Taking into account these properties and several additional factors, Sadock (1985) develops an analysis of noun incorporation known as "autolexical syntax". In this framework, the morphological structure and the syntactic structure are considered autonomous with the notable observation that "the leaves of syntactic trees need not to correspond to the roots of morphological trees" (Sadock, 1985: 387).

Baker (1988) presents a purely syntactic approach, suggesting that the head of a complement phrase is incorporated into the verbal head, forming a new V^0. In his perspective, incorporated constructions arise from non-incorporated structures with a full-fledged direct object via head-movement. Baker (1988) emphasizes that subjects of transitive clauses cannot undergo incorporation. This is exemplified in (23) from Mohawk (taken from Baker, 1988: 81, 82; some emphasis in bold added, some in original).

(23) a. Yao-wir-aʔa ye-**nuhweʔ**-a ne ka-**nuhs**-aʔ.
PRE-baby-SUF 3FS/3N-like-ASP the PRE-house-SUF
'The baby likes the house.'

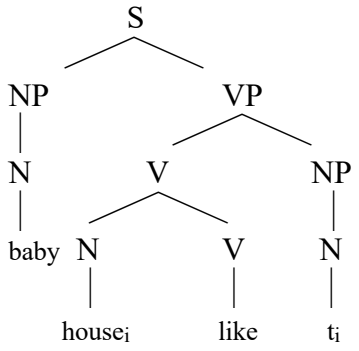
b. Yao-wir-aʔa ye-**nuhs-nuhweʔ**-s.
PRE-baby-SUF 3FS/3N-house-like-ASP
'The baby house-likes.'

c. *Ye-**wir-nuhweʔ**-s ne ka-nuhs-aʔ.
3FS/3N-baby-like the PRE-house-SUF
'Baby-likes the house.'

[7] Note that the fourth person in Greenlandic indicates coreference with the subject of the main clause.

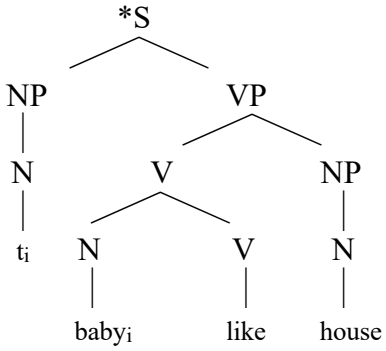
The example in (23a) shows the non-incorporated construction with a full-fledged direct object, while (23b) illustrates the derived incorporated structure of (23a). The example in (23c) demonstrates that subject incorporation is impossible. The corresponding syntactic structures are given in (24) (adapted from Baker, 1988: 83).

(24) a. Object incorporation



'The baby house-likes.'

b. Subject incorporation



*'Baby-likes the house.'

Baker (1988) elucidates that such a movement is permissible only for noun phrases base-generated in object position. This allowance is explained by the fact that their traces are properly governed in accordance with the Empty Category Principle (ECP), in contrast to traces of subjects which cannot be properly governed (i.e., the trace would c-command the head). Baker (1988) argues that this restriction is the fundamental reason why subjects are not permitted to undergo incorporation.[8]

One of the most crucial arguments for Baker's account is based on the "referential transparency" of incorporated nouns in polysynthetic languages (Baker, 1988: 80). This property and the high productivity of noun incorporation in these languages present evidence for the syntactic nature of noun incorporation. Baker further argues that the potential for modification of incorporated nouns serves as an additional argument in favor of syntactic movement. An example from Southern Tiwa is given in (25) (adapted from Baker, 1988: 94; indices and emphasis in bold added).

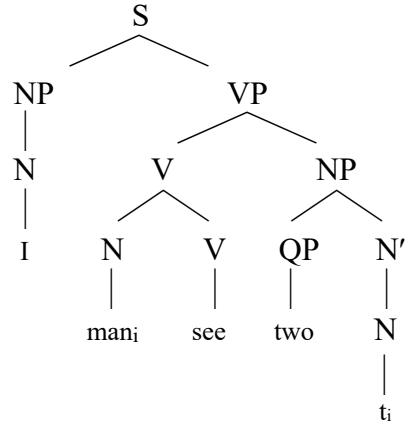
[8] van Geenhoven (1998b) claims that the impossibility of subject incorporation should be explained on semantic grounds. According to her, the reason why subjects can never incorporate follows from the fact that external arguments are not true arguments of the verb. Adopting the approaches of Marantz (1984) and Kratzer (2002), van Geenhoven (1998b: 248) assumes that "the thematic relation "Ag(ent)" is not part of the lexical semantic representation of the verb at all".

(25) a. **Wisi seuan**-in bi-mū-ban.
two man-PL 1SGS-see-PST
'I saw **two men**.'

b. **Wisi t_i** bi-**seuan$_i$**-mū-ban.
two 1SGS:B-man-see-PST
'I saw **two men**.'

The example in (25b) shows that the quantifier *wisi* 'two' remains morphologically outside the verb complex after the head noun has incorporated into the verb. The syntactic structure of (25b) is given in (26) (adapted from Baker, 1988: 95).

(26) Determiner stranding



The structure in (26) illustrates that the trace left in the embedded NP shows the original position of the incorporated nominal, which "strands" its external modifiers, in this case the quantifier phrase, after moving up the tree.

In a more recent examination, Baker (2009) reviews various different syntactic alternatives to his head-movement analysis (Massam, 2001 for Niuean; van Geenhoven, 1998a for West Greenlandic; Koopman & Szabolcsi, 2000 for Hungarian and Dutch) and argues that his head-movement analysis still remains relevant with respect to Mapudungun and Mohawk. He emphasizes that language-specific characteristics lead to different syntactic analyses, allowing them to coexist.

In summary, the syntactic approach to noun incorporation aims to explain incorporated structures as being derived from their non-incorporated counterparts through movement. This perspective also accommodates the potential for external modification and discourse referentiality of incorporated nouns, which sets it apart

from the lexicalist approach. It is worth noting that the lexicalist versus syntactic debate has diminished in prominence, particularly with the increased focus on the semantic view following Bittner's (1994) and van Geenhoven's (1998a) investigations into noun incorporation in West Greenlandic. A more detailed exploration of this semantic perspective will be undertaken in the subsequent section 2.1.3.

2.1.3 The semantic approach

As previously mentioned, Sadock (1980) and Mithun (1984) identified semantic properties of incorporated nouns, such as name-worthiness, number neutrality and discourse transparency. However, it was only through the formal semantic investigations of Bittner (1994) and van Geenhoven (1998a) that these properties were explored in a more structured and analytical manner. Prior to these studies, the observations of these properties were primarily made from a descriptive perspective (Borik & Gehrke, 2015).

Following Baker's (1988) syntactic approach, Bittner (1994) argues for a head-movement analysis of incorporated nouns in West Greenlandic. From a semantic perspective, Bittner suggests that the incorporated noun *aalagar* 'letter' in (27) (taken from Bittner, 1994: 119) is interpreted as a predicative modifier of semantic type ⟨⟨e,t⟩,⟨e,t⟩⟩. It applies to the two-place predicate *get* without changing its argument structure. To derive the number neutrality of incorporated nouns, Bittner (1994) posits a covert "pluralization operator" on the residual NP that ensures the pluralization of the head noun during the course of derivation.

(27) Juuna t_i aalagar$_i$-si-v-u-q.
Juuna letter-get-IND-INTR-3SG
(i) 'Juuna got a letter (or some letters).'
(ii) *'Juuna got the letter (or the letters).'

Bittner (1994) observes that "neither the incorporated noun nor its instrumental residue can take scope over any operator which c-commands the host verb at s-structure […]. Furthermore, neither of these nominal elements can be interpreted as definite" (Bittner, 1994: 118). The example in (28) (adapted from Bittner, 1994: 118) illustrates the narrow scope behavior of a non-modified incorporated noun with respect to negation.

(28) Juuna Kaali-mit t_i allagar$_i$-si-nngi-l-a-q.
Juuna Kaali-ABL letter-get-NEG-IND-TR-3SG
(i) 'It is not the case that Juuna got a letter/letters from Kaali.' ¬ > ∃
(ii) *'There is/are a letter/letters from Kaali that Juuna did not get.'*∃ > ¬

Bittner's observation that West Greenlandic incorporated nouns take narrow scope with respect to negation also holds if a noun is modified by means of external instrumental modifiers, as shown in (29) (taken from Bittner, 1994: 118).

(29) Juuna Kaali-mit t_i amirlasuu-nik allagar$_i$-si-nngi-l-a-q.
Juuna Kaali-ABL many-PL.INST letter-get-NEG-IND-TR-3SG
(i) 'It is not the case that Juuna got many letters from Kaali.' ¬ > ∃
(ii) *'There are many letters from Kaali that Juuna did not get.' *∃ > ¬

In simple terms and without delving into intricate technical details, Bittner (2001) assumes that the incorporated noun, denoting a property, combines with the unsaturated internal argument of the verb. The resulting type mismatch is resolved by existential closure, a type of compositional bridging mechanism that saturates the internal argument position of the verb and ensures that the incorporated object has narrow scope.

In contrast to Bittner (1994), van Geenhoven (1995, 1998a) argues that noun incorporation in West Greenlandic is not derived via head-movement; rather it is a base-generated configuration.[9] In her semantic analysis, she proposes that incorporated nouns (and narrow scope indefinites) in West Greenlandic undergo "semantic incorporation".[10] Consider the examples in (30) (adapted from van Geenhoven, 1998b: 232; emphasis in bold added).

(30) a. Nuka-p iipili neri-v-**a**-a.
Nuka-ERG apple.ABS eat-IND-TR-3SG.3SG
'Nuka ate the/a particular apple.'

[9] See van Geenhoven (1998a) for arguments against Baker's (1988) head-incorporation account of for West Greenlandic.

[10] The term "semantic incorporation" is frequently used interchangeably with "pseudo-incorporation" (see also Özge, 2011 for Turkish).

b. Nuka iipili-tur-p-**u**-q.
Nuka.ABS apple-eat-IND-INTR-3SG
'Nuka ate an apple/apples.'

The examples in (30) show that incorporation in West Greenlandic leads to detransitivization (30b), which is morphologically marked on the verbal element.[11] However, according to van Geenhoven, the incorporated object is semantically still an argument of the verb, though of a different semantic type than its non-incorporated, full-fledged counterpart. An incorporated object denotes a property P of type ⟨e,t⟩ that combines with an incorporating predicate of type ⟨⟨e,t⟩,⟨e,t⟩⟩, resulting in a predicate of type ⟨e,t⟩. Hence, the property-denoting nominal does not saturate the argument position of the verb, but instead restricts its meaning. Note that van Geenhoven assumes that the verb undergoes type-shifting as otherwise the combination of a property-denoting nominal and a transitive verb would result in a type mismatch. In contrast, a non-incorporated object denotes an individual of semantic type ⟨e⟩ that combines with a transitive verb of type ⟨e,⟨e,t⟩ saturating the argument position of the verb. As a result, van Geenhoven (1998a) proposes different lexical entries for non-incorporating and incorporating verbs, as illustrated in (31) (adapted from van Geenhoven, 1998a: 132).

(31) a. $\lambda w_s \lambda y_e \lambda x_e$ [$Verb_w(x,y)$]
applied to (30)a: [eat(nuka,apple)]

b. $\lambda P_{\langle s, \langle e,t\rangle\rangle} \lambda w_s \lambda x_e \exists y$ [$Verb_w(x,y) \wedge P_w(y)$]
applied to (30)b: $\exists y$ [eat(nuka,y) ∧ apple(y)]

As shown in (31b), the incorporating verb introduces both a variable associated with an internal argument and an existential quantifier that binds that variable providing an existential interpretation of the incorporated noun. The property-denoting nominal is "absorbed by […] [the] verb as the predicate of that verb's internal argument variable"

[11] As evident from the examples in (30), West Greenlandic has two verbs, which express the meaning 'to eat'. One is the non-incorporating verb *neri-* 'to eat', illustrated in (30a). The other one is the incorporating verb *-tur-* 'to consume', illustrated in (30b), which can mean 'to eat' or 'to drink' depending on the incorporated noun (van Geenhoven, 1998b: 240-243). See Mithun (1984) for examples from other languages containing different verbs for their incorporating and non-incorporating counterparts.

(van Geenhoven, 1998a: 132). Therefore, the semantic head of the noun-incorporating configuration is the verbal predicate rather than the incorporating nominal.

To capture the possibility of external modification, as shown in (32) (taken from van Geenhoven, 1998b: 244; emphasis in bold added), van Geenhoven (1998a, 1988b) analyzes the instrumental constituent *qisummik* 'wooden' as a predicate that is semantically incorporated. This implies that the verb *liur* 'make' not only semantically incorporates the predicate denoted by the incorporated noun, but also includes the instrumental adjective in its meaning. Regarding the example in (32), this means that *qisummik timmisartuliur* 'wooden airplane-make' is interpreted as a complex property, as shown in (33) (taken from van Geenhoven, 1998b: 244; see also van Geenhoven, 1995).

(32) Suulut **qisum-mik** timmisartu-liur-p-u-q.
Søren.ABS wood-INSTR.3SG airplane-make-IND-INTR-3SG
'Søren made a wooden airplane.'

(33) $\lambda x_e \exists y$ [make (x,y) ∧ airplane (y) ∧ wooden (y) ∧ atomic (y)][12]

To account for the discourse transparency of incorporated nouns in West Greenlandic, van Geenhoven (1998a) proposes a dynamic discourse semantic analysis. The uniqueness of her account lies in the premise that it is not the incorporated noun but, rather, the semantically incorporating verb that introduces a new discourse referent.[13] This assumption diverges notably from the Kamp-Heim approach, where new discourse referents are introduced by indefinites, namely nominal expressions. Using the notation of Rooth (1987), van Geenhoven (1998a) proposes the following analysis (35) (adapted from van Geenhoven, 1998a: 189, 190) for the example in (34) (taken from van Geenhoven, 1998a: 189; shortened version of Sadock's example (22); emphasis in bold added).

(34) Suulut timmisartu-**liur**$_i$-p-u-q. Suluusa-qar-p-u-**q**$_i$.
Søren.ABS airplane-make-IND-INTR-3SG wing-have-IND-INTR-3SG
'Søren **made**$_i$ an airplane. **It**$_i$ has wings.'

[12] For technical details of how this complex property is derived, see van Geenhoven (1998b).

[13] See also McNally & van Geenhoven (1998) for a discussion of this issue.

(35) a. $[\![liur_i]\!]$ = {<g x P g′> | ∃y [<x,y> ∈ F(make) ∧ g′ = g ∪ {<i y>} ∧ <g y g′> ∈ P]}

b. $[\![timmisartu]\!]$ = {<g y g′ > | y ∈ F(airplane) ∧ g′ = g}

c. $[\![timmisartu\text{-}liur_i]\!]$ = {<g x g′> | ∃y [<x,y> ∈ F(make) ∧ y ∈ F(airplane) ∧ g′ = g ∪ {<i y>}]}

d. $[\![Suulut\ timmisartu\text{-}liur_i]\!]$ = {<g g′> | ∃y [<s,y> ∈ F(make) ∧ y ∈ F(airplane) ∧ g′ = g ∪ {<i y>}]}

e. $[\![\text{-}q_i]\!]$ = {<g y g′> | g′(i) = y ∧ g = g′}

f. [[(34)]] = {<g g′′> | ∃y ∃z [<s,y> ∈ F(make) ∧ y ∈ F(airplane) ∧ z ∈ F(wing) ∧ <y,z> ∈ F(have) ∧ g′′ = g ∪ {<i y>, <k z>}]}

First, the context change potential for the verb *-liur$_i$-* ‘make’ in (35a) is defined as a set consisting of the quadruples <g x P g′>: an input function g, an object-level variable x, which represents the first argument of the verb, a property-level variable P, which is the second argument of the verb, and an output function g′. The analysis indicates that for each quadruplet there exists an object y that has the property P, to which x stands in the “make-relation”. The output g′ adds a discourse referent to the context by assigning y to the index i on the verb *-liur$_i$-* ‘make’. The meaning of the incorporated noun *timmisartu* ‘airplane’ in (35b) has no context change potential as it does not introduce a discourse referent, and thus the input g and the output g′ are identical.

Second, the incorporating verb combines with the incorporated object as shown in (35c). (35d) represents the context change potential of the first sentence in (34).

Third, the second sentence in (34), which contains a pronominal suffix *-q$_i$,* has the meaning in (35e), which basically states that the agreement morpheme assigns the index i to the object variable y. (35f) represents the meaning of the whole discourse in (34), in which the combination of the two sentences modifies the context in the following way: in the first sentence a new discourse referent y, i.e., an airplane made by *Suulut*, is introduced; in the second sentence this referent is said to have wings. Note that in the second sentence, the noun *suluusa* ‘wing’ is semantically incorporated into the verb *-qar-* ‘have’.

What is crucial in van Geenhoven’s (1998a) analysis is that the incorporated noun retains its number neutrality until the pronominal element is assigned the same index as the incorporating verb (see also van Geenhoven, 2001). Consider the examples in

(36) (taken from van Geenhoven, 1998a: 187, 190; indices and emphasis in bold added).

(36) a. Aani qimmi-**qar$_i$**-p-u-q. Miki-mik
Aani.ABS dog-have-IND-INTR-3SG Miki-INSTR
ati-qar-p-u-**q$_i$**.
name-have-IND-INTR-3SG
'Aani **has$_i$** a dog. **It$_i$** is called Miki.'

b. Aani qimmi-**qar$_i$**-p-u-q. Kusana-q-a-a-**t$_i$**.
Aani.ABS dog-have-IND-INTR-3SG nice.very-be-IND-INTR-3PL
'Aani **has$_i$** dogs. **They$_i$** are very nice.'

The examples illustrate how the singular subject agreement morpheme *-q* in (36a) and the plural pronoun, marked by the subject agreement morpheme *-t* in (36b), establish the singularity and plurality of the arguments of the incorporating verbs, respectively. Similar to van Geenhoven (1998a), Chung & Ladusaw (2004) characterize incorporated nouns in Chamorro as property-denoting. However, unlike her, they do not posit distinct lexical entries for incorporating and non-incorporating verbs. This is because incorporation in Chamorro is constrained to verbs of possession (*gäi-* 'have' and *täi-* 'not have'), which inherently incorporate their objects, as demonstrated in (37) (taken from Chung & Ladusaw, 2004: 107, 108; emphasis in bold added).

(37) a. **Gäi-kareta** si Antonio.
AGR.have-car UNM Antonio
'Antonio has a car.'

b. **Täi-kareta** si Antonio
AGR.not.have-car UNM Antonio
'Antonio doesn't have a car.'

While van Geenhoven (1998a) assumes that the incorporating verb undergoes type-shifting, in order to avoid a type mismatch, Chung & Ladusaw (2004) put forward a new compositional mode called "Restrict", in addition to saturation (function application). The semantic effect is to modify the verbal predicate and thus to restrict the meaning of the complex verb, as in van Geenhoven's (1998a) approach. The operation Restrict combines a property of type ⟨e,t⟩ and a transitive predicate of type ⟨e,⟨e,t⟩⟩, yielding a predicate of type ⟨e,⟨e,t⟩⟩. Thus, "this operation does not reduce

the predicate's degree of unsaturation", as illustrated in (38b) (Chung & Ladusaw, 2004: 107, 108). Next, the individual *si Antonio* in (37a) is composed with the external argument via function application, saturating the argument and thus reducing the predicate's degree of unsaturation by one as in (38c). Finally, to achieve the semantic completeness of the predicate, existential closure is applied as in (38d).[14]

(38) a. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e)] car′ = Restrict
b. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e)] ∧ car′(y)] a
c. $\lambda y Gen_e$ [have′(y)(a)(e)] ∧ car′(y)] = Function application
d. $\exists y Gen_e$ [have′(y)(a)(e) ∧ car′(y)][15]

The compositional process for *täi-* 'not have' in (37b) has a similar outline. Consider the composition in (39) (adapted from Chung & Ladusaw, 2004: 109).

(39) a. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e)] car′
b. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e)] ∧ car′(y)] a
c. $\lambda y Gen_e$ [have′(y)(a)(e)] ∧ car′(y)]
d. $\exists y Gen_e$ [have′(y)(a)(e) ∧ car′(y)] ¬
e. $\neg \exists y Gen_e$ [have′(y)(a)(e) ∧ car′(y)]

The incorporated object *kareta* 'car' is composed with the internal argument of *täi-* 'not have' via Restrict, as illustrated in (39b). The negation applies after the predicate

[14] Modarresi & Simonenko (2007) and Modarresi (2014) adopt this process and call it "quasi-incorporation". The term quasi-incorporation goes back to Hopper & Thompson (1980). They used the term for partially affected objects in Hungarian, as in (1a), in contrast to totally affected ones (1b) (taken from Hopper & Thompson, 1980: 262; emphasis in bold added).

(1) a. János **festék-et** fújt **a fal-ra**.
János paint-OBJ sprayed the wall-on
'János sprayed paint on the wall.'

b. János befújta **a fal-at** **festék-kel**.
János sprayed the wall-ACC paint-with
'János sprayed the wall with paint.'

Note that in (1b) the totally affected object is placed directly after the verb, in the position for "true objects". But the partially affected object in (1a) is placed before the verb, in the position for "indefinite, quasi-incorporated objects" (Hopper & Thompson, 1980: 263).

[15] Note the difference from van Geenhoven's (1998a) approach, where the existential closure of the entity is part of the predicate meaning, ensuing that this entity argument is semantically saturated before composition. Therefore, van Geenhoven proposes a "re-composition" mechanism to allow for further composition of elements that target the incorporated argument, i.e. adjectival modification.

has achieved semantic completeness through existential closure in (39d), as it engages in the semantic composition at the sentential level. Consequently, the incorporated object obligatorily has narrow scope with respect to negation (39e).

The example in (40) (taken from Chung & Ladusaw, 2004: 109; emphasis in bold added) shows that incorporated objects can be doubled in Chamorro (Mithun's Type IV and Rosen's Classifier NI; see section 2.1.1).

(40) Si Carmen gäi-**ga'** **i** **ga'lagu**.
UNM Carmen AGR.have-pet the dog
'Carmen has the dog as pet.'

In this case, the Restrict operation is followed by a further saturation operation, yielding a doubling construction as shown in (41) (adapted from Chung & Ladusaw, 2004: 110; emphasis in bold added).[16]

(41) a. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e)] pet′
b. $\lambda y \lambda x Gen_e$ [have′(y)(x)(e) ∧ pet′(y)] **d**
c. $\lambda x Gen_e$ [have′(**d**)(x)(e) ∧ pet′(**d**)]

The additional object *i ga'lagu* 'the dog' is argued to be a semantic argument, thus reducing the degree of unsaturation by one, as in (41c). Yet, from a syntactic perspective, it does not function as an argument of the verb; instead, it serves as an adjunct (Chung & Ladusaw, 2004: 92). It is crucial to emphasize that Chung & Ladusaw (2004) posit that the success of multiple linking is contingent on predicate restriction preceding saturation. Failure to adhere to this order would result in a type mismatch.

With regard to the discourse contribution of Restrict, Chung & Ladusaw (2004) argue that incorporated nouns in Chamorro do introduce discourse referents through existential closure. For doubling constructions, they assume that the doubled object of the incorporated object introduces a discourse referent via saturation. Consider the

[16] Note the difference from van Geenhoven's approach, where existential closure is coded in the lexical entry of the incorporated verb. According to Chung & Ladusaw (2004) this is why her approach cannot explain cases of doubling, since the internal argument of the verb is saturated before the doubled object can be composed.

examples in (42), in which incorporated objects can serve as antecedents of donkey pronouns (taken from Chung & Ladusaw, 2004: 122; emphasis in bold added).

(42) a. Käda taotao ni gäi-**kareta$_i$** ha-diséseha
each person COMP WH[NOM].AGR.have-car AGR-wish-PROG
na siña ha-bendi ***pro$_i$***.
COMP can AGR-sell pro
'Each person who has a **car$_i$** wishes that he could sell **it$_i$**.'

b. Käda unu ni gäi-**haga$_i$,** siempri
each one COMP WH[NOM].AGR.have-car surely
ha-po'lu nab unita **gui'$_i$**.
AGR-assume COMP AGR-pretty she
'Everyone who has a **daughter$_i$** thinks that **she$_i$** is beautiful.'

As discussed above, the lexicalist and the syntactic approaches describe semantic properties of incorporated nouns from a descriptive standpoint, seeking to derive them from morphological or syntactical operations. In contrast, the semantic approach offers a comprehensive semantic analysis, focusing on the non-argumental status of incorporated nouns and elucidating their scopal and referential properties.
The subsequent section provides a descriptive overview of the properties of incorporated nouns from a cross-linguistic perspective.

2.1.4 Common properties of incorporated nouns

To begin with, previous research has noted that noun incorporation often leads to detransitivization of the predicate (Hopper & Thompson, 1980; Mithun, 1984; among others). Consequently, it has been proposed that incorporated nouns cannot be regarded as independent syntactic arguments, but should instead be viewed as "qualifiers" (Mithun, 1984; Di Sciullo & Williams, 1987), as "classifiers" (Rosen, 1989) or as "modifiers" (Bittner, 1994; van Geenhoven, 1998a; Chung & Ladusaw, 2004; among others). For instance, in West Greenlandic, when a transitive verb incorporates its object, the resulting noun-verb construction exhibits reduced valency. This effect results in distinct case marking patterns and in overt verbal morphology

that signifies verbal intransitivity, as illustrated in West Greenlandic in (43) (adapted from van Geenhoven, 1998a: 14; emphasis in bold added).[17]

(43) a. Angunguu-p aalisagaq neri-v-**a**-a.
Angunguaq-ERG fish.ABS eat-IND-TR-3SG.3SG
'Angunguaq ate the/a particular fish.'

b. Angunguaq aalisaga-tur-p-**u**-q.
Arnajaraq.ABS fish-eat-IND-INTR-3SG
'Angunguaq ate fish.'[18]

The second property pertains to the modification possibilities of incorporated nouns. In West Greenlandic and Mohawk, incorporated nouns can be modified through the use of an adjective. An illustration is given in (44) from West Greenlandic (taken from van Geenhoven, 1998a: 18; emphasis in bold added).

(44) a. Esta **nutaa-mik** **aalisagar-si-v-u-q**.
Esta-ABS fresh-INST.SG fish-get-IND-INTR-3SG
'Esta got (a) fresh fish.'

Furthermore, even in languages where noun incorporation is highly productive, there are conceptual restrictions on its use. Constructions involving noun incorporation typically do not refer to any specific entity, but rather to recognizable or institutionalized activities. These activities are often typical, habitual, unitary and name-worthy (Sapir, 1911; Mithun, 1984; Axelrod, 1990; Mosel & Hovdhaugen, 1992; de Reuse, 1994; Dayal, 2011; Borthen, 2003; Asudeh and Mikkelsen, 2000; Frey, 2015; among others). This is evident in examples such as *coconut-grinding*, *berry-picking* and *tree-chopping* (see (9), (10) and (13)). Additionally, there are lexical restrictions on the types of verbs and nouns suitable for incorporation. Lighter verbs, e.g. 'to be good' or 'to have', are more prone to incorporating a noun compared to verbs that specify particular activities. Given that incorporated nouns often function as

[17] Even though the incorporation construction in (43b) is morphologically intransitive, van Geenhoven (1998a) postulates a semantic incorporation account in which the incorporated object is semantically still an argument of the verb. As discussed in section 2.2.3, an incorporated object in her framework is of type ⟨e,t⟩ and an incorporating verb of type ⟨⟨e,t⟩,⟨e,t⟩⟩, resulting in a VP of type ⟨e,t⟩ when the verb takes the object as its argument. Likewise, Baker (1988: 126) argues that "verbs with incorporated objects in […] Eskimo are morphologically (although not semantically or syntactically) intransitive."

[18] This example is adapted from Krifka (1997: 1) to ensure structural comparability with the example in (43a).

direct objects, verbs with a high impact on their patients, such as ‘to make’ or ‘to eat’, are more likely to incorporate than verbs with lower affectedness, like ‘to look at’ or ‘to hear’ (Mithun, 1984: 863). Regarding nouns, the less specific the meaning of the noun is, the more likely it is to incorporate. For instance, those with less specific meanings are more amenable to incorporation. Thus, inanimate nouns with more generic meanings are often incorporated, while animate nouns and proper names are typically not incorporated (Mithun, 1984; Erguvanlı, 1984).[19] It is worth noting that many incorporating languages tend to incorporate nouns related to body parts (e.g., *face-washing* in (13)) or mental aspects of a person or an animal (Mithun, 1984: 864; see also Bybee, 1985; Dixon & Aikhenvald, 1999).

Another characteristic of incorporated nouns is their lack of marking for case, definiteness and number, as highlighted by Mithun (1984). This absence of marking is attributed to the fact that incorporated nouns function as heads and not as phrases (see sections 2.1.1 and 2.1.2).

From a semantic point of view, it has been observed, that incorporated nouns exhibit weaker discourse referentiality compared to their full-fledged counterparts. As noted by Mithun (1984), incorporated nouns do not refer to specific entities; instead, they serve to qualify the activity denoted by the verb, thereby narrowing its scope (see also Di Sciullo & Williams, 1987). This property typically reflects the inability of the incorporated noun to introduce discourse referents that can be picked up in the subsequent discourse. Mithun (1984) emphasizes that there is a general objection to accepting the discourses in (45) (taken from Mithun, 1984: 871; indices and emphasis in bold added).

(45) a. ?I went **berry$_i$**-picking yesterday, but **they$_i$** weren’t ripe.

b. ?I went **baby$_i$**-sitting last night. Boy was **she$_i$** ugly!

Baker (1988) points out that the inability to introduce discourse referents in English is due to the fact that the constructions in (45) are compounds, which behave like

[19] According to Dayal (2011) this seems indeed to be the case for Hindi.

anaphoric islands (Postal, 1969).[20] He shows that incorporated nouns, as observed in Mohawk, can be referred back to by pronominal elements (see (46), taken from Mithun & Corbett 1999: 56; indices and emphasis in bold added; originally from Baker, 1997). Nevertheless, Mithun (1984, 2010) suggests that even in such cases, incorporated nouns do not establish discourse referents. According to Mithun (1984), this would result in a pragmatic contradiction since the purpose of noun incorporation is to background less prominent entities.

(46) Wa'-onk-**konhs$_i$**-ohae-'
FACT-INDF.AGT/1SG.PAT-face-wash-PRF
tanon kwa shé:kon **io$_i$**-na'naw-en.
and even still N.PAT-be.wet-ST
'She washed my face and it (the face) is even still wet.'

However, if there is a desire to reference an incorporated object, one would repeat the object as an independent noun to introduce a discourse referent, as shown in example (47) (taken from Mithun & Corbett, 1999: 56; indices and emphasis in bold added).

(47) Wa'-onk-**konhs$_i$**-ohae-'
FACT-INDF.AGT/1SG.PAT-face-wash-PRF
tanon kwa shé:kon ki' wak-**konhs$_i$**-a-naw-en.
and even still just 1SG.PAT-face-EP-wet-ST
'She washed my face and I'm even still face-wet.' ('She washed my face and it is even still wet.')

Yet Mithun (1984) presents an example from Mohawk in (48) (taken from Mithun, 1984: 871) where no antecedent is present at all.

(48) K-atenún-hah-kwe. Áh tsi ye-hétkv.
I-watch-HAB-PST ah how she-ugly
'I was baby-sitting. Boy, is she ugly!'

The verb *katénúnhahkwe* contains no incorporated nominal, nor any pronominal reference to a patient. The referent of the pronominal prefix *ye-* is determined pragmatically, not lexically. According to Mithun (1984), this shows that it is the

[20] Note that for Mithun (1984), compounding is one type of incorporation (Type I). Baker (1988), however, separates these phenomena by defining compounding as a lexical process (part of word formation) and noun incorporation as a purely syntactic operation.

pronominal system of polysynthetic languages that is different from languages like English, not the contribution of the incorporated noun in these languages (compare the examples in (45) and (48)).

In the broader discourse, there is an ongoing debate regarding the capacity of incorporated nouns to introduce discourse referents and the feasibility of pronominal reference to an incorporated noun (Sadock, 1980; Baker, 1988; Mithun, 1984; among others). This discussion is closely tied to the larger question of whether noun incorporation is ascribed to morphology or syntax. I delve into this debate in the subsequent section 2.2 on pseudo-incorporation.

2.2 Pseudo-incorporation

The term "incorporation" has been extended to encompass structures in which the object argument is morpho-syntactically realized as a full-blown noun phrase but exhibits semantic properties akin to those discussed for incorporated structures in the previous chapters.[21] These structures are examined under the labels "pseudo-incorporation" (PI) and "pseudo-noun incorporation" (PNI). Some linguists also employ the terms "semantic incorporation" (van Geenhoven, 1998a; Orgun & Inkelas, 2004; Özge, 2011) and "quasi-incorporation" (Dahl, 2004; Modarresi & Simonenko, 2007; Booij, 2009).

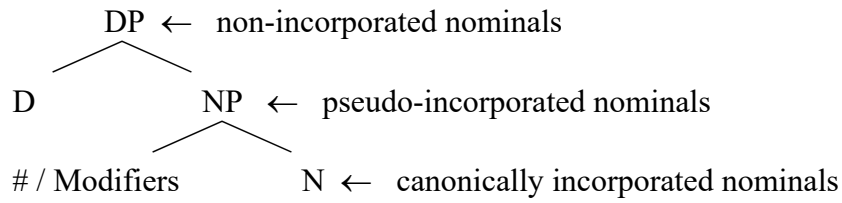
In the upcoming section 2.2.1, I will present morpho-syntactic properties that distinguish pseudo-incorporated nominals from truly incorporated ones.

[21] According to Borik & Gehrke (2015), Schulpen (2016) and others pseudo-incorporation has been observed for numerous languages: *Brazilian Portuguese* (Cyrino & Espinal, 2014), *Catalan and Spanish* (Espinal & McNally, 2007, 2011), *French* (Mathieu, 2004), *Greek* (Lazaridou-Chatzigoga & Alexandropoulou, 2013; Gehrke & Lekakou, 2012), *German* (Barrie, 2006; Barrie & Spreng, 2009), *Hindi* (Dayal, 2003a, 2011, 2015), *Hungarian* (Farkas & de Swart, 2003; Yanovich, 2008), *Korean* (Kwon & Zribi-Hertz, 2006; Driemel & Lee, 2018), *Malagasy* (Paul, 2009), *Niuean* (Massam, 2001), *Norwegian* (Borthen, 2003), *Persian* (Modarresi & Simonenko, 2007; Modarresi, 2014, 2015; Krifka & Modarresi, 2016), *Romanian and Spanish* (Dobrovie-Sorin et al., 2006), *Russian* (Kagan, 2005; Kagan & Pereltsvaig, 2011; Kagan, 2012, 2015), *Sakha* and *Tamil* (Baker, 2014), *Turkish* (Öztürk, 2005a; Kamali, 2015), *Uzbek* (Levy-Forsythe & Kagan, 2018; Türker, 2019), etc.

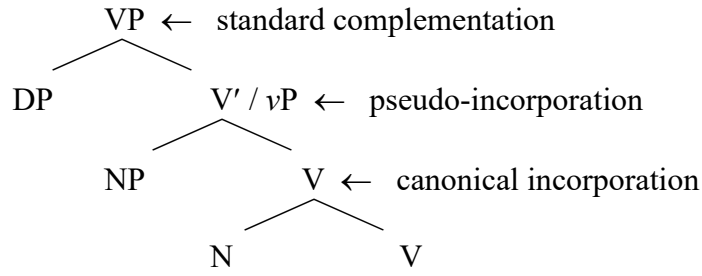
2.2.1 The morpho-syntax of pseudo-incorporation

The phenomena of true incorporation and pseudo-incorporation can be distinguished on the basis of morpho-syntactic properties. According to Dayal (2015), there are two interrelated morpho-syntactic features of pseudo-incorporation that set it apart, both from "standard complementation" and "canonical incorporation". The first property is concerned with the nominal structure of the pseudo-incorporated object, while the second pertains to its syntactic position, and specifically the degree of fusion between the nominal and the verb. Dayal (2015) provides the following two representations in (49), which illustrate the nominal structure and the syntactic structure respectively (adapted from Dayal, 2015: 52).

(49) a. Nominal structure



b. Syntactic position



The representation in (49a) shows that the nominal structure of pseudo-incorporated nominals is characterized by its "reduced structure" on the one hand and its "phrasal structure" on the other. [22] Unlike full DP arguments and akin to truly incorporated nominals, pseudo-incorporated objects usually lack morpho-syntactic elements such as marking for definiteness, number and case. However, pseudo-incorporated nominals have a phrasal structure. Unlike truly incorporated nominals, pseudo-

[22] Borik & Gehrke (2015) refer to this peculiarity as "degree of bareness".

incorporated nominals in some languages permit case or number marking, as well as modification.

The structure in (49b) captures the syntactic position of pseudo-incorporated objects relative to the incorporating verb. Similar to truly incorporated nominals, pseudo-incorporated nominals typically occupy a preverbal position. However, pseudo-incorporated nominals may exhibit a lack of strict adjacency, as indicated by their syntactic mobility.

Starting with the first property, which concerns the nominal structure of pseudo-incorporated nominals, Massam (2001) highlights a diagnostic for pseudo noun incorporation in Niuean, namely "the absence of prenominal functional elements" (Massam, 2001: 157).[23] Consider the examples in (50) (taken from Massam, 2001: 157).

(50) a. Takafaga tūmau nī e ia **e** **tau** **ika**.
hunt always EMPH ERG he ABS PL fish
'He is always fishing.'

b. Takafaga **ika** tūmau nī a ia.
hunt fish always EMPH ABS he
'He is always fishing.'

As illustrated in example (50a), the full DP argument *e tau ika* 'fish' is morpho-syntactically more complex than *ika* in (50b), as is indicated by the prenominal case marker *e* and the plural maker *tau*. In contrast, the pseudo-incorporated nominal in (50b) lacks these morpho-syntactic elements. It is worth noting that pseudo-incorporation in Niuean results in an intransitive construction, as evidenced by the case marking on the agent. While the agent is marked ergative in (50a), the agent in (50b) bears absolutive case.

Massam (2001) further notes that pseudo-incorporated nominals in Niuean are not heads (N^0), but rather noun phrases (NPs). This is illustrated in (51) (taken from Massam, 2001: 158), where the pseudo-incorporated nominals appear in bold.

[23] Massam (2001) argues against Seiter (1980), who analyzed Niuean as exhibiting true incorporation.

(51) a. Ne inu **kofe** **kono** a Mele.
PST drink coffee bitter ABS Mele
'Mary drank bitter coffee.'

b. Ne holoholo **kapiniu** **kiva** fakaeneene a Sione.
PST wash dish dirty carefully ABS Sione
'Sione washed dirty dishes carefully.'

The possibility of modification, for instance by adjectives, indicates that pseudo-incorporated nouns in Niuean are not head categories. [24]

Similar to Niuean, Dayal (2003a, 2011, 2015) claims that pseudo-incorporated nominals in Hindi are determinerless and lack accusative case marking, in contrast to full DP arguments, as shown in (52) (adapted from Dayal, 2015: 49; emphasis in bold added).[25]

(52) a. anu **bacca** sambhaaltii hai
Anu child manages
'Anu looks after children.'

b. anu **bacce-ko** sambhaaltii hai
Anu child-ACC manages
'Anu looks after the child.'

c. anu **har** **bacce-ko** sambhaaltii hai
Anu every child-ACC manages
'Anu looks after every child.'

According to Dayal (2011), pseudo-incorporated objects can be modified (53a) or conjoined (53b) (taken from Dayal, 2011: 136; emphasis in bold added).

[24] Massam (2001) differentiates between three subtypes of pseudo-incorporation in Niuean: general PI, existential PI and instrumental PI. Examples (50b) and (51) are instances of general PI. General PI occurs productively with open class verbs, whereas existential PI applies only to a closed class of verbs, for instance *fai* 'have/be' and *muhu* 'have plenty/be plentiful'. Massam (2001) argues that pseudo-incorporated nouns belonging to general PI are non-referential whereas pseudo-incorporated nouns in existential PI are referential.

[25] Dayal (2015) stresses that not all determinerless and caseless objects qualify for pseudo-incorporation, as even quantified nouns in object position, when they are inanimate, can appear without case.

(53) a. anu apne beTe ke-liye bahut **sundar/paRhii-likhii laRkii**
Anu self's son for very beautiful/educated girl
DhuunDh rahii hai
search PROG be-PRS
'Anu is looking for a very beautiful/educated girl for her son.'

b. anu apne beTe ke-liye bahut **sundar aur paRhii-likhii laRkii**
Anu self's son for very beautiful and educated girl
DhuunDh rahii hai
search PROG be-PRS
'Anu is looking for a very beautiful and educated girl for her son.'

Contrary to standard assumptions for true incorporation and pseudo-incorporation, Dayal (2011) argues that pseudo-incorporated nominals in Hindi are specified for number. Consider the examples in (54) (adapted from Dayal, 2011: 141, 142).

(54) a. anu botal/botaleN ikaTThaa kartii hai
Anu bootle/bottles collect do-IMP be-PRS
'Anu collects bottles.'

b. anu-ne tiin ghanTe meN kitaab paRhii.
Anu-ERG 3 hours in book read-PFV
'Anu read a book in three hours.'

The example in (54a) illustrates that singular pseudo-incorporated nouns have the potential for built-in plurality. However, according to Dayal (2011), achieving a neutral interpretation is not possible for singular pseudo-incorporated nominals in sentences with accomplishments, as shown in (54b). For this reason, she suggests that pseudo-incorporated nominals always involve NumPs, not NPs, and that number morphology is never semantically inert.

Farkas & de Swart (2003) investigate pseudo-incorporation in Hungarian and argue that pseudo-incorporation applies to determinerless nominals. Unlike in Niuean and Hindi, pseudo-incorporated nominals in Hungarian are accusative case-marked, as shown in (55a) and (55b) (taken from Farkas & de Swart, 2003: 12; emphasis in bold added). Note that, similarly to Hindi, plural nominals also undergo pseudo-incorporation in Hungarian.

(55) a. Mari olvas **egy** **verset**.
Mari read a poem.ACC
'Mari is reading a poem.'

b. Mari **verset** olvas.
Mari poem.ACC read
'Mari is reading a poem/poems.'

c. Mari **verseket** olvas.
Mari poem.PL.ACC read
'Mari is reading poems.'

Persian is another language that instantiates pseudo-incorporation. Modarresi (2014, 2015) argues that bare nominals lacking any morphological marking in Persian undergo pseudo-incorporation into the verb.[26] The contrast between a full DP and a pseudo-incorporated bare noun is shown in (56) (taken from Modarresi, 2014: 2).

(56) a. **Ketab** khærid-æm
book bought-1SG
'I bought a book/books.'

b. (Yek) **ketab-i** khærid-æm.
one book-INDF bought.3SG
'I bought a book.'

Modarresi (2014) analyzes bare objects as head nouns (N^0).[27] Her evidence comes from the following observations. She argues that pseudo-incorporated nouns cannot be modified by adjectives, as shown in (57) (taken from Modarresi, 2014: 20, 21; emphasis in bold added).

(57) a. Sara khoob **ketab** khærid.
Sara good/well book bought.3SG
'Sara successfully bought books.'

[26] In fact, Modarresi (2014) uses the term "quasi-incorporation". In a more recent work Krifka & Modarresi (2016) use the term "pseudo-incorporation".

[27] This assumption appears to contradict a "standard pseudo-incorporation analysis". Actually, Modarresi (2014) provides a solely semantic analysis for incorporation.

b. Sara khoob **ketab-i** khærid.
Sara good book-INDF bought.3SG
'Sara bought a good book.'

The contrast in (57) indicates that modifiers like *khoob* 'good' can either be interpreted as adjectives or as adverbs. In (57a), *khoob* is obligatorily interpreted as an adjective modifying the head noun. However, in (57b), the adjectival interpretation is unavailable, and *khoob* receives the adverbial interpretation 'well' instead, which modifies the event of *book-buying*.

Nevertheless, as illustrated in (58) (taken from Modarresi, 2014: 23; emphasis in bold added), bare nominals permit modification in so-called "ezafe-constructions" (Ghomeshi, 1997).

(58) a. Mæn **ketab-e -ghesseh** mi-khær-æm.
I book-EZ-story DUR-buy-1SG
'I buy story books.'

b. Mæn **khoone-ye-ghædimi** mi-khær-æm væ bazsazi mi-kon-æm.
I house-EZ-old DUR-buy-1SG and renovation DUR-do-1SG
'I buy and renovate old houses.'

Modarresi (2014) admits that such a modification is only possible with certain modifiers, namely with modifiers that refer to the type of the noun rather than to the token.

Espinal & McNally (2011) discuss data from Catalan and Spanish, demonstrating that bare nominals in these languages exhibit properties of pseudo-incorporation. They argue that the bare nominal functions as a head noun forming a complex predicate of the type $[_V$ V N]. However, they contend that certain kinds of modification are permitted where "an NP can substitute for N" (Espinal & McNally, 2011: 104). Consider the examples from Catalan in (59) (adapted from Espinal 2010: 988, 989; emphasis in bold added), where the bare noun is modified by an adjective.

(59) a. Per a aquest spectacle necessitareu **faldilla llarga**.
for to this event need-FUT skirt long
'For this event you will need a long skirt.'

b. A escolar portàvem **bata blava de ratles**.
at school wore smock blue striped
'At school we wore a blue striped smock.'

Similarly to Persian, the adjectives (and past participles) modifying the bare noun refer to the type rather than to the token individual. Espinal (2010) shows that modification by adjectives and by past participles referring to token individuals is ungrammatical; see the examples in (60) (adapted from Espinal, 2010: 989; emphasis in bold and translation added). Note that these examples become grammatical when the bare noun is preceded by the indefinite determiner *una* 'a' or by the definite determiner *la* 'the'.

(60) a. Necessiten faldilla ***neta**.
need skirt clean
'They need a clean skirt.'

b. A escolar portàvem bata ***tacada**.
at school wore smock stained
'At school we wore a stained smock.'

Summing up the discussion so far, the cross-linguistic examples above show that pseudo-incorporated nominals have a reduced structure compared to non-incorporated full DPs, but exhibit a phrasal structure, in contrast to truly incorporated nominals.
Turning to the second property, which concerns the syntactic position of pseudo-incorporated nominals, the examples above indicate that pseudo-incorporated nominals usually appear adjacent to the verb. In languages like Niuean and Hungarian, this adjacency may be a consequence of word order changes.
Massam (2001) shows that pseudo-incorporation in Niuean leads to predicate fronting, yielding a change in word order from VSO (verb-subject-object) to VOS order. She argues that pseudo-incorporated nominals are NPs base-generated as complements of the verb head. Since these NPs cannot check absolutive case, they fail to move out of the VP, leading the entire $VP_{[V\ NP]}$ to undergo predicate fronting. In the non-incorporating VSO structure, the verb merges with the DP object to form a VP. The DP then moves out of the VP to check absolutive case and the VP undergoes fronting, which contains the trace of the object. The example in (61) (taken from Massam, 2001: 158, 168; emphasis in bold added) indicates that pseudo-incorporated nominals undergoing predicate fronting cannot bear case markers.

(61) a. Ne inu **kofe** kono a Mele.
PST drink coffee bitter ABS Mele
'Mary drank bitter coffee.'

b. *Ne inu **e** **kofe** kono a Mele.
PST drink ABS coffee bitter ABS Mele
'Mary drank the bitter coffee.'

Similarly to Niuean, Hungarian pseudo-incorporated nominals can be identified by their syntactic position. Farkas & de Swart (2003) argue that these nominals occur in a special verb-adjacent position called "Predicate Operator (PredOP)".[28] In contrast, full-fledged DPs occur in postverbal position. Consider the examples in (62) (adapted from Farkas & de Swart, 2003: 92, 93; emphasis in bold added).

(62) a. Mari **verset** fog olvasni.
Mari poem will read.INF
'Mari will read a poem/poems/poetry.'

b. Mari fog olvasni **egy** **verset**.
Mari will read.INF a poem.ACC
'Mari will read a poem.'

However, pseudo-incorporated nominals in Hungarian occur postverbally in the case of pre-verbal focus (63a), negation (63b), and subjunctive mood (63c) (taken from Farkas & de Swart, 2003: 93; emphasis in bold added).

(63) a. Mari PETINEK olvasott **verset**.
Mari Peti.DAT read.PST poem.ACC
'It is to Peti that Mari read poetry.'

b. Mari nem olvas **verset**.
Mari not read poem.ACC
'Mari does not read poem/poems.'

c. Olvassál **verset**!
read.SUBJ.II poem.ACC
'Read a poem/poems/poetry!'

[28] This term has been adopted from Szabolsci (1997).

In numerous other languages discussed under the label of pseudo-incorporation, pseudo-incorporated nouns appear in the same position (at least superficially) as their non-incorporated counterparts and are frequently argued to be syntactic complements. Dayal (2003a, 2011, 2015) argues that pseudo-incorporated nominals in Hindi are "syntactic complements". Her evidence comes from agreement patterns and scrambling possibilities. Dayal (2011) claims that pseudo-incorporation structures in Hindi display the same agreement patterns as in standard complementation. Consider the example in (64) (taken from Dayal, 2011: 50).

(64) anu-ne bahut sundar laRkii cunii.
Anu very pretty girl chose.FEM
'Anu chose a very pretty girl.'

In (64), the non-case marked direct object triggers feminine agreement on the verb. In addition, pseudo-incorporated objects can be scrambled from the preverbal position (65a) either to the topic position (65b) or to the postverbal position (65c) (examples in (65a) and (65b) are taken from Dayal, 2011: 127, 137; and (65c) from Dayal, 2003b: 79).

(65) a. anu **kitaab** paRhegii.
Anu book read-FUT
'Anu will read a book.'

b. **kitaab** anu zaroor becegii.
book Anu definitely sell-FUT
'Anu will definitely sell books.'

c. anu paRh rahii hai, **kitaab**
Anu read-PROG-PRS book
'Anu is reading a/the book.'

Similarly, Espinal & McNally (2011) argue that bare nominals in Spanish and Catalan are syntactic complements. They claim that this is evidenced by the fact that doubling is not permitted, as shown in (66a) for Spanish and in (66b) for Catalan (taken from Espinal & McNally, 2011: 89).

(66) a. *Tengo piso un duplex. (Spanish)
have apartment a duplex.
*'I have an apartment duplex.'

b. *Tinc pis un duplex. (Catalan)
have apartment a duplex.
*‘I have an apartment duplex.’

Furthermore, Espinal & McNally (2011) show that the pseudo-incorporated nominal can be separated from the verb, as illustrated in (67) for Spanish (taken from Espinal & McNally, 2011: 104).[29]

(67) Lleva **siempre** sombrero de copa.
wear.3SG always hat of top
‘He/She always wears a top hat.’

Likewise, Modarresi & Simonenko (2007) illustrate that in Persian an adverb can intervene between the pseudo-incorporated nominal and the verb; see (68) (adapted from Modarresi & Simonenko, 2007: 185; emphasis in bold added).

(68) Mæn ketab **dirooz** khærid-æm.
I book yesterday bought-1SG
‘I bought books yesterday.’

Modarresi (2014) provides another example from Persian, where the pseudo-incorporated noun *film* ‘movie’ moves to sentence-initial position due to contrastive focus; see (69) (taken from Modarresi, 2014: 38; emphasis in bold added).

(69) **film** hæmeh too khooneh mi-ban-ænd.
movie everybody in house DUR-watch-3PL
‘It is movies that everybody watches at home.’

With regard to the syntactic position of pseudo-incorporated nominals, Modarresi (2010, 2014) argues that they remain in their base-generated position where they get interpreted under the scope of existential closure (following Diesing, 1992).
In conclusion, the examples discussed highlight that the morpho-syntactic properties of pseudo-incorporated nominals vary across languages but also exhibit substantial overlap in behavior. Moreover, it has been demonstrated that the properties of nominal structure and syntactic position are interrelated. Pseudo-incorporated nominals, on the one hand, display a reduced nominal structure and typically occur adjacent to the verb.

[29] According to Espinal & McNally (2011), the example in (67) indicates that the nominal does not syntactically incorporate into the verb (Baker, 1988).

On the other hand, they show a potential phrasal structure and exhibit syntactic mobility.

In the next subsection, I provide a brief overview of the semantic properties of pseudo-incorporated nouns, which generally also hold for truly incorporated nouns in most of the cases.

2.2.2 The semantics of pseudo-incorporation

As pointed out earlier, the semantic properties of true incorporation also hold for pseudo-incorporation. In light of this, pseudo-incorporated nominals have also been argued to denote properties of type ⟨e,t⟩ rather than argument types ⟨e⟩ or ⟨⟨e,t⟩,t⟩ (Borthen, 2003 for Norwegian; Dayal, 2003a, 2011 for Hindi; Farkas & de Swart, 2003 for Hungarian; Dobrovie-Sorin et al., 2006 for Romanian and Spanish; Espinal & McNally, 2011 for Spanish and Catalan; Modarresi, 2014 for Persian; among others). Thus, semantics does not treat pseudo-incorporated nominals as regular arguments although they are usually considered syntactic complements of their predicates, as discussed in the previous section.

For instance, Dayal (2011) argues that incorporating verbs differ from regular transitive verbs in taking properties, rather than individuals, as internal arguments. As shown in (70b), an incorporating verb takes a property as a modifier of the event, yielding a sub-type of the event. Note that the pseudo-incorporation construction does not involve an existentially bound theme but rather a suppression of the theme argument. That is, the incorporating verb instantiates an entity corresponding to the description of the pseudo-incorporated noun, which acts as a theme argument of the sub-event (see also Dayal, 2003a). In contrast, regular transitive verbs take individual-denoting nominals as internal arguments, as illustrated in (70a) (adapted from Dayal, 2011: 146).[30]

(70) a. $[\![V_{TR}]\!] = \lambda x\, \lambda y\, \lambda e\, [V(e) \,\&\, Agent(e) = y \,\&\, Theme(e) = x]$

[30] This analysis essentiality builds on van Geenhoven's (1998a) notion of semantic incorporation. Under both accounts there are two lexical entries for the non-incorporating and incorporating verbs and both accounts treat the incorporating noun as property-denoting. However, Dayal departs from van Geenhoven's account in not treating bare plurals on a par with incorporated nominals.

b. $[\![V_{INC}]\!] = \lambda P_{\langle e,t\rangle}\, \lambda y\, \lambda e\, [P\text{-}V(e) \,\&\, Agent(e) = y]$,
where $\exists e[P\text{-}V(e)] = 1$ iff $\exists e'[V(e') \,\&\, \exists x[P(x) \,\&\, Theme(e') = x]]$

Concerning the number interpretation of pseudo-incorporated nominals in Hindi, Dayal (2011) suggests that they are NumPs referring to atomic entities, which can achieve a number-neutral interpretation in atelic environments through an iterative interpretation of the verb. She adopts the pluractional operator of Lasersohn (1995) and argues that it takes scope immediately above the verb, turning an event into plural events with multiple sub-events.

With regard to discourse transparency, Dayal (2011) argues that aspectual specification of the predicate plays a crucial role in the anaphoric potential of pseudo-incorporated nouns. Consider the context in (71) (adapted from Dayal, 2011: 159; emphasis in bold added).

(71) a. anu$_i$-ne **laRkii$_j$** cun lii.
Anu-ERG girl choose COMPL-PFV
'Anu has **girl$_j$**-chosen.'

b. us$_i$-ne **us$_j$**-ko ek sone-kaa cen diyaa hai.
she-ERG her-DAT one gold necklace give-PFV be-PRS
'She$_i$ has given **her$_j$** a gold necklace.'

The sentence in (71a) involves perfective aspect and the completion particle *lii* renders the sentence telic. According to Dayal (2011) this is why the pseudo-incorporated noun can be referred back to by an overt singular pronoun. However, Dayal suggests that the pronoun cannot refer directly to the entity that serves as the theme of the sub-event, as shown in (72) (adapted from Dayal, 2011: 161).

(72) a. $[\![$*Anu has girl$_i$-chosen*$]\!] = \exists e[\text{girl-choose}(e) \,\&\, Agent(e) = \text{anu}]$

b. $[\![$*She has given her$_i$ a gold necklace*$]\!] = \exists e' \,\&\, \text{give}(e')$
$\&\, \exists y[\text{gold-necklace}(y) \,\&\, Theme(e') = y \,\&\, Goal(e') = f_{girl}(e)]$[31]

The denotation in (72a) of sentence (71a) shows that the pseudo-incorporated NumP *laRkii* 'girl', being a property of type ⟨e,t⟩, does not make reference to a theme

[31] This representation is a simplified version of Dayal's analysis, which originally included aspectual features.

argument. Thus, there is no appropriate antecedent for the singular pronoun, being of type ⟨e⟩, in the second sentence (71b). However, anaphoric reference can be established by invoking a function that applies from events to individuals with *laRkii* 'girl' providing the scope of the function as shown in (72b).

Espinal & McNally's (2011) analysis of Catalan and Spanish pseudo-incorporated nominals is based on Dayal's (2011) analysis. They claim, just as Dayal does for Hindi, that Catalan and Spanish pseudo-incorporated nominals denote properties. However, Espinal & McNally (2011) argue that pseudo-incorporation is restricted to a particular set of verbs, which they call "HAVE-predicates", following Borthen (2003). They formalize their proposal in terms of a lexical rule that applies only to HAVE-predicates and which suppresses the theme argument of the predicate and adds a condition on it. This condition, termed as a "characterizing property", requires that the resulting verb phrase must denote a characterizing property of the VP-external argument. The lexical rule is given in (73) (taken from Espinal & McNally, 2011: 110).

(73) a. Input

$\lambda y\ \lambda e\ [\mathrm{V}(e) \wedge \theta(e) = y \wedge \exists w\ [C(w)]\ [\exists e'\ [\mathbf{depend}(e, e', w) \wedge \mathbf{have}(e') \wedge \mathbf{havee}(e') = \mathrm{y}]]]$

b. Output

$\lambda e\ [\mathbf{V}(e) \wedge \exists w\ [C(w)]\ [\exists e'\ [\mathbf{depend}(e, e', w) \wedge \mathbf{have}(\mathrm{e}') \wedge \mathbf{havee}(e') = \theta(e)]]]$

The input of this rule in (73a) says that the situation denoted by the verb (e) depends on the existence of an event involving a HAVE-relation (e') in some (not necessarily actual) world w with y as the havee (theme argument). In the output of this rule, the theme argument y in (73b) disappears. However, there is still an entailment that the verb involves two participants in the lexical semantics of the verb. The implicit participant corresponding to the suppressed theme argument is now referred to as $\theta(e)$, which functions as a predicate modifier. Finally, the output of the lexical rule adds a "condition on felicitous use" on the noun-verb sequence to capture the requirement that the predicate is potentially "characterizing".[32]

[32] Espinal & McNally (2011) argue that the characterizing property of the external argument is not necessarily a prototypical, stereotypical or institutionalized property. Rather, it is a property which is

As the final part of their analysis, Espinal & McNally (2011) propose the composition rule in (74) (taken from Espinal & McNally, 2011: 112).[33]

(74) Intersective composition rule
If ⟦V⟧ = λ*e* [**V**(*e*)] and θ is an implicit role function defined for V, and if ⟦N⟧ = **N**, a property, then ⟦[$_V$VN]⟧ = λ*e* [**V**(*e*) ∧ **N**θ(*e*))].

They argue that the verb and the bare noun cannot combine via function application, but rather via an "intersective composition rule" which is restricted to verbs that do not select for an internal argument but for which a participant role is entailed as part of the lexical semantics of the verb. The bare noun in that participant role functions as a predicate modifier, restricting the identity of the participant. The output of (74), applied to the Catalan example *portar motxilla* 'carry backpack', is shown in (75) (taken from Espinal & McNally, 2011: 113).

(75) ⟦*portar motxilla*⟧ = λ*e* [**portar**(*e*) ∃*w* [*C*(*w*)] [∃*e*′ [**depend**(*e*, *e*′, *w*) ∧ **have(***e*′) ∧ **havee**(*e*′) =θ(*e*)]] ∧ motxilla(θ(*e*))]

Espinal & McNally (2011) argue that their analysis captures well the fact that pseudo-incorporated nouns in Catalan and Spanish can only antecede pronouns that refer to property-denoting nouns (i.e., *en* 'one').

For pseudo-incorporation in Persian, Modarresi & Simonenko (2007) and Modarresi (2014) adopt the semantic analysis of Chung & Ladusaw (2004) (see section 2.2.3). They argue that bare nouns combine with regular transitive verbs via the composition

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"relevant in the context to distinguish between whether or not an individual has the property in question" (Espinal & McNally, 2011: 101). They give the examples in (2) (taken from Espinal & McNally, 2011: 102).

(2) a. (#) En Joan té joguina.
DET Joan has toy
'Joan has a toy.'

b. (#) Aquest ordinador té virus.
this computer has virus
'This computer has a virus.'

Espinal & McNally (2011) argue that the sentences in (2) might be judged odd by the hearer, which is due to the fact that whether or not Joan has a toy or the computer a virus does not strike the hearer as particularly relevant for the purpose in the context. However, they argue that we can easily construct a context in which the sentences are felicitous.

[33] This rule is based on Pustejovsky's (1995) "Selective Binding" as described in Espinal & McNally (2007).

mode Restrict. Consider the sentence in (76) and the analysis in (77) (taken from Modarresi, 2014: 37; see also Modarresi & Simonenko, 2007).

(76) Mæn ketab khærid-æm.
I book bought-1SG
'I bought books.'

(77) a. RESTRICT (λyλx [buy′(y)(x), book′)
= λyλx buy′(y)(x) ∧ book′(y)]

b. EC (RESTRICT (λyλx [buy′(y)(x), book′))
= λx∃y [buy′(y)(x) ∧ book′(y)]

Just like Chung & Ladusaw, Modarresi (2014) proposes that the property argument is bound by existential closure after being restricted by the syntactic argument of the predicate. She assumes that existential closure in Persian applies at the level of the VP to close off the argument position. Modarresi (2014) stresses that the adoption of the Restrict function can account for double incorporation and complex predicate formation in Persian. Consider the examples in (78) (taken from Modarresi, 2014: 45).

(78) a. Mæn gol ab pashid-æm.
I flower water sprayed-1SG
'I watered flowers.'

b. Mæn gol(-ha) (ro) ab-pashi-kærd-æm.
I flower-PL DM water-spraying-did-1SG
'I watered (the) flowers.'

In example (78a), the regular verb *spray* combines with the bare noun *ab* 'water' via Restrict, yielding a newly modified verb, as shown in (79a). The complex verb then takes another bare noun *gol* 'flower' that combines with it via Restrict again, as shown in (79b). Finally, existential closure applies to saturate the argument position of the verb, as in (79c).

(79) a. RESTRICT (λyλx [spray′(y)(x)], water′)
= λyλx [spray′(y)(x) ∧ water′(y)]

b. RESTRICT (λzλyλx [spray′(z)(y)(x) ∧ water′(y)], flower′)
= λzλyλx [spray′(z)(y)(x) ∧ water′(y) ∧ flower′(z)]

c. EC (RESTRICT (λzλyλx [spray′(z)(y)(x) ∧ water′(y)], flower′))
= λx∃y∃z [spray′(z)(y)(x) ∧ water′(y) ∧ flower′(z)]

According to Modarresi (2014) the same mechanism applies with regard to complex predicate formation, as in (78b). Modarresi (2014) notes that this mechanism does not require a type-shifting operation, which would otherwise violate Chierchia's (1998) Blocking Principle.

All in all, the semantic accounts of pseudo-incorporation resemble the semantic approaches for true incorporation. The morpho-syntactic differences in particular languages, whether in truly incorporating or in pseudo-incorporating languages, are primarily responsible for the subtle differences in the semantic frameworks.

In the next two sections, I provide an overview of the semantic properties observed in pseudo-incorporating languages with a focus on cross-linguistically shared properties and cross-linguistically variable properties.

2.2.3 Cross-linguistically stable properties

Stable properties, such as the presence of a full-fledged (indefinite) counterpart, taking obligatorily narrow scope, modification and conceptual restrictions, have been observed to be shared across different languages (Mithun, 1984; Dayal, 2003a, 2011; Farkas & de Swart, 2003; Carlson, 2006; Schulpen, 2016; among others).

To begin with, pseudo-incorporated nouns consistently have a full-fledged indefinite counterpart, where the argument appears as a syntactic argument of the verb, as demonstrated in (80) from Hungarian (taken from Farkas & de Swart, 2003: 12; emphasis in bold added).

(80) a. Mari olvas **egy** **verset**.
Mari read a poem.ACC
'Mari is reading a poem.'

b. Mari **verset** olvas.
Mari poem.ACC read
'Mari is reading a poem/poems.'

Furthermore, it is noteworthy that the sentences in (80a) and (80b) do not differ with respect to truth conditions. In both cases, the existence of a poem Mari read renders the sentences true.[34]

Another property shared across languages is that pseudo-incorporated nouns are scopally inert, thus obligatorily taking narrow scope with respect to negation, universal quantification or modals. An example from Hungarian is given in (81) (taken from Farkas & de Swart, 2003: 7; emphasis in bold added).

(81) a. Mari kell olavsson **egy** **verset**.
Mari must read.SUBJ a poem.ACC
'Mari must read a poem.'

b. Mari **verset** kell olavsson.
Mari poem.ACC must read-SUBJ
'Mari must read a poem/poems.'

In (81a), the full-fledged object is scopally ambiguous. Under the wide scope reading there is a particular poem Mary has to read; under the narrow scope reading, Mary fulfills her obligation if she reads any poem. In (81b), however, the pseudo-incorporated object takes narrow scope in relation to the modal predicate (see also Dayal, 2003b for Hindi). Additional examples regarding negation and universal quantification are presented in (82) (taken from Farkas & de Swart, 2003: 7).

(82) a. Mari nem olvas verset.
Mari not read poem.ACC
'Mari is not reading a poem/poems.'

b. Minden gyerek verset olvas.
every child poem.ACC read
'Every child reads a poem/poems.'

[34] Dayal (2003a) observes that pseudo-incorporated nouns in Hindi do not necessarily generate an existential entailment in a context with imperfective aspect. The relevant example is *Anu sells oranges these days.* ∃e [IMP(oranges-selling)(e) & Ag(e) = anu & Appropriately Classificatory(e)] (Dayal, 2003a: 25). According to Dayal the sentence can still be true even in a situation where there are no oranges. Similarly, Farkas & de Swart (2003:104) argue that in habitual or dispositional contexts like in (87), the predicate is in the scope of an aspectual operator, which is why there is no existential entailment of the direct object.

A further property is concerned with modification and conceptual restrictions. An example in (83) from Hindi (adapted from Dayal, 2011: 136) illustrates the modification restriction.

(83) a. anu sirf puraanii kitaab becegii
Anu only old book sell-FUT
'Anu will only sell old books.'

b. #anu sirf bhaarii kitaab becegii
Anu only heavy book sell-FUT
'Anu will only sell heavy books.'

In example (83a), *kitaab* 'book(s)' can be modified with the adjective *puraanii* 'old', as this modification is in a prototypical relation with *sell*, whereas in (83b) *bhaarii kitaab* 'heavy books' is not. Furthermore, as Dayal (2011) notes, there are also conceptual restrictions on pseudo-incorporated structures in Hindi, which seem to be based on cultural knowledge; see example (84) (adapted from Dayal, 2011: 134).

(84) a. anu apne beTe ke-liye laRkii dekh rahii hai
Anu self's son for girl look PROG be-PRS
'Anu is girl-looking (looking for prospective brides) for her son.'

b. anu apne beTe ke-liye *aurat dekh rahii hai
Anu self's son for woman look PROG be-PRS
'Anu is *woman-looking for her son.'

In example (84a), the noun-verb combination *laRkii-dekhnaa* 'girl-see' refers to an institutionalized activity in which a prospective bride is seen by the potential mother-in-law. In contrast to (84a), **aurat-dekhnaa* 'woman-see' in (84b) does not correspond to an institutionalized activity and is therefore ungrammatical. According to Dayal (2011), this is attributed to the presence of gaps in the paradigm when it comes to pseudo-incorporation. Consider the noun-verb combinations in (85) for Hindi (taken from Dayal, 2003a: 9 and Dayal, 1999: 41).

(85) a. baccaa-khilaanaa laRkii DhuunDhnaa makkhii-maarnaa
'child-look-after' 'girl-find' 'fly-beat'

b. *LaRkii-khilaanaa *laRkii-sulaanaa *baccaa-maarnaa
'girl-look-after' 'girl-put-to-sleep' 'child-beat'

c.	kitaab-paRhnaa	baal kaaTnaa	kapRa silnaa
	'book-read'	'hair-cut'	'cloth-sew'

According to Dayal (2011), pseudo-incorporation is limited to a small set of noun-verb combinations (see Asudeh & Mikkelsen, 2000 for Danish). In addition, Dayal (2011) claims that pseudo-incorporation in Hindi is not particularly productive, and the meaning of the noun-verb combination is often non-compositional, leading to idiomatic or lexicalized expressions. For instance, *laRkiii-dekhnaa* 'girl-see' has an enriched meaning; it cannot be used in a situation where someone just happens to see a girl while looking around.[35] Similarly, the noun-verb combination *makkhii-maarna* 'fly-beat' means wasting time rather than literally "killing flies" (Dayal, 2011: 134).[36] Likewise, Farkas & de Swart (2003: 138) observe that *gyereket várni* 'child-expect' has an idiomatic meaning in the sense of being pregnant, whereas the non-incorporated counterpart *várni egy gyereket* literally means "to be waiting for a child". Relatedly, *qora-nm-at* 'reindeer-slaughter' in Chukchi refers to a cultural activity, i.e., "killing of a domestic meat reindeer with a knife in the prescribed manner with all attendant ritual" (Dunn, 1999: 223).[37] However, in certain contexts, gaps can be alleviated through coercion. For instance, *ladder-climbing* is not an institutionalized activity, yet it is a possible noun-verb combination in a context where *ladder-climbing* is seen as a recognizable activity, such as "a new sport or test for joining the fire department" (Mithun, 1984: 848). Likewise, Kiefer (1990–91: 165) argues that the Hungarian noun-verb combination *szomszédot bosszant* 'neighbor-annoying' can be institutionalized in certain contexts. Modarresi (2014: 35) shows that institutionalization can be achieved with durative aspect resulting in a repeated activity reading. For instance, the atelic construction in (86a) is perfectly fine, whereas the telic construction in (86b) is ungrammatical. However, when the noun-verb combination

[35] Kuribayashi (1990) claims that noun incorporation in Turkish is semantically compositional. In fact, this depends on the noun-verb combination. Whereas *kız istemek* 'girl-want' comes with an enriched meaning 'ask for the girl's hand', the noun-verb combination *kitap okumak* 'book-read' is fully transparent and thus semantically compositional. See Table 5 in section 2.4.1 for examples of different noun-verb combinations in Turkish.

[36] Titone & Connine (1999) ascribe compositional and non-compositional characteristics to idiomatic expressions. In their approach the noun-verb combinations 'girl-see' and 'fly-kill' would be analyzed differently in terms of compositionality.

[37] Note that the thematic suffix *-at* in *qora-nm-at* 'reindeer-slaughter' is a marker of lexicalization.

jæbeh keshidæm ‘box-pull’ refers to an institutionalized activity, as in (86c), the telic construction becomes acceptable.

(86) a. Mæn dirooz jæbeh mi-keshid-æm.
I yesterday box DUR-pulled-1SG
‘I was pulling boxes yesterday.’

b. *Mæn dirooz jæbeh keshid-æm.
I yesterday box pulled-1SG
‘I pulled boxes yesterday.’

c. Diruz æz sobh ta shæb jæbeh keshid-æm.
Yesterday from morning till night box pulled-1SG
‘Yesterday from morning till night I pulled boxes.’

The above-mentioned modification and conceptual restrictions are frequently discussed under the cover terms “name-worthiness” (Mithun, 1984; Mohanan, 1995; Dayal, 2011, 2015), “well-establishedness” (Borik & Gehrke, 2015) and “semantic enrichment” (Carlson & Sussman, 2005).

2.2.4 Cross-linguistically variable properties

Other properties of pseudo-incorporated nouns show variation across languages. The most discussed and debated issues are number neutrality and discourse transparency or referentiality (Dayal, 2003a; 2011; Farkas & de Swart, 2003; among others).
Number neutrality has been discussed for many languages investigated for noun incorporation from a semantic point of view, including West Greenlandic (van Geenhoven, 1998a), Hungarian (Farkas & de Swart, 2003), Hindi (Dayal, 2011) Persian (Modarresi, 2014; Krifka & Modarresi, 2016), Spanish and Catalan (Espinal & McNally, 2011). For instance, pseudo-incorporated nouns in Hungarian differ from regular indefinites in their number interpretation even though both are morphologically singular (see the example in (80)). Farkas & de Swart (2003) point out that only singular pseudo-incorporated nouns, but not regular indefinites, can be combined with a collective predicate. This is because regular indefinites get an atomic interpretation, whereas pseudo-incorporated nouns are compatible with both atomic

and non-atomic interpretation, as shown in (87) (taken from Farkas & de Swart, 2003: 13).

(87) a. Mari bélyeget gyűjt.
Mari stamp.ACC collect
'Mari is collecting stamps.'

b. #Mari gyűjt egy bélyeget.
Mari collect a stamp.ACC
#'Mari is collecting a stamp.'

The example in (88) (taken from Farkas & de Swart, 2003: 14) shows that singular pseudo-incorporated nouns may also occur in contexts with atomicity entailments. Note that the English translations here have a plural in (87a) and a singular in (88), reflecting the respective number entailments.

(88) Feri feleséget keres.
Feri wife.ACC seek
'Feri is looking for a wife.'

In contrast to Hungarian, Dayal (2011) argues that the number neutrality of pseudo-incorporated nouns in Hindi depends on the aspectual information of the predicate. More precisely, she argues that pseudo-incorporated nouns in Hindi are not inherently number-neutral but rather semantically singular. According to her, a number-neutral interpretation is a result of combining pseudo-incorporated nouns with aspectual operators. Consider the examples in (89) (taken from Dayal, 2015: 66; see also Dayal, 2011).

(89) a. anu-ne tiin ghanTe meN / tiin ghanTe tak kitaab paRhii
Anu-ERG 3 hours in 3 hours for book read
'Anu read a book in three hours.' = exactly one book
'Anu read a book for three hours.' = one or more books

b. anu-ne tiin ghanTe meN / *tiin ghanTe tak kitaab paRh Daalii
Anu-ERG 3 hours in 3 hours for book read COMPL
'Anu read a book in three hours.' = exactly one book

c. anu anu-ne tiin ghanTe meN *kitaab ikaTTaa kar lii / kitaabeN
Anu-ERG 3 hours in book collected-COMPL books
ikaTThaa kar liiN
collect-COMPL
'Anu got done collecting *a book / books in three hours.'

Depending on the aspectual specification, a number-neutral interpretation of the pseudo-incorporated noun *kitaab* 'book' is either licensed or blocked. In the case of an atelic interpretation, one or more books can be inferred, but in the case of a telic interpretation, the book is interpreted as a single atomic entity (see (89a)). Where a completion particle is added, as in example (89b), the pseudo-incorporated noun can only be interpreted as singular, since an atelic reading is incompatible. Accordingly, a singular pseudo-incorporated noun is unacceptable with a collective predicate with a completion particle, as illustrated in (89c). Dayal's conclusion is that number neutrality is not part of the meaning of the pseudo-incorporated noun, rather, it is the result of the interaction between pseudo-incorporation and aspectual information.

In Greek, like in Hindi, number neutrality is not dependent on aspect. Alexandropoulou (2013) shows that different tests for number neutrality yield conflicting results concerning the number interpretation of pseudo-incorporated nouns in Greek. In example (90) (taken from Alexandropoulou, 2013: 56), the pseudo-incorporated noun can only have a singular interpretation. So, based on this example we would conclude that pseudo-incorporated nouns in Greek are not number-neutral.

(90) Eho molivi.
have.1SG pencil
'I have a pencil.' (not 'I have pencils.')

Yet another test with more elaborate context, attributed to Espinal & McNally (2011), shows that Greek pseudo-incorporated nouns indicate number-neutral interpretations. With this diagnostic, Espinal & McNally (2011) demonstrate that continuations show sensitivity for number. The dialogue in (91) (taken from Alexandropoulou, 2013: 57) illustrates that the pseudo-incorporated noun *molivi* 'pencil' in speaker B's assertion can be referred back to by either a singular or a plural expression. In contrast, the regular indefinite *ena molivi* 'a pencil' is only compatible with a singular continuation

(speaker B′) and the bare plural *molivya* ‘pencils’ (speaker B′′) only with a plural continuation.

(91) A: Pooo! Dhen eho feri molivi!
damn not have.1SG brought pencil
‘Damn! I haven’t brought any pencil!’

B: Eho egho **molivi** na su dhoso; ena faber kastel.
have.1SG I pencil to you.CL give.1SG one Faber Castell
ena faber kastel ki ena mihaniko. (Ti protimas?)
one Faber Castell and one mechanical what prefer.2SG
‘I got pencils to give you. One Faber-Castell. / One Faber-Castell and one mechanical pencil. (What do you prefer?)’

B′: Eho egho **ena** **molivi** na su dhoso; ena faber kastel.
have.1SG I a pencil to you.CL give.1SG one Faber Castell
#ena faber kastel ki ena mihaniko. #(Ti protimas?)
one Faber Castell and one mechanical what prefer.2SG
‘I have a pencil to give you. One Faber-Castell. / #One Faber-Castell and one mechanical pencil. #(What do you prefer?)’

B′′: Eho egho **molivya** na su dhoso; #ena faber kastel.
have.1SG I pencils to you.CL give.1SG one Faber Castell
ena faber kastel ki ena mihaniko. (Ti protimas?)
one Faber Castell and one mechanical what prefer.2SG
‘I got pencils to give you. #One Faber-Castell. / One Faber-Castell and one mechanical pencil. (What do you prefer?)’

This leads Alexandropoulou (2013) to conclude that the property of number neutrality is not a stable property within the Greek language. One possible explanation for this fact is to assume, like van Geenhoven (1998a) does for pseudo-incorporated nouns in West Greenlandic, that the subsequent co-referential expression fixes the number interpretation of the pseudo-incorporated noun (see section 2.2.3). Another explanation Alexandropoulou (2013) suggests is that the number interpretation is sensitive to context, similar to the account in Modarresi (2014).

Bliss (2004) provides a similar test with regard to Turkish. Consider the examples in (92) (taken from Bliss, 2004: 24; emphasis in bold added).

(92) a. Nurten **muz$_ı$** al-dı. **On-u$_ı$** buzdolabın-a koy-du.
Nurten banana buy-PST it-ACC refrigerator-DAT put-PST
'Nurten bought a banana$_i$. She put it$_i$ in the refrigerator.'

b. Nurten **muz$_i$** al-dı. **On-lar-ı$_i$** buzdolabın-a koy-du.
Nurten banana buy-PST it-PL-ACC refrigerator-DAT put-PST
'Nurten bought bananas$_i$. She put them$_i$ in the refrigerator.'

Bliss (2014) argues that this diagnostic confirms the number neutrality of the bare noun, since it can be referred back to either by a singular or by a plural pronoun.

Another much-debated issue regarding true incorporation and pseudo-incorporation is the property of discourse transparency or referentiality. The origin of this controversy lies in the fact that there are not only significant differences across languages but also within languages. Several authors have considered discourse opacity as a crucial property for incorporation (Erguvanlı, 1984 for Turkish; Mithun, 1984 for Oceanic languages; Dayal, 1999 for Hindi; Lazaridou-Chatzigoga, 2011 for Greek; among others). In contrast, Baker (1988) assumes that the discourse transparency of incorporated nouns is a crucial argument for the head-movement account of noun incorporation.[38] Massam (2001) observes that the discourse transparency of pseudo-incorporated nouns in Niuean depends on the type of the pseudo-incorporated noun. In particular, she observes two types of pseudo-incorporation in Niuean, "general PI", which involves non-referential nominals that cannot support discourse anaphora, and "existential PI", which is restricted to a small set of predicates that involve discourse transparent nominals. Dayal (2011) shows that while pseudo-incorporated nouns that receive a number-neutral interpretation, depending on aspectual quantification, are discourse opaque, pseudo-incorporated nouns that favor a singular interpretation are discourse transparent. Espinal & McNally (2011) argue that pseudo-incorporated nouns in Catalan are not discourse transparent although they can be referred back to by personal pronouns. Instead, they suggest an accommodation-based account in which rhetorical relations affect the anaphoric relation between the pronoun and the pseudo-incorporated noun.

[38] See also example (22) from West Greenlandic, in which incorporated nouns support discourse anaphora.

As is apparent from the previous investigations, discourse transparency has often been considered in a binary fashion: a pseudo-incorporated noun has either been classified as discourse transparent or as discourse opaque. Farkas & de Swart (2003) provide the first evidence that discourse transparency is a gradient rather than a binary property. They use the term "discourse translucent" for cases in Hungarian where pseudo-incorporated nouns can only be referred back to by covert pronouns. Consider the example in (93) (taken from Farkas & de Swart, 2003: 18,19; emphasis in bold added).

(93) a. János$_i$ **beteget$_j$** vizsgált a rendelőben.
János patient.ACC examine.PST the office.in
'János patient-examined in the office.'

b. pro$_i$ Túl sulyosnak találta **pro$_j$ / #őt$_j$** és
pro too severe.DAT find.PST pro / he.ACC and
beutaltatta pro$_j$ a korházba.
intern.CAUS.PST pro the hospital.in
'He$_i$ found him$_j$ too sick and sent him$_j$ to hospital.'

The pseudo-incorporated noun *beteget* 'patient' in (93) supports pronominal reference with a covert pronoun but not with an overt pronoun. In contrast, the regular indefinite *egy beteget* 'a patient' in (94) can act as the antecedent of the overt pronoun *őt* 'he'.

(94) a. János$_i$ **egy beteget$_j$** vizsgált a rendelőben.
János$_i$ a patient.ACC examine.PST the office.in
'János examined a patient in the office.'

b. pro$_i$ Túl sulyosnak találta **pro$_j$ / őt$_j$** és
pro too severe.DAT find.PST pro / he.ACC and
beutaltatta pro$_j$ a korházba.
intern.CAUS.PST pro the hospital.in
'He$_i$ found him$_j$ too sick and sent him$_j$ to hospital.'

Farkas & de Swart (2003) explain the discourse translucent cases by assuming that pseudo-incorporated nouns in Hungarian do not introduce discourse referents on their own. Rather, they treat pseudo-incorporated nouns as uninstantiated thematic arguments that can only be referred back to by covert pronouns via binding.[39]

[39] Yanovich (2008) provides a counterexample in (216) and shows that anaphora to singular pseudo-incorporated nouns are indeed possible. I will elaborate more on this issue in chapter 3.

Similarly to Farkas & de Swart (2003), Law & Syrett (2017) claim that bare nouns in Mandarin can be classified as discourse translucent, since pronominal reference to a bare noun with overt pronouns is less acceptable than to regular indefinites.[40]
Modarresi (2014) puts forth the analysis of Farkas & de Swart (2003) insofar as she adopts the view of discourse translucency for Persian, however, she argues that Persian pseudo-incorporated nouns do indeed introduce number-neutral discourse referents (following Kamp & Reyle, 1993). She provides the examples in (95) (taken from Modarresi, 2014: 68, 69; emphasis in bold added) to illustrate that Persian pseudo-incorporated nouns can be referred back to by overt and covert pronouns, in contrast to Hungarian.

(95) a. Mœn **mobile$_i$** khœrid-œm. Gozasht-æm-Ø$_i$-**esh$_i$** /*-eshoon$_i$ roo-ye-miz.
I cell.phone bought-1SG put-1SG-Ø/-it/-them on-EZ-table
'I bought a **cell phone$_i$**. I have put **it$_i$** / *them$_i$ on the table.'

b. Mœn **ketab$_i$** khœrid-œm ke bara-t bi-ar-œm-**Ø$_i$**/?-esh$_i$/?-eshoon$_i$.
I book bought-1SG that for-2SG SUBJ-bring-1SG- Ø/-it/-them
'I bought a book(s)$_i$ to bring **it$_i$** / **them$_i$** for you.'

c. Mœn **havij$_i$** khœrid-œm. Mitoon-i khoord-Ø$_i$ /*-esh$_i$/**-eshoon$_i$** koni?
I carrot bought-1SG can-2SG cut-Ø/-it/-them do.1SG
'I bought **carrots$_i$**. Can you cut *it$_i$ / **them$_i$**?'

Modarresi (2014) claims that, depending on world knowledge, one or more entities are evoked. In example (95a), world knowledge suggests that the pseudo-incorporated noun refers to one atomic entity. In such cases pseudo-incorporated nouns obtain visibility and allow for overt anaphoric reference. In example (95b) the pseudo-incorporated noun *ketab* 'book' denotes an atom or a sum and hence an overt pronoun is dispreferred. In cases where the situation suggests that the pseudo-incorporated noun refers to a plural entity, as in (95c), anaphoric reference by an overt plural pronoun or a covert pronoun is possible.

[40] Law & Syrett (2017) present the first experimental investigation for the discourse properties of bare nouns in Mandarin. They do not provide any theoretical claims with regard to object incorporation of bare nouns in Mandarin.

However, Dayal (2011) argues that aspectual information determines discourse transparent cases, albeit rare, in Hindi.[41] Consider the examples in (96) and (97) (taken from Dayal, 2011: 159; emphasis in bold added; see also Dayal, 2015).

(96) a. anu-ne apne beTe ke-liye **laRkii$_i$** cun lii.
Anu-ERG self's son for girl choose COMPL-PFV
'Anu has **girl$_i$**-chosen for her son.'

b. vo ab **us$_i$**-se baat kar rahii hai.
she now her-INSTR talk do PROG be-PRS
'She is now talking to **her$_i$**.'

b′. us-ne **us$_i$**-ko ek sone-kaa cen diyaa hai.
she-ERG her-DAT one gold necklace give-PFV be-PRS
'She has given **her$_i$** a gold necklace.'

In the case of a telic reading the pseudo-incorporated noun *laRkii* 'girl' in (96a) can be referred back to with a singular pronoun either in direct object position as in (96b) or in indirect object position as in (96b′).

(97) a. anu-ne do saal tak apne beTe ke-liye **laRkii$_i$** dekhii.
Anu-ERG two year for self's son for girl see-PFV
'Anu **girl$_i$**-saw for her son for two years.'

b. vo hamesha #**us$_i$**-se/**laRkii$_i$**-se ek hii savaal
she always #her-INSTR/girl-INSTR one only question
puchtii thii.
ask-IMP be-PST
'She always asked **#her$_i$** / **the girl$_i$** the same question.'

Contrastingly, in the case of an atelic reading the pseudo-incorporated noun *laRkii* 'girl' in (97a) cannot be picked up by a singular pronoun as in (97b). This is because the activity of looking at the same prospective bride repeatedly over a two-year period

[41] Kiefer (1990–91) argues that although incorporated objects in Hungarian cannot be taken up by pronouns, in case of objects of result they may antecede an overt pronoun, as shown in (3) (taken from Kiefer, 1990–91: 152).

(3) Jancsi levelet írt és aztán elment a postára
Steve letter-ACC write-PST and then go-PST the post office.on
és feldadta (azt).
and mail-PST (it)
'Steve wrote a letter, went to the post office and mailed it.'

conflicts with world knowledge. According to Dayal (2011) a reading where individuals vary with sub-events of *bride-looking* is compatible with a definite noun phrase as a continuation in (97b).

On the other hand, Espinal & McNally (2011) argue that pseudo-incorporated nouns in Catalan are discourse opaque. They provide the contrast in (98) (taken from Espinal & McNally, 2011: 94, 95; indices added), which shows that unlike the indefinite *una faldilla* 'a skirt' in (98a), the pseudo-incorporated noun *faldilla* in (98b) cannot be referred back to by the personal pronoun *la* 'it'.

(98) a. Avui porta **faldilla$_i$**. **#La$_i$** hi vam regular
today wear.3SG skirt it.ACC her -DAT PST.1PL give.present
l'any passat.
the.year last
'Today she is wearing a **skirt$_i$**. We gave #**it$_i$** to her as a present last year.'

b. Avui porta **una faldilla$_i$**. **La$_i$** hi vam regular
today wear.3SG a skirt it.ACC her -DAT PST.1PL give.present
l'any passat.
the.year last
'Today she is wearing a **skirt$_i$**. We gave **it$_i$** to her as a present last year.'

Instead, a partitive pronoun *en* 'one', which can only pick up nouns denoting properties, must be used, as shown in (99) (taken from Espinal & McNally, 2011: 95).

(99) Avui porta **faldilla$_i$**. Li'**n$_i$** vam regular una
today wear.3SG skirt her.DAT.PART PST.1PL give.present one
l'any passat.
the.year last
'Today she is wearing a **skirt$_i$**. We gave her **one$_i$** as a present last year.'

According to Espinal & McNally (2011), these anaphora facts strongly suggest that pseudo-incorporated nouns in Catalan do not introduce discourse referents. However, they give the following example (100) (taken from Espinal & McNally, 2011: 97), in which a personal pronoun appears to pick up a pseudo-incorporated noun.[42]

[42] Lazaridou-Chatzigoga (2011) gives the Greek equivalents to Espinal & McNally's (2011) examples showing similar effects. Likewise, Cyrino & Espinal (2014) show that bare nouns in the complement position of HAVE-predicates in Brazilian Portuguese cannot antecede personal pronouns. However, they

(100) Per la festa es va posa **faldilla$_i$**. Se **l$_i$'**havia
to the party CL PST.3SG put. on. skirt CL it.ACC.had
comprat la tarda anterior.
bought the afternoon before
'She put on a **skirt$_i$** for the party. She had bought **it$_i$** the day before in the afternoon.'

Espinal & McNally (2011) argue that in these cases the pronoun is not directly anaphoric to the pseudo-incorporated noun, but rather has an antecedent that is accommodated by the hearer into the common ground. Furthermore, they claim that the accommodation of a discourse referent depends on the rhetorical relation and the corresponding licensing of a discourse topic (see Jasinskaja, 2010 for a discussion of discourse relations and topicality). They thus assume that the two pronouns require different discourse rhetorical structures. In the discourse (98b), the partitive pronoun *en* 'one' refers back to the antecedent property denoted by the bare noun *faldilla* 'skirt', but cannot introduce a discourse referent to a particular skirt. By contrast, the accusative pronoun *el* 'it' in (100) is licensed because it identifies a new discourse topic by means of the prepositional complement *per la festa* 'for the party'. In other words, the personal pronoun *el* is licensed as a result of accommodating information to the common ground, which increases the identifiability of a discourse referent.

2.3 Intermediate discussion

Summing up the discussion so far, I have reviewed the literature on noun incorporation, starting with initial considerations about object incorporation. I have also illustrated the considerable debate concerning its place in the lexicon, syntax or both. Additionally, the discussion has transitioned to the semantic hallmarks of object incorporation, applicable to both true incorporation and pseudo-incorporation, as summarized in Table 2 below.

claim that bare nouns in the complement position of HAVE-predicates can antecede covert pronouns in object position.

Table 2. Properties of true incorporation and pseudo-incorporation.

True incorporation		**Pseudo-incorporation**
Morpho-syntactic properties	*Shared semantic properties*	*Morpho-syntactic properties*
minimal nominal structure (N^0)	a. narrow scope b. number neutrality c. reduced discourse referentiality d. name-worthiness	reduced nominal structure (NP/NumP)

Table based on Massam's (2009a, 2009b) and Dayal's (2011) observations.

In this context, I have delineated several properties that demonstrate cross-linguistic stability, as well as others that seem to be language-dependent, displaying variability. These properties are succinctly summarized in Table 3 below.

Table 3. Cross-linguistically shared and variable properties.

Stable properties	**Variable properties**
a. narrow scope	a. number neutrality
b. presence of a full-fledged (indefinite) counterpart	b. reduced discourse transparency
c. truth-conditional equality	
d. name-worthiness	

The properties in the right column interconnect. For instance, if an incorporated noun lacks discourse transparency – meaning that it does not introduce a discourse referent and cannot be pronominally taken up in the subsequent discourse – it also tends to lack a specific interpretation and the potential for number interpretation, and vice versa (Grimm, 2013). This raises the question of why the properties in the right column appear to be less stable or perhaps more gradient than those in the left column. This variability is likely to be linked to language-specific features of incorporation or pseudo-incorporation. For instance, Massam (2001) shows that in Niuean, there is no uniformity with respect to discourse transparency even within the language. Similarly,

Farkas & de Swart (2003) illustrate that discourse transparency in Hungarian depends on morphological number marking of the pseudo-incorporated noun (see also Dayal, 1999 for Hindi).

To address this question more thoroughly, more fine-grained data is required. In an attempt to provide answers, Turkish will be the primary language of empirical investigation for two reasons. Firstly, it has been extensively studied in the literature on noun incorporation. Secondly, there is an ongoing debate in the literature regarding whether incorporated nouns in Turkish have the ability to introduce discourse referents that are accessible anaphorically in subsequent discourse. New empirical data will be presented in sections 3.4 and 4.5. Additionally, various DRT frameworks addressing the number neutrality and discourse transparency of pseudo-incorporated nouns will be discussed in section 3.2. Before delving into the discourse-semantic properties of number neutrality and discourse transparency in Turkish, which form the empirical focus of this dissertation, an overview of the existing frameworks for noun incorporation in Turkish will be provided in the next section 2.4.

2.4 Different accounts for Turkish bare nouns

The in-depth discussion of noun incorporation sparked a debate on whether incorporation in Turkish is of morphological or syntactic nature. On the basis of Baker's (1988) head-incorporation account, several linguists argued for a syntactic treatment of incorporation in Turkish (Kornfilt, 1995, 2003; Aydemir, 2004; among others). Some linguists suggested analyzing certain bare nouns as either incorporated or not incorporated, depending on factors such as the noun-verb combination, predicate type or aspectual properties (Schroeder, 1999; Aksan, 2007; Demiral, 2007; Köylü, 2018). Other linguists claimed that the head-incorporation analysis à la Baker (1988) is controversial, proposing a pseudo-incorporation account with different assumptions regarding the treatment of bare nouns and regular indefinites (*bir* nominals) on syntactic and/or semantic grounds (Öztürk, 2003b, 2005a; Kamali, 2015;). An overview of the different approaches is given in Table 4.

Table 4. Previous approaches to bare nouns and *bir* nominals in Turkish.

Approach[43]	**bare noun**	***bir* nominal**
Kornfilt (1995)	not incorporated	not incorporated
Aksan (1995), Kornfilt (2003)	incorporated	incorporated
Tura (1973), Dede (1986), Mithun (1984), Knecht (1986), Nilsson (1986), Kuribayashi (1989, 1990), Sezer (1991), Aydemir (2004)	incorporated	not incorporated
Erguvanlı (1984)	inconclusive	not incorporated
Schroeder (1999), Aksan (2007)	incorporated or transnumeral depending on N-V combination	not incorporated
Demiral (2007)	incorporated in atelic predication	not incorporated
Köylü (2018)	incorporated depending on predicate type	not incorporated
Ketrez (2005)	complex predicate	no complex predicate
Öztürk (2005a)	pseudo-incorporated/complex predicate	pseudo-incorporated/complex predicate
Kamali (2015)	pseudo-incorporated	not pseudo-incorporated
Arslan-Kechriotis (2009)	adhesion	no adhesion

[43] Some of the approaches also consider subjects and argue that both bare objects and bare subjects, along with their caseless indefinite counterparts, undergo incorporation.

In the upcoming section 2.4.1, I delve into the approaches that fall into the accounts of true incorporation, pseudo-incorporation or adhesion.

2.4.1 The true incorporation account

The examples given in the a and b versions of (101) and (102) (adapted from Öztürk, 2005a: 32; emphasis in bold added) are taken to be typical examples of true incorporation in Turkish. The examples in (101c) and (102c) represent their non-incorporated case-marked counterparts.[44]

(101) a. Ahmet **kitap** oku-du.
Ahmet book read-PST
'Ahmet did book-reading.'

b. Ahmet **bir** **kitap** oku-du.
Ahmet a book read-PST
'Ahmet read a book.'

c. Ahmet **kitab-ı** oku-du.
Ahmet book-ACC read-PST
'Ahmet read the book.'

(102) a. Köye **doktor** gel-di.
village-DAT doctor come-PST
'Doctors came into the village.'

b. Köye **bir** **doktor** gel-di.
village-DAT a doctor come-PST
'A doctor came into the village.'

c. **(Bir) doktor** köye gel-di.
a doctor village-DAT come-PST
'A/The doctor came into the village.'

Erguvanlı (1984) who was one of the first ones to claim that bare objects in Turkish might undergo true incorporation discusses cases like those in (101a) and (101b).

[44] Öztürk (2005a) calls the constructions in (101a) and (102a) as instances of "theme incorporation". The former illustrates theme incorporation with a transitive verb, whereas the latter is an example of theme incorporation with an unaccusative verb.

According to her, there are arguments both for and against true incorporation in Turkish.

To begin with arguments in favor of true incorporation, Erguvanlı (1984) shows that the bare noun and the verb cannot be separated as shown in (103) (adapted from Erguvanlı, 1984: 24; emphasis in bold added).

(103) *Ahmet kitap **isteksiz** oku-yor.
Ahmet book unwillingly read-PROG
Intended: 'Ahmet is book-reading unwillingly.'

Her second argument is concerned with movement possibilities. The position of the bare object is fixed and it cannot occur after the predicate as illustrated in (104) (adapted from Erguvanlı, 1984: 24; emphasis in bold added).[45]

(104) *Ahmet isteksiz oku-yor **kitap**.
Ahmet unwillingly read-PROG book
Intended: 'Ahmet is book-reading unwillingly.'

Erguvanlı's third argument is that the bare object cannot head relative constructions, i.e., it cannot be singled out as an independent constituent from the syntactic unit it forms with the verb, as is shown in (105) (adapted from Erguvanlı, 1984: 25; emphasis in bold added).

(105) *Nurten **bil-me-diğ-im** **şarkı** söylü-yor.
Nurten know-NEG-OP-POSS.1SG song say-PROG
'Nurten is singing a song that I do not know.'

Nevertheless, Erguvanlı (1984) also presents also arguments that do not support an incorporation analysis of bare objects in Turkish.

[45] İşsever (2008: 12) claims that bare objects without contrastive stress can undergo scrambling if they are "recoverable from the context", as in (4) (taken from İşsever, 2003: 1049). Note that stressed elements are banned in the postverbal position in Turkish (Erguvanlı, 1984; Kural, 1992, among others; see also Uygun (2006), Öztürk (2009) and Gračanin-Yüksek & İşsever (2011) for further examples).

(4) A. Hadi bakalım sen dersini çalış.
'Get to it now and study your lessons.'

B. [$_F$ Bugün t_i ÇALIŞ-MA-YACAĞ-IM] ders$_i$.
today study-NEG-FUT-1SG lesson
'I won't study today.'

Firstly, she claims that according to Hopper & Thompson (1980), we might expect incorporation to lead to detransitivization, but the passive test does not tell us whether the noun-verb unit is detransitivized, since intransitive verbs can be passivized as well as transitive verbs in Turkish. Consider the examples in (106) and (107) (taken from Erguvanlı, 1984: 25; emphasis in bold added).

(106) a. Geçen hafta **dağ-a** **git-ti-k**.[46]
last week mountain-DAT go-PST.1PL
'We went to the mountains last week.'

b. Geçen hafta **dağ-a** **gid-il-di**.
last week mountain-DAT go-PASS-PST
Lit. 'It was went to the mountains last week.'

(107) a. Biz-im ev-de çok gürültü ol-uyor,
we-GEN house-LOC much noise be-PROG
hiç **ders** **çalış-a-mı-yor-um**.
not.at.all lesson study-ABIL-NEG-PROG-1SG
'There is too much noise at our house, I cannot study at all.'

b. Biz-im ev-de çok gürültü ol-uyor,
we-GEN house-LOC much noise be-PROG
hiç **ders** **çalış-ıl-mı-yor**.
not.at.all lesson study-PASS-NEG-PROG
'There is too much noise at our house, one cannot study at all.'

Secondly, Erguvanlı (1984) shows that although adverbs may not intervene between the object and the verb, there is a set of particles, i.e., the focusing Yes/No question particle *-mI*, the particle *–DA* 'too' and the particle *bile* 'even', that can come between the object and the verb, as shown in (108) (adapted from Erguvanlı, 1984: 26; emphasis in bold added; see also Tura, 1973 and Kornfilt, 2003).[47]

[46] According Orgun & Inkelas (2004) this is an example of "semantic incorporation".

[47] Orgun & Inkelas (2004) provide further examples for the claim that the bare object and the verb do not form a syntactic unit. The occurrence of *falan* 'and such' is possible, as in (5a). Moreover, the bare object *kitap* 'book' can be reduplicated, as in (5b) (adapted from Orgun & Inkelas, 2004: 268; emphasis in bold added).

(5) a. Ahmet kitap **falan** oku-ma-z.
Ahmet book et cetera read-NEG-AOR
'Ahmet does not read books and the like.'

(108) a. Ahmet kitap **da** oku-du.
Ahmet book too read-PST
'Ahmet did book-reading, too.'

b. Ahmet kitap **bile** oku-du.
Ahmet book even read-PST
'Ahmet even did book-reading.'

c. Ahmet kitap **mı** oku-du?
Ahmet book Q read-PST
'Ahmet did book-reading?'

Finally, Erguvanlı (1984) notes that, with regard to (104), whether an adverb can intervene between the object and the verb is dependent on the presence or absence of accusative marking rather than on the bareness of the object. That is, an indefinite object without accusative marking (*bir* nominal) behaves exactly like a bare object in this respect, as shown in (109) (adapted from Erguvanlı, 1984: 26).

(109) a. *Ahmet bir kitap **aceleyle** oku-yor.
Ahmet a book hurriedly read-PROG
Intended: 'Ahmet is reading a book hurriedly.'

b. Ahmet **aceleyle** bir kitap oku-yor.
Ahmet hurriedly a book read-PROG
'Ahmet is reading a book hurriedly.'

As (109) shows, the adverb must precede the *bir* nominal and cannot come between the object and the verb, which is indicated by the ungrammaticality of (109a). The case-marked indefinite *bir kitabı*, however, shows no restriction with regard to intervening adverbs. According to Erguvanlı (1984), this indicates that *bir* nominals and bare objects belong to the same category as far as word order restrictions are concerned. However, Erguvanlı (1984: 23) claims that bare nouns and *bir* nominals must be distinguished semantically. She argues that, in contrast to *bir* nominals, bare nouns are not specified for number; that is, the bare object expresses a "single activity" without making any number distinction. Another criterion for distinguishing bare

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b. Ahmet kitap **mitap** oku-ma-z.
Ahmet book REDUP read-NEG-AOR
'Ahmet does not read books and the like.'

nouns from *bir* nominals is "the ability of the latter, but not the former, to pronominalize", as shown in (110) (adapted from Erguvanlı, 1984: 23).[48]

(110) a. Ahmet kaç gün-dür **resim$_i$** yap-ıyor-du.
Ahmet how.many day-ADV picture make-IMP-PST
Nihayet ***pro$_i$***/***on-u$_i$** bitir-di.
finally pro/it-ACC finish-PST
'Ahmet was picture-painting for days. He finally finished it.'

b. Ahmet kaç gün-dür **bir** **resim$_i$** yap-ıyor-du.
Ahmet how.many day-ADV a picture make-IMP-PST
Nihayet ***pro$_i$***/**on-u$_i$** bitir-di.
finally pro/it-ACC finish-PST
'Ahmet was painting a picture for days. He finally finished it.'

In sum, Erguvanlı (1984: 26) concludes that it is not clear whether the bare object in Turkish is indeed a case of true incorporation.

Knecht (1986) proposes an alternative analysis, contending that bare objects undergo incorporation into the verb.[49] In particular, she claims that bare objects form syntactic compounds with the verb.[50] Her analysis is based on several empirical facts. First, she argues that the immediate preverbal position is the focus position in Turkish, and that focused constituents can displace a case-marked object from this slot, as in (111b), whereas bare objects cannot be displaced, as in (111d).

(111) a. Nurten dün **mektub-u** oku-du.
Nurten yesterday letter-ACC read-PST
'Nurten read the letter yesterday.'

b. Dün **mektub-u** Nurten oku-du.
yesterday letter-ACC Nurten read-PST
'It was Nurten who read the letter yesterday.'

[48] According to Kornfilt (2007) it is not clear whether the direct object is a "pro". Instead, Kornfilt (2007) argues that it could be the trace (or silent copy) of an empty topicalization operator that is in clause-initial topic position.

[49] Knecht (1986) provides an analysis within the framework of Relational Grammar (Perlmutter, 1980) and argues that incorporees (bare objects and preverbal subjects) are not final chômeurs, as has been claimed before, but instead bear the final-stratum relation INC(orporated).

[50] Note that Knecht (1986) does not assume a lexical compounding process like Mithun (1984). Kuribayashi (1990) proposes a syntactic compounding analysis similar to Knecht (1986).

c. Nurten dün **mektup** oku-du.
Nurten yesterday letter read-PST
'Nurten did letter-reading yesterday.'

d. *Dün **mektup** Nurten oku-du.
yesterday letter Nurten read-PST
Intended: 'It was Nurten who did letter-reading yesterday.'

Second, Knecht (1986) also argues that bare objects cannot be postponed to the right of the verb, as in (112b), unlike their case-marked counterparts, as in (112a).

(112) a. Ahmet oku-du **mektub-u**.
Ahmet read-PST letter-ACC
'Ahmet read the letter.'

b. *Ahmet oku-du **mektup**.
Ahmet read-PST letter
Intended: 'Ahmet did letter-reading.'

Third, she claims that bare objects cannot be topicalized, as in (113d), whereas their case-marked counterparts can occur in topic position, as in (113b) (adapted from Knecht, 1986: 86; emphasis in bold added).[51]

(113) a. Bebek-ten **et-i** al-dı-m.
Bebek-ABL meat-ACC buy-PST-1SG
'I bought the meat from Bebek.'

b. **Et-i** Bebek-ten al-dı-m.
meat-ACC Bebek-ABL buy-PST-1SG
'The meat, I bought from Bebek.'

c. Bebek-ten **et** al-dı-m.
Bebek-ABL meat buy-PST-1SG
'I bought meat from Bebek.'

[51] Öztürk (2009) claims that, under specific discourse conditions, it is possible to topicalize a bare noun, as shown in (6) (taken from Öztürk, 2009: 339).

(6) Çay$_i$ ben t$_i$ iç-me-di-m.
tea I drink-NEG-PST-1SG
'I did not do tea-drinking.'

d. ***Et** Bebek-ten al-dı-m.
meat Bebek-ABL buy-PST-1SG
Intended: 'Meat, I bought from Bebek.'[52]

Fourth, manner adverbs can intervene between a case-marked noun and a verb, as in (114b). In contrast, this results in ungrammaticality when the noun is bare, as in (114d) (adapted from Knecht, 1986: 87; emphasis in bold added).[53]

(114) a. Ahmet yavaş yavaş **kitab-ı** oku-yor.
Ahmet slow slow book-ACC read-PROG
'Ahmet is reading the book slowly.'

b. Ahmet **kitab-ı** yavaş yavaş oku-yor.
Ahmet book-ACC slow slow read-PROG
'Ahmet is reading the book slowly.'

c. Ahmet yavaş yavaş **kitap** oku-yor.
Ahmet slow slow book read-PROG
'Ahmet does book-reading slowly.'

d. *Ahmet **kitap** yavaş yavaş oku-yor.
Ahmet book-ACC slow slow read-PROG
'Ahmet does book-reading slowly.'

Fifth, Knecht (1986) claims that non-derived adverbs, which usually occur preverbally, cannot occur immediately before the verb in the case of a bare object. She provides the examples in (115) (adapted from Knecht, 1986: 88; emphasis in bold added; see also Erguvanlı, 1984).[54]

(115) a. Nurten kitab-ı **hızlı** oku-yor.
Nurten book-ACC quickly read-PROG
'Nurten is reading the book quickly.'

[52] Jaklin Kornfilt (personal communication) claims that such examples are acceptable, especially with other tense/aspect markers: *Et her zaman Bebekten alırım.* 'I always buy meat from Bebek.' or *Et (dediğin) Bebekten alınır.* 'One buys meet from Bebek.'

[53] Erguvanlı (1984) provides similar examples, as shown in (109).

[54] Jaklin Kornfilt (personal communication) has pointed out to me that *hızlı* is indeed derived: *hız* 'force' + *-lI*. Consequently, the generalization that non-derived adjectives can only appear to the left of the verb is not accurate here.

b. *Nurten **hızlı** kitab-ı oku-yor.
Nurten quickly book-ACC read-PROG
Intended: 'Nurten is reading the book quickly.'

c. Nurten **hızlı** kitap oku-yor.
Nurten quickly book read-PROG
'Nurten does book-reading quickly.'

d. *Nurten kitap **hızlı** oku-yor.
Nurten book quickly read-PROG
Intended: 'Nurten does book-reading quickly.'

Finally, sentence stress in Turkish usually falls on the verb when all the other constituents are presupposed in discourse, as in (116) (taken from Knecht, 1986: 90).

(116) A: Köpek kedi-yi ısır-dı, değil mi?
dog cat-ACC bite-PST not Q
'The dog bit the cat, didn't it?'

B: Isır-ma-dı. Köpek kedi-yi <u>yala-dı</u>.
bite-NEG-PST dog cat-ACC lick-PST
'No, the dog licked the cat.'

However, in the case of bare objects sentence stress falls on the bare noun rather than on the verb, as in (117) (adapted from Knecht, 1986: 91).

(117) A: Nurten oda-sın-da mektup yaz-ıyor değil mi?
Nurten room-POSS.3SG-LOC letter write-PROG not Q
'Nurten is writing letters in her room, isn't she?'

B: Hayır. Yaz-mı-yor. <u>Mektup</u> oku-yor. / *Mektup <u>oku-yor</u>.
no write-NEG- PROG letter read-PROG
'No, she is reading letters.'[55]

Knecht (1986) concludes that the bare noun and the verb have the structure of a syntactic compound applying after a syntactic rule. This is supported by the observation that in lexical compounds, peak stress is assigned to the primary stressed syllable in the first element of the compound, even when it is contrastive, as in <u>*portakal*</u>

[55] Jaklin Kornfilt (personal communication) informed me that there are native speakers of Turkish who accept examples like *Hayır. Yazmıyor. Mektup OKUYOR*.

reçeli ‘orange jelly’.[56] Following Erguvanlı’s (1984) observations, Knecht (1986) argues that although *bir* nominals must occupy an immediately preverbal position like bare objects, they do not incorporate. To account for cases like that in (118) (adapted from Knecht, 1986: 94; emphasis in bold added) Knecht argues that the bare noun and its modifying adjective incorporate into the verb, freeing up the immediately preverbal position for the adverb *hızlı* ‘quickly’. Consequently, incorporation does not solely apply to noun stems; instead, it applies to noun phrases (see Chung & Ladusaw, 2004 for a similar proposal in Chamorro).

(118) Nurten hızlı **resimli** **kitap** oku-yor.
Nurten quickly illustrated book read-PROG
‘Nurten is reading illustrated books fast.’

Nilsson (1986) also proposes a compounding analysis. Unlike Knecht (1986), she states that object incorporation takes place in the lexicon. She does not contest a syntactical analysis per se but rather challenges a syntactic analysis outside of the lexicon, as she believes it causes problems with regard to the semantic aspects of the incorporation process. In her work, Nilsson (1986: 116, 125) argues that Turkish compounds “characteristically denote typical activities or states of affairs” and that they can be envisioned as a “development along a continuum from complete transparency to opaqueness”. She provides the lists in Table 5, separating regular compounds (a) on the one side and idioms (b1) and (b2) on the other. The division between the two lists (b1) and (b2) reflects different degrees of idiomaticity. In Nilsson’s analysis, regular compounds in (a), such as *dil bilmek* ‘know a (foreign) language/languages and idioms in (b1), such as *göz atmak* ‘glance (at/through)’, as well as idioms in (b2), such *göz yummak* ‘overlook’, are subject to the same analysis. Nilsson (1986: 121) emphasizes that the degree of idiomaticity (“the conception of the singlehood”) can be measured in terms of the semantic effect on the compound by exchanging the noun or the verb.

[56] This does not appear to be necessarily the case: *Portakal REÇELİ yaptım, portakal likörü değil*. ‘I made orange jam, not orange liqueur.’ or *Portakal REÇELİ yedim, portakal kabuğu değil*. ‘I ate orange jam, not orange peel.’ Examples from Jaklin Kornfilt (personal communication).

Table 5. From regular compounds to idioms.

Regular compounds (a)	**Idioms (b1)**	**Idioms (b2)**
balık tutmak 'catch fish'	*sopa atmak* '(stick throw), beat up'	*boyun eğmek* '(neck bend), submit'
halı almak 'buy a carpet(s)'	*surat asmak* '(face hang), frown'	*parmak basmak* '(finger press), draw attention'
kahve söylemek '(coffee say), order coffee'	*yemek seçmek* '(food choose), be choosy about food'	*kafa tutmak* '(head hold), go against, oppose'
oy vermek 'give a vote/to vote'	*kahkaha atmak* '(laughter throw), burst out laughing'	*baş vurmak* '(head hit), apply'

Examples adapted from Nilsson (1986: 117, 118). Translations in parentheses show literal meaning.

For instance, she argues that *balık tutmak* 'to fish' forms a tighter unit than *kitap okumak* 'read a book / books', due to the fact that the noun *balık* 'fish' specifies the action to a greater extent than the noun in *kitap okumak*. Reading is a uniform activity that is less dependent on the object, whereas hunting is carried out in many different ways depending on the object hunted. On the other hand, Nilsson (1986) notes that compounds *balık tutmak* 'to fish' and *kitap okumak* 'read a book / books' share more similarities than idiomatic expressions where neither the noun nor the verb can be replaced without a semantic shift of the whole compound. Nevertheless, she underscores that a joint lexical treatment of regular compounding and idioms makes the incorporation process appear as a more homogeneous process. Nilsson (1986) emphasizes that noun incorporation in different languages varies considerably with regard to word structure. She highlights Sadock's (1980) account of West Greenlandic as a derivational process, where a new denominal verb is formed from non-independent verbal suffixes. However, for Turkish, she posits a compounding process uniting two independent words.

Similarly, Mithun (1984: 847) characterizes noun incorporation as a morphological process in which "a N[oun] stem is compounded with a V[erb] stem to yield a larger derived V stem". Thus, she describes incorporation as a morphological compounding process, which takes place in the lexicon. Based on adjacency properties, Mithun (1984) states that Turkish exhibits the properties of Type I noun incorporation

languages, similar to those in Oceanic and Mayan languages. She presents the Turkish example in (119) (adapted from Mithun, 1984: 873) and claims that Turkish belongs to the subcategory of "composition by juxtaposition", mentioned earlier in section 2.1.1.

(119) Ahmet her gün pipo iç-iyor.
Ahmet every day pipe drink-PRS
'Ahmet pipe-smokes every day.'

Mithun (1984) emphasizes that incorporated nouns in Turkish denote name-worthy, unitary concepts, which is particularly typical for Type I incorporating languages. She takes these facts as evidence of the general tendency for the verb and the object to coalesce and the resulting form to serve to background the object.

Similarly to Mithun (1984) and Nilsson (1986), Schroeder (1999) claims that noun incorporation in Turkish is a productive morphological process. However, Schroeder distinguishes two categories of bare nouns: (indefinite and referential) transnumeral bare objects and (non-referential) incorporated objects. According to Schroeder (1999: 85), only the latter can be considered as a "highly productive morphological operation of ad-hoc compounding which may give rise to idiomatization". Schroeder (1999) states that, unlike incorporated objects, transnumeral objects can be modified, topicalized, excluded from the scope of verbal negation, may allow zero anaphora as a subsequent anaphoric device, and are syntactically referential and semantically indefinite. An example of a modified transnumeral bare object is given in (120) (taken from Schroeder, 1999: 80, emphasis in bold added).

(120) Bunlar şimdi beş yıldız-lı **otel** yap-ıyor-lar.
they now five star-with hotel make-PRS.3PL
'Now they build five-star hotels.' / 'Now they build a five-star hotel.'

The example in (121) shows that transnumeral objects allow zero anaphora in a turn-taking context (adapted from Schroeder, 1999: 64).

(121) A. Şiir yaz-dı mı?
poem write-PST Q
'Has he/she written poetry?'

B. ø Yaz-ma-dı.
write-NEG-PST
'He/she has not written any'

In contrast to transnumeral bare objects, incorporated objects are dependent parts of the verbal phrase (syntactically non-referential), and thus cannot be modified or topicalized, do not allow zero anaphora and are always within the scope of verbal negation. An example of an incorporated object is given in (122) (adapted from Schroeder, 1999: 81, emphasis in bold added).[57]

(122) Daha ciddi **tavır** takın-abil-me-leri gerek-ir.
more serious position gird-ABIL-NOM-POSS.3PL be.necessary-AOR
'It is necessary for them to be more seriously able to show a position.'

As illustrated in (122), the incorporated noun *tavır* 'attitude' cannot be modified on its own; the modification *ciddi* 'serious' refers to the whole noun-verb compound. Another example is presented in (123), demonstrating that the compound *zevk almak* 'to derive pleasure' cannot be reduced to *almak* after its introduction. In this way, the postverbal occurrence of *zevk* in the second sentence has to be interpreted as a "repairing device" to complete the verbal phrase (adapted from Schroeder, 1999: 81; original translation modified).

(123) A. Nasıl zevk al-ıyor-sun?
how fun take-PROG-2SG
'How do you derive pleasure?'

B. Ne yap-arken al-ıyor-sun … zevk?
what do-CONV take-PROG-PST fun
'What do you do to derive pleasure?'

Adopting Schroeder's (1999) categorization, Aksan (2007) argues that transnumeral and incorporated objects exert an influence on the aspectual composition of incremental theme verbs (i.e., verbs of creation/consumption, such as *kitap yazmak*

[57] Schroeder (1999: 77) argues that incorporation of subjects of intransitive verbs is also possible. Consider the example in (6).

(6) Ağaç-ta kuş otur-uyor.
tree-LOC bird sit-PROG
'There are birds sitting in the tree.'/'There is bird sitting in the tree.'

'write book' or *sandöviç yemek* 'eat sandwich', and performance verbs, such as *sonat çalmak* 'play sonata'). Specifically, she posits that non-idiomatized noun-verb combinations can be employed either as transnumeral or incorporated objects. Consider the example in (124), where the bare noun *mektup* 'letter' can serve either as a transnumeral object (124a) or as an incorporated object (124b), displaying aspectual variability (adapted from Aksan, 2007: 44, 45; indices and emphasis in bold added).

(124) a. Ahmet 10 dakika-da arkadaş-ın-a **mektup$_i$** yaz-dı
Ahmet 10 minute-LOC friend-POSS.3SG-DAT letter write-PST
ve **on-u$_i$** yolla-dı.
and it-ACC send-PST
'Ahmet wrote a letter to his friend in ten minutes and he sent it.'

b. Ahmet 10 dakika boyunca **mektup$_i$** yaz-dı ve
Ahmet 10 minute long letter write-PST and
***on-u$_i$** yolla-dı.
it-ACC send-PST
'Ahmet was involved in the activity of letter-writing for ten minutes and he sent it.'

Aksan (2007) asserts that the bare object in (124a) is transnumeral, as it is interpreted as an indefinite singular NP, where the entire act of *writing* is conceived as completed. This is why the bare noun can antecede an overt pronoun. On the other hand, the bare object in (124b) forms an incorporated unit with the verb: the object is number-neutral and non-referential, and the entire event does not attain its result state. (see Kiefer, 1990–91 for a similar observation in Hungarian, and Dayal, 2011 for Hindi).

Similar to Aksan (2007), Demiral (2007) claims that not all predicates are subject to object incorporation. He posits a lexical constraint governing object incorporation, particularly asserting that telicity defines the possibility of object incorporation. Consider the examples in (125) (adapted from Demiral, 2007: 58).

(125) a. Ahmet kitap oku-yor.
Ahmet book read-PROG
'Ahmet is doing book-reading.'

b. Ahmet kitap al-dı.
Ahmet book buy-PST
'Ahmet bought a/some books.'

Demiral (2007) explains that if the object is non-referential, it can take an atelic reading with the predicate only if the verb allows for atelic predication, as illustrated in (125a). However, if the object is paired with a verb biased towards a telic reading, it cannot undergo object incorporation, as in (125b).

Another account that takes the predicate type as an indicator of object incorporation is postulated by Köylü (2018). He proposes that bare nouns with eventive predicates (e.g. *drive*, *drink*, *buy*) are ambiguous between an incorporated and a non-incorporated reading while stative predicates (e.g. *know*, *like*, *hate*) obligatorily get a non-incorporated interpretation. This is exemplified by the examples in (126) (adapted from Köylü, 2018; see also Ketrez, 2005 for a similar concept).

(126) a. Ahmet hızlı araba sev-er.
Ahmet fast car like-AOR
'Ahmet likes fast cars.'

b. Ahmet hızlı araba kullan-ır.
Ahmet fast car use-AOR
'Ahmet drives fast cars/drives fast.'

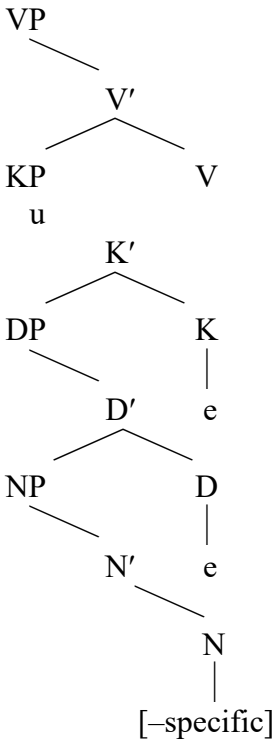
In (126a), the stative predicate permits adjectival modification of the noun, while in (126b), the eventive predicate allows for both adjectival and adverbial modification of the noun and the compound verb, respectively. Köylü (2018) postulates different syntactic configurations for preverbal bare nouns, thereby connecting his proposal to Carlson's (1977) stage level predicates (SLPs) and individual level predicates (ILPs). ILPs (stative predicates) express permanent properties of individuals, while SLPs (eventive predicates) are about the temporary or episodic properties of individuals. Carlson (2006) also argues that only stage level verbs allow object incorporation. He characterizes this as a stable property of incorporation across languages.

Another syntactic approach is presented by Kornfilt (1995, 2003), who proposes a head-movement analysis á la Baker (1988) for the data given in (127) (adapted from Kornfilt, 2003: 127; emphasis in bold added).

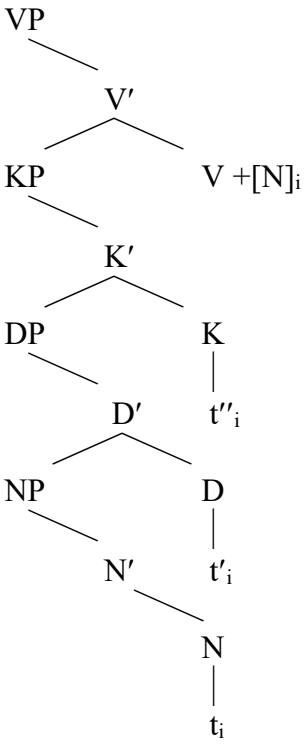
(127) Ahmet dün akşam **(bir) pasta** ye-di.
Ahmet yesterday evening a cake eat-PST
'Yesterday evening, Ahmet ate (a) cake [–specific].'

The moved noun forms a complex predicate with the verb. Kornfilt (2003) argues that DPs in Turkish are embedded within case phrases (KPs) as complements of a K-head.

(128) a. Before incorporation



b. After incorporation



In cases of incorporation, she assumes the K-head to be empty, as in (128a). For this reason, the noun can move into that position and then further into V and the traces left behind are properly governed as in (128b) (adapted from Kornfilt, 2003: 143).[58] In cases where the K-head is filled with an overt case marker, as in (101c), the N-head of the DP's NP cannot move to V. Note that, unlike Baker (1988) Kornfilt (2003) assumes that subjects head-incorporate in Turkish. In particular, she proposes that they incorporate into the verb out of their position (SPEC, AGRsP) in the same way as

[58] This account was first proposed by Kornfilt (1995) where she assumed an NP projection rather than a DP projection.

caseless objects. Consider the examples in (129) (taken from Kornfilt, 2003: 128-129; emphasis in bold added).

(129) a. Çocuğ-u **arı** sok-tu.
child-ACC bee sting-PST
'Bees stung the child.'

b. Çocuğ-u **bir** **arı** sok-tu.
child-ACC a bee sting-PST
'A bee [–specific] stung the child.'

c. **(Bir) arı** çocuğ-u sok-tu.
a bee child-ACC sting-PST
'A/The bee [+specific] stung the child.'

Kornfilt (2003) argues that the non-specific generic subject in (129a) and the non-specific indefinite subject in (129b) are head-incorporated into the verb, in contrast to its overtly case-marked counterpart in (129c). Following de Hoop (1992), she assumes that non-specific objects and subjects bear weak structural case, while their case-marked counterparts bear strong accusative and nominative case, respectively. Kornfilt's (2003) evidence for treating both *bir* nominals and bare nominals as syntactically incorporated comes from scrambling and subscrambling facts. She observes that, while direct objects with overt accusative case and subjects in nominalized embedded clauses with overt genitive case can freely scramble to different positions, their bare counterparts with dropped structural case cannot do so. Consider the following examples in (130) and (131) (adapted from Kornfilt, 2003: 128; emphasis in bold added).[59]

(130) a. *Ahmet **(bir)** **pasta** dün akşam ye-di.
Ahmet a cake yesterday evening eat-PST
Intended: 'Ahmet ate (a) cake [–specific] yesterday evening.'

[59] Kornfilt (2003) admits that under certain conditions, bare direct objects can show up in positions non-adjacent to the verb. For such cases she suggests that bare direct objects are base-generated in a left-dislocated position rather than topicalized by movement (see also Kornfilt, 2018).

b. Ahmet **(bir) pasta-yi** dün akşam ye-di.
Ahmet a cake-ACC yesterday evening eat-PST
'Ahmet ate the/a cake [+specific] yesterday evening.'

(131) a. *[Çocuğ-u **(bir) arı** bugün sok-tuğ-un]-u duy-du-m.
child-ACC a bee today sting-F.NOM-3SG-ACC hear-PST-1SG
Intended: 'I heard that bees/a bee [–specific] stung the child today.'

b. *[(**Bir**) **arı** çocuğ-u bugün sok-tuğ-un]-u duy-du-m.
a bee child-ACC today sting-F.NOM-3SG-ACC hear-PST-1SG
Intended: 'I heard that bees/a bee [–specific] stung the child today.'

c. [Bugün **(bir) arı-nın** çocuğ-u sok-tuğ-un]-u duy-du-m.
today a bee-GEN child-ACC sting-F.NOM-3SG-ACC hear-PST-1SG
'I heard that today, the bee/a bee [+specific] stung the child.'

d. [(**Bir**) **arı-nın** bugün çocuğ-u sok-tuğ-un]-u duy-du-m.
a bee-GEN today child-ACC sting-F.NOM-3SG-ACC hear-PST-1SG
'I heard that the bee/a bee [+specific] stung the child today.'

However, with regard to subscrambling (i.e., scrambling out of larger DPs) Kornfilt (2003) shows that subextraction is possible from nominal phrases whose non-case marked nominal head is incorporated, while when there is structural case, whether structural or oblique, this is not possible, as shown in (132) (taken from Kornfilt, 2003: 132, 133; emphasis in bold added).

(132) a. ?Bir daha **[e_i bir terzi]** bul-a-ma-m **[sen-in gibi]$_i$**.
one time a tailor find-F.ABIL-NEG-1SG you-GEN like
'I won't ever be able to find a tailor [–specific] like you again.'

b. *Bir daha **[e_i bir terzi]-yi** bul-a-ma-m **[sen-in gibi]$_i$**.
one time a tailor-ACC find-F.ABIL-NEG-1SG you-GEN like
Intended: 'I won't ever be able to find a tailor [+specific] like you again.'

Kornfilt (2003) argues that the ungrammaticality of (132b) is due to scrambling out of a specific DP. This can be explained by the "Condition on Extraction Domains (CED)", which stipulates that extraction out of a specific DP is blocked. Thus, according to this constraint a bare direct object, which can function as the host of a scrambled subconstituent cannot scramble itself, while overtly case-marked direct

objects (which cannot be hosts of scrambling) can scramble, as shown in (133) (taken from Kornfilt, 2003: 133; emphasis in bold added).

(133) a. ***[[Sen-in gibi] bir terzi]** bir daha bul-a-ma-m.
you-GEN like a tailor one time find-ABIL-NEG-1SG
Intended: 'I won't ever be able to find a tailor [–specific] like you again.'

b. *Bir daha bul-a-ma-m **[[sen-in gibi] bir terzi**].
one time find-ABIL-NEG-1SG you-GEN like a tailor
Intended: 'I won't ever be able to find a tailor [–specific] like you again.'

c. **[[Sen-in gibi] bir terzi]-yi** bir daha bul-a-ma-m.
you-GEN like a tailor-ACC one time find-ABIL-NEG-1SG
'I won't ever be able to find a tailor [+specific] like you again.'

d. Bir daha bul-a-ma-m **[[sen-in gibi] bir terzi]-yi**.
one time find-ABIL-NEG-1SG you-GEN like a tailor-ACC
'I won't ever be able to find a tailor [+specific] like you again.'

Kornfilt (2003) observes that similar facts hold for subjects. Hence, her head-incorporation analysis accounts for both scrambling and subscrambling facts in Turkish.

Kornfilt (2003) discusses two main issues which at first sight seem to pose a challenge for her head-incorporation account, but in fact do not.

The first issue, which has to do with the possibility of separating the incorporated nominal from the verb by focus particles, has already been noted by Erguvanlı (1984) (see the examples in (108)). According to Kornfilt (2003), these observations do not present a challenge, since even verbs with complex tense-aspect suffixes can be interrupted by focus particles, as demonstrated in (134) (adapted from Kornfilt, 2003: 146; emphasis in bold added).

(134) a. Ahmet **iş-e** git-me-miş-**mi**-y-di?
Ahmet work-DAT go -NEG-PRF-Q-COP-PST
'Hadn't Ahmet gone to work?'

b. Ahmet **iş-e** git-me-ye-**de**-bil-ir-di.
Ahmet work-DAT go -ABIL1-too-ABIL2-AOR-PST
'Ahmet might also NOT have gone to work.'

Kornfilt (2003) contends that, considering the occurrence of these particles within domains that are evidently verbal phonological words, it should be not disruptive for them to appear within a syntactic unit formed by the incorporated nominal and the verb. Furthermore, she illustrates that the focus particle *bile* 'even' can be inserted in a light verb construction, i.e., between a loanword and an auxiliary. Consider the examples in (135) (adapted from Kornfilt, 2003: 147; see also Kuribayashi, 1989 for a similar observation).

(135) a. Nurten dua **bile** et-ti.
Nurten prayer even do-PST
'Nurten even prayed.'

b. Ahmet müteşekkir **bile** ol-du.
Ahmet grateful even be-PST
'Ahmet was/became even grateful.'

The second issue is concerned with the case array of causative constructions (see Kornfilt, 1984). Kornfilt (2003) claims that the typical case pattern observed in causative constructions can be accounted for by positing that causative verbs are transitive, and that their causee is their direct object complement, unless the basic verb is transitive. Therefore, the causee is assigned accusative case whenever possible. However, in the case of regular transitive verbs undergoing causativization, the dative case is assigned to the causee, as there is already a direct complement with accusative marking. Consider the examples given in (136) and (137).

(136) a. Nurten gül-dü.
Nurten laugh-PST
'Nurten laughed.'

b. Ahmet Nurten-i gül-dür-dü.
Ahmet Nurten-ACC laugh-CAUS-PST
'Ahmet made Nurten laugh.'

(137) a. Nurten mektub-**u** oku-du.
Nurten letter-ACC read-PST
'Nurten read the letter.'

b. Ahmet Nurten-**e**/***-i** mektub-**u** oku-t-tu.
Ahmet Nurten-DAT/-ACC letter-ACC read-CAUS-PST
'Ahmet made Nurten to do letter-reading.'

c. Ahmet Nurten-**e** mektup oku-t-tu.
Ahmet Nurten-DAT letter read-CAUS-PST
'Ahmet made Nurten to do letter-reading.'

d. Ahmet Nurten-***i** mektup oku-t-tu.
Ahmet Nurten-ACC letter read-CAUS-PST
'Ahmet made Nurten to do letter-reading.'

As illustrated in (136), when an intransitive verb in Turkish (136a) is causativized, the causee *Nurten* receives accusative case (136b). However, if causativization applies to transitive verbs (137a), then the causee bears dative case, as seen in (137b), since accusative case is already assigned to the direct object. The same holds true for constructions involving bare nouns, as demonstrated in (137c). Accusative case marking of the causee leads to ungrammaticality (137d). However, Kornfilt (2003) shows that the causee is assigned dative case even in lexicalized light verb constructions, as shown in (138) (adapted from Kornfilt, 2003: 148).

(138) a. Ahmet Nurten-**e** dua et-tir-di.
Ahmet Nurten-DAT prayer do-CAUS-PST
'Ahmet made Nurten pray.'

b. Ahmet Nurten-***i** dua et-tir-di.
Ahmet Nurten-ACC prayer do-CAUS-PST
'Ahmet made Nurten pray.'

The fact that even lexicalized light verb constructions like *dua etmek* 'pray' are treated in causatives as though they were transitives, i.e., blocking accusative case assignment, shows that the case array of causative constructions does not pose a challenge for a head-incorporation analysis of Turkish bare objects.[60]

[60] Key & Tat (2015) argue that under causativization, the causee receives accusative case in contexts with particular light verb constructions, as shown in (8) (adapted from Key & Tat, 2015: 127). They point out that this is possible with unergative complex predicates that fall under their categorization of Type III.

Kornfilt (2003) gives two possible explanations for case distribution in causative constructions. The first explanation is that one could assume causativization as a lexical process and incorporation as a syntactic process, with the former preceding the latter, as proposed by Baker (1988). The second explanation suggested by Kornfilt (2003) is to assume that both processes belong to the same component of grammar, with causativization still preceding incorporation.

Another argument Kornfilt (2003) points out in order to argue in favor of head-incorporation is the fact that it is not possible to incorporate more than one element at a time, as shown in (139) (taken from Kornfilt, 2003: 150).

(139) a. *Bir çocuk arı sok-tu.
a child bee sting-PST
Intended: 'Bees stung a child.'

b. *Arı bir çocuk sok-tu.
bee a child sting-PST
Intended: 'Bees stung the child.'
(Grammatical under the reading: 'The bee stung a child.')

According to Kornfilt (2003) these observations do not argue against head-incorporation, but rather back up her account.

Aydemir (2004) proposes a different account for bare direct objects in Turkish. In particular she suggests that the bare noun forms a complex predicate with the verb and that this complex predicate is formed before it shows up in syntactic computation. Consequently, the bare noun does not occupy an argument position in syntax. Unlike Kornfilt (1995, 2003), she claims that incorporated nouns and *bir* nominals occupy two different syntactic positions in Turkish, as shown in (140). According to Aydemir (2004), this explains why bare nouns are invisible to discourse as referents and why they cannot act as internal arguments to "measure out the event" (Aydemir, 2004: 469).

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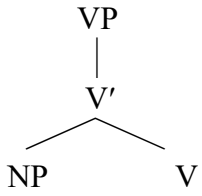
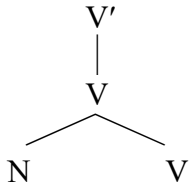
(8) Ahmet Nurten-i/*Nurten-e dans et-tir-di.
Ahmet Nurten-ACC/ Nurten-DAT dance do-CAUS-PST
'Ahmet made Nurten dance.'

(140) a. Syntactic argument



b. Incorporated object



Her evidence comes from the following observations. First, she claims that incorporated nouns cannot be modified in opposition to *bir* nominals, as in (141) (adapted from Aydemir, 2004: 467; emphasis in bold added; see also Ketrez, 2005).

(141) a. Ahmet iyi **bir** **araba** kullan-ıyor.
Ahmet good a car use-PRS
'Ahmet drives a good car.'

b. Ahmet iyi **araba** kullan-ıyor.
Ahmet good car use-PRS
'Ahmet drives well.'

The second claim comes from ellipsis facts. The contrast in (142) (adapted from Aydemir, 2004: 468) in which the object *kitap* 'book' is elided in the second conjunct sentence indicates that *bir* nominals can be elided, as opposed to bare nouns.

(142) a. Dün bir kitap oku-du-m,
yesterday a book read-PST-1SG
san-a da oku-ma-n-ı tavsiye ed-er-im
you-DAT too read-NOM-AGR.2SG-ACC recommend-AOR-1SG
'I read a book yesterday, I recommend you to read it too.'

b. Bütün gün kitap oku-du-m,
all day book read-PST-1SG
*san-a da oku-ma-n-ı tavsiye ed-er-im
you-DAT too read-NOM-AGR.2SG-ACC recommend-AOR-1SG
'I did book-reading all day, I recommend you to read it too.'[61]

A third piece of evidence comes from the ability of *bir* NPs to serve as antecedents for pronouns, as in (143a), whereas bare nouns fail to do so, as in (143b) (taken from

[61] Aksan (2007) argues that the reason the bare noun does not allow pronominal uptake is due to atelicity, not to its impossibility of serving as an antecedent for anaphora.

Aydemir, 2004: 468; indices added; see also Erguvanlı-Taylan, 1984; Öztürk, 2004a; Ketrez, 2005 for similar observations).

(143) a. Dün **bir** **film$_i$** seyret-ti-m,
yesterday a book watch-PST-1SG
onu$_i$/*onları$_i$ sen de seyret-meli-sin.
it-ACC it-PL-ACC you too watch-MOD.2SG
'I watched a movie$_i$ yesterday, you should watch it$_i$ too.'

b. Dün **film$_i$** seyret-ti-m,
yesterday book watch-PST-1SG
***onu$_i$/*onları$_i$** sen de seyret-meli-sin.
it-ACC/it-PL-ACC you too watch-MOD.2SG
'I did movie$_i$-watching yesterday, you should watch *it$_i$/*them$_i$ too.'

Fourth, Aydemir (2004) notes aspectual differences between *bir* NPs and bare objects. Bare objects yield an atelic interpretation, whereas *bir* NPs yield a telic interpretation, as shown in (144) (adapted from Aydemir, 2004: 469).[62]

(144) a. Ahmet bir saat-te bir (bardak) çay iç-ti.
Ahmet one hour-LOC a (glass) tea drink-PST
'Ahmet drank a (glass of) tea in an hour.'

b. Ahmet bir saat boyunca / *bir saat-te çay iç-ti.
Ahmet one hour along one hour-LOC tea drink-PST
'Ahmet drank tea for an hour / *in an hour.'

Finally, she states that bare objects are not specified for number; thus, a singular or plural interpretation of the bare noun is not available, as compared to *bir* NPs, which yield a singular interpretation.

Following a brief overview of approaches categorized under the true incorporation account of bare objects in Turkish, the subsequent section delves into accounts identified as pseudo-incorporation.

[62] Note that this observation contradicts Aksan's (2007) examples in (124).

2.4.2 The pseudo-incorporation account

Since Massam (2001) introduced the term "pseudo-incorporation", more recent studies have argued for a pseudo-incorporation analysis of bare nouns in Turkish, challenging earlier approaches on true incorporation.

The first pseudo-incorporation analysis of Turkish bare nouns is presented by Öztürk (2004a, 2004b, 2005a, 2005b, 2009).[63] Adopting Massam's (2001) analysis, Öztürk argues that immediately preverbal bare nouns in Turkish are independent phrasal categories (NPs), but do not function as syntactic arguments. Her claim of the "syntactic invisibility" of bare nouns is illustrated by passivization constructions. Consider the examples in (145) and (146) (adapted from Öztürk, 2004a: 283).

(145) a. Ahmet oda-da **kitab-ı** oku-du.
Ahmet room-LOC book-ACC read-PST
'Ahmet read the book in the room.'

b. **Kitap** odada oku-n-du.
book room-LOC read-PASS-PST
'The book was read in the room.'

(146) a. Ahmet oda-da **kitap** oku-du.
Ahmet room-LOC book read-PST
'Ahmet read the book in the room.'

b. Odada **kitap** oku-n-du.
room-LOC book read-PASS-PST
'Book-reading was done in the room.'

As seen in (145), when a transitive construction with an accusative-marked object (145a) is passivized (145b), the object is promoted to the subject position resulting in a personal passive. However, the passivization of (146a) yields an impersonal passive (146b). According to Öztürk (2004a) this implies that the pseudo-incorporation of themes is on a par with unergatives, which also yield impersonal passives as illustrated in (147) (taken from Öztürk, 2004a: 283, 284).

[63] The pseudo-incorporation account was first introduced in Öztürk (2003a, 2003b).

(147) a. İnsanlar koş-tu.
people run-PST
'People ran.'

b. Koş-ul-du.
run-PASS-PST
'Running happened.'

As for *bir* nominals, Öztürk (2005a) argues that they undergo the same kind of complex predicate formation. Her evidence for treating both bare and *bir* nominals as instances of pseudo-incorporation comes from their identical scopal properties. She provides the examples in (148) (adapted from Öztürk, 2005a: 67, 68).[64]

(148) a. Her çocuk **bir** **kitab-ı** oku-du.
every child one book-ACC read-PST
'Every child read a book.' ∀ > ∃; ∃ >∀

b. Her çocuk **bir** **kitap** oku-du.
every child one book read-PST
'Every child read a book.' ∀ > ∃; *∃ >∀

c. Her çocuk **kitap** oku-du.
every child book read-PST
'Every child did book-reading.' ∀ > ∃; *∃ >∀

Öztürk (2005a) argues that only overtly case-marked specific indefinites behave like true indefinites; see the example in (148a). She claims that only specific indefinites allow both wide and narrow scope readings with respect to the universal quantifier *herkes* 'every', whereas *bir* nominals (regular indefinites) cannot take wide scope and therefore pattern with bare nouns. Compare example (148b) to (148c).[65]

In order to account for a pseudo-incorporation analysis, Öztürk (2005a) discusses three major problems with the head-incorporation analysis of Turkish bare nouns. First, she claims that the head status of immediately preverbal bare nouns is controversial. Second, detransitivization is not a result of incorporation in Turkish, as is the case in

[64] Kelepir (2001) also assumes that regular indefinites (*bir* NPs) bear narrow scope.

[65] Note that Öztürk (2005a) assumes that Turkish lacks morphological determiners and argues that *bir* is a numeral rather than an article, contra Kornfilt (1997) and Underhill (1976) (see also Bošković & Şener, 2014). See also the review of Öztürk (2005a) by Kornfilt (2007) for arguments against this aspect. I follow Kornfilt and assume that *bir* is an indefinite article.

many other incorporating languages. Third, incorporation is not only confined to nouns that can be base-generated as complements of verbal heads, but it is also possible to pseudo-incorporate agents of transitive and unergative constructions.[66]

Concerning the head status of preverbal bare nouns, Öztürk (2005a, 2009) gives the following examples in order to argue against the head-incorporation analysis à la Baker (1988).[67]

According to Öztürk (2005a) the examples in (108) (from Erguvanlı (1984) repeated here in (149)) show that the bare noun and the verb do not form a morphologically complex predicate acting as a single morphological unit, V^0.

(149) a. Ahmet kitap **da** oku-du.
Ahmet book too read-PST
'Ahmet did book-reading, too.'

b. Ahmet kitap **bile** oku-du.
Ahmet book even read-PST
'Ahmet even did book-reading.'

c. Ahmet kitap **mı** oku-du?
Ahmet book Q read-PST
'Ahmet did book-reading?'

In addition, Öztürk (2005a) argues that further evidence for the phrasal status comes from ellipsis and coordination facts and from modification possibilities. It is possible to elide the verb under identity, which suggests that the bare noun and the verb are independent syntactic constituents, as shown in (150) (adapted from Öztürk, 2005a: 39).

(150) Nurten kitap oku-du, dergi değil.
Nurten book read-PST magazine not
'Nurten did book-reading not magazine (reading).'

[66] However, note that Öztürk's arguments against a head-movement analysis have been discussed before by Kornfilt (2003). Kornfilt (2003) shows that these arguments do not pose a challenge for a head-incorporation analysis.

[67] Öztürk's (2005a: 61) main point of criticism is that all analyses "fail to notice the non-argument status of immediately preverbal bare nouns". Specifically, she criticizes Kornfilt's (2003) analysis, highlighting its inability to explain the argument/non-argument distinction observed between case-marked nouns and immediately preverbal bare nouns.

Moreover, it is possible to coordinate the bare noun with another bare noun, as in (151a), or a verb with another verb, as in (151b) (adapted from Öztürk, 2005a: 39; see also Kuribayashi, 1990 and Orgun & Inkelas, 2004 for further examples).

(151) a. Nurten kitap ve dergi oku-du.
Nurten book and magazine read-PST
'Nurten did book and magazine reading.'

b. Nurten kitap al-dı, ve sattı.
Nurten book buy-PST.3SG and sell-PST
'Nurten did book-buying and (book-)selling.'

Öztürk (2005a, 2009) also shows that pseudo-incorporated nouns can be modified by adjectives, as in (152a), and by participles as in (152b) (adapted form Öztürk, 2009: 339).[68]

(152) a. Nurten **ekşi** elma ye-di.
Nurten sour apple eat-PST
'Nurten did sour apple-eating.'

b. Ahmet **oku-yacak** kitap aldı.
Ahmet read-PCT book buy-PST
'Ahmet bought books to read.'[69]

Finally, Öztürk (2009) shows that, under specific discourse conditions, it is possible to scramble the bare noun, as illustrated in (153) (taken from Öztürk, 2009: 339; emphasis in bold added; see Sezer, 1996; Uygun, 2006; İşsever, 2008 for similar examples).[70]

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[68] Following the analysis of weak definites by Aguilar-Guevara & Zwarts (2010), Sağ (2018) argues that pseudo-incorporated objects are singular kinds that can only be modified on a taxonomic domain, not at the level of ordinary objects. According to Sağ (2018), *Ali eski kitap okudu* 'Ali read an old book/old books' is therefore bad, whereas the taxonomic adjective *teknik* 'technical' in *Ali teknik kitap okudu* 'Ali did technical book-reading' is compatible with a singular kind, since it defines a sub-kind of the book.

[69] According to Jaklin Kornfilt (personal communication), this argument does not count as evidence against a true incorporation analysis, given that even in polysynthetic languages incorporated nouns can be modified.

[70] In order to explain the movement possibilities of bare nouns despite the fact that they are syntactically invisible (see example (146)), Gračanin-Yüksek & İşsever (2011) propose that the verb moves to a higher functional projection (T) and the bare noun pied-pipes the remnant VP to its derived position.

(153) a. **Çay$_i$** ben **t$_i$** iç-me-di-m.
tea I drink-NEG-PST-1SG
'I did not do tea-drinking.'

b. Ben **t$_i$** ye-me-di-m **pasta$_i$**.
I eat-NEG-PST-1SG cake
'I did not do cake-eating.'[71]

The second problem Öztürk (2005a) points out is concerned with the observation that detransitivization is a result of head-incorporation (Hopper & Thompson, 1980; Mithun, 1984). Referring to causative constructions, she argues that detransitivization is not observed in Turkish; recall examples (136) and (137) from Kornfilt (2003) (see also Aksan, 1995 for a similar observation).

Öztürk's third observation against head-incorporation stems from the fact that agents can be incorporated in Turkish, as illustrated in (154a) and (155a) (adapted from Öztürk, 2005a: 42).

(154) a. Nurten-i arı sok-tu.
Nurten-ACC bee sting-PST
'Nurten got bee stung.'

b. Arı Nurten-i sok-tu.
bee Nurten-ACC sting-PST
'The bee stung Nurten.'

(155) a. Ağaç-ta kuş ötü-yor.
tree-LOC bird sing-PROG
'There is bird-singing in the tree.'

b. Kuş ağaç-ta ötü-yor.
bird tree-LOC sing-PROG
'The bird is singing in the tree.'

[71] This argument is likewise not problematic for a true incorporation analysis: in (153a) the bare noun can be analyzed as base-generated, and in (153b), there is a local, "phonological" switch with the verb (Jaklin Kornfilt, personal communication, see also Kornfilt, 2003, 2018).

The examples in (154a) and (155a) show that agent incorporation is possible with transitives and unergatives, respectively.[72] According to Öztürk (2005a) this piece of evidence presents the most challenging argument against the head-incorporation account.[73] Note, that Öztürk also considers light verb constructions (156a) and idioms (156b) as instances of complex predicate formation (adapted from Öztürk, 2005a: 31).

(156) a. Nurten dua et-ti.
Nurten prayer do-PST
'Nurten prayed.'

b. Ahmet surat as-tı.
Ahmet face hang-PST
'Ahmet got upset.'

She argues that these constructions exhibit the same syntactic status as bare nouns with regular verbs. Öztürk (2005a) shows that both themes and agents can take part in idioms, occurring as immediately preverbal bare nouns, as shown in (157a) and (157b), respectively.

(157) a. Nurten **gıcık** kap-tı.
Nurten tickle snatch-PST
'Nurten got annoyed.'

b. Nurten-i **kurt** kap-tı.
Nurten-ACC wolf snatch-PST
'Nurten got hurt.'

In addition, she provides examples for her claim from intervening particles and the coordination possibilities for idioms and light verb constructions. The possibility of

[72] Öztürk (2009) notes that agent incorporation is also observed in languages like Hungarian (10a) and Hindi (10b). Dayal (2003a) mentions that these structures are quite limited in Hindi (see also Farkas & de Swart, 2003 for further implications in Hungarian).

(10) a. János-t kutya harapdálja.
Janos-ACC dog bite-FREQ-3SG
'Janos is being bitten by a dog.' (taken from Öztürk, 2009: 335)

b. Puure raat mujhe machchaR kaaTtaa rahaa.
whole night I-DAT mosquito kept-biting
'Mosquitos kept biting me all night.' (taken from Dayal, 2003a: 8)

[73] Note that this is by no means an argument against a head incorporation analysis à la Kornfilt (2003).

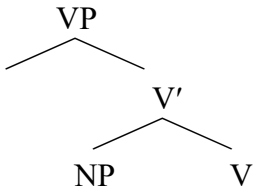
the coordination of idioms and light verb constructions is illustrated in (158) (taken from Öztürk, 2005a: 54, 56).

(158) a. Nurten hem çile hem acı çek-ti.
Nurten both privation and sorrow pull-PST
'Nurten suffered both privation and sorrow.'

b. Meclis yasa-yı hem kabul hem redd et-ti.
assembly law-ACC both acceptance and rejection do-PST
'The assembly both accepted and rejected the law.'

These facts lead Öztürk (2005a) to conclude that bare nouns in idiom formation and bare nouns in light verb constructions undergo the same kind of complex predicate formation as bare and *bir* nominals. She assumes that they are base generated as complements of the verbal head, where they form a complex predicate, as shown in (159) (adapted from Öztürk, 2005a: 57; see also Öztürk, 2003a).[74]

(159) Complex predicate



Öztürk (2005a) adopts the Neo-Davidsonian phrase structure and argues that both case and referentiality are assigned within the domain of a single functional projection. Under her analysis, standard complementation involves a direct object, which checks its strong case on the functional projection ThemeP. In contrast, pseudo-incorporated objects, i.e., bare nominals and *bir* nominals, check weak case on the Theme head after merging with a lexical verb.[75] See Öztürk (2005a) for details concerning the treatment of complex predicate formation with light verbs.

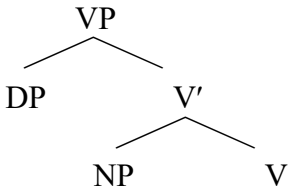
[74] In a recent work, Kornfilt (2020: 153) assumes that non-specific noun phrases remain in the vP, while specific noun phrases move out and either land in Spec,TP (for subjects) or move to a vP-adjoined position (for direct objects). She attributes this to Diesing's (1992) Mapping Hypothesis and calls it the "Diesing Effect".

[75] Öztürk (2005a) proposes an analysis that elaborates on de Hoop's (1992) strong and weak case distinction. She argues that strong case is assigned along with the referentiality feature, which acts as a type shifter. On the other hand, weak case consists of only the case feature without the referentiality feature and therefore cannot act as a type-shifter. See Öztürk (2005a) for details of this analysis.

Ketrez (2005) proposes a different analysis.[76] Similar to Öztürk (2005a), she argues that bare objects do not qualify for true noun incorporation in Turkish. Rather, they behave like independent constituents that display mobility restrictions due to the absence of DP and NumP projections. However, in contrast to Öztürk (2005a), her analysis focuses only on bare nouns in object position (not *bir* nominals). She proposes the definition for complex predicate formation in (160) (from Ketrez, 2005: 50).

(160) a. Complex predicate
A verb *x* and nominal *y* form a complex predicate if (i) *y* is not a DP, (ii) every maximal projection *z* that dominates *x* dominates y, (iii) *x* locally c-commands *y*.

b. Syntactic position



Ketrez (2005) emphasizes that bare objects do not incorporate into the verb but appear in complex predicate formation and consequently remain in the VP and do not interact with quantifiers and negation in terms of scope.

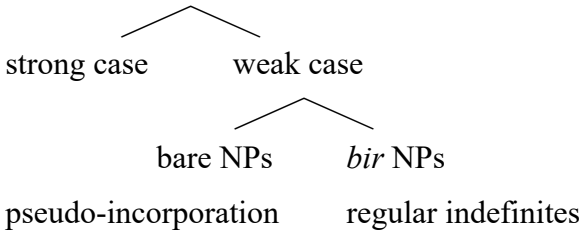
Another account is presented by Özge (2011), who argues that caseless bare direct objects in Turkish, as in (101a), align with properties of pseudo-incorporation rather than true incorporation. Özge adopts van Geenhoven's (1998a) framework of "semantic incorporation" where an indefinite direct object is treated as a predicate that is absorbed by the verb as a restrictor of the verb's argument. According to Özge (2011) West Greenlandic resembles Turkish with respect to the alternation of accusative-marked vs. non-case-marked (bare) indefinites in Turkish. Therefore, he claims that assuming different lexical entries for non-incorporating and incorporating verbs has the advantage of explaining why not every verb is equally prone to accusative-marked vs. non-case-marked alternations. Additionally, according to Özge (2011) a semantic incorporation account can explain their narrow scope behavior with

[76] Note that Ketrez (2005) does not use the term "pseudo-incorporation", but she posits a complex predicate formation analysis like Öztürk (2005a) does.

regard to quantificational operators and negation (see also Orgun & Inkelas, 2004 for a similar approach).

Similarly, Kamali (2015) argues for a pseudo-incorporation account of bare direct objects in Turkish. Following Kornfilt (2003), she assumes that bare nouns and *bir* NPs bear weak case in the sense of de Hoop (1992), but claims that only the former pseudo-incorporate into the verb, siding with Ketrez (2005), contra Öztürk (2005a) and Kornfilt (2003); see (161) (adapted from Kamali, 2015: 121).[77]

(161) Taxonomy of strong and weak case



Kamali's (2015) main claim is that caselessness itself does not directly result in pseudo-incorporation. She provides examples from movement possibilities. Consider the examples in (162) (adapted from Kamali, 2015: 116, 117; emphasis in bold added).

(162) A: Bir aslanın boyu ne kadardır acaba?
'I wonder how tall a lion is.'

B: ??**Bir aslan$_i$** ben t_i gör-dü-m. 2 metre var.
one lion I see-PST-1SG 2 meter exist
'A lion, I've seen one. It's about 2 meters.'

[77] According to Kamali (2015) light verb constructions, like the one in (11a), and constructions including measure verbs, like the one in (11b), are neither indefinites nor instances of pseudo-incorporation, since they truly lack case and thus are not syntactically free like NPs bearing weak case (see Kornfilt, 2003 for similar examples).

(11) a. Ahmet pes(*-i) et-ti.
Ahmet low(-ACC) do-PST
'Ahmet admitted defeat.'

b. Kazak-lar on lira(*-yı) tut-tu / et-ti
sweater-PL ten lira(-ACC) hold-PST / do-PST
'The sweaters cost ten liras.'

B′: **Aslan**$_i$ ben t_i gör-dü-m. 2 metre var.
lion I see-PST-1SG 2 meter exist
'Lions, I've seen some. They're about 2 meters.'[78]

C: ?Ben t_i gör-dü-m **bir** **aslan**$_i$ 2 metre var.
I see-PST-1SG one lion 2 meter exist
'I've SEEN a lion. It's about 2 meters.'

C′: Ben t_i gör-dü-m **aslan**$_i$ 2 metre var.
I see-PST-1SG lion 2 meter exist
'I've SEEN lions. They're about 2 meters.'

As seen in (162), bare direct objects can move away from their verb in contrast to *bir* NPs, which seem to be more restricted in this regard (see also Sezer, 1996; İşsever, 2003; Uygun, 2006; Öztürk 2009). Kamali (2015) emphasizes that the movement behavior of *bir* NPs is not due to their caselessness; but rather to their indefiniteness, since non-specific indefinites cannot be topicalized (162B), but generics (162B′) can. However, she shows that both can be backgrounded (see (162C) vs. (162C′)). Kamali (2015) further provides counterexamples to Erguvanlı's (1984) and Aydemir's (2004) claim that bare nouns cannot act as antecedents. The examples in (163) show that the bare noun *portakal* 'orange' in (163a) introduces a discourse referent which is referred to by an overt pronoun in (163b), and a covert pronoun in (163c) (adapted from Kamali, 2015: 120; emphasis in bold added; see similar example for Persian in Krifka & Modarresi, 2016).

(163) Bir saattir oğlanları izliyorum.
'I've been watching the boys for the last hour.'

a. Ahmet **portakal**$_i$ getir-iyor.
Ahmet orange bring-PROG
'Ahmet does orange-bringing.'

b. Nurten de **o-nu**$_i$ soy-uyor.
Ahmet CONN it-ACC peel-PROG
'And Nurten peels it.'

[78] Similar examples were provided by Kornfilt (see footnote 52).

c. Ama sonra ***pro***$_i$ ye-m-iyor-lar. ***pro***$_i$ Biriktir-iyor-lar.
but then pro eat-NEG-PROG-3PL pro save.up-PROG-3PL
'But after that they don't eat. They save.'

Furthermore, Kamali (2015) claims that bare nouns do not necessarily enforce an atelic interpretation with accomplishment verbs, as shown in (164), similar to Aksan (2007).

(164) Nurten iki ay-da tez yaz-dı.
Nurten two month-LOC dissertation write-PST
'Nurten dissertated in two months.'

Finally, Kamali (2015) argues contra Öztürk (2005a) that while *bir* nominals are scopally ambiguous with respect to universal quantifiers, bare nouns are restricted to the narrowest scope possible in all contexts, as shown in (165) and (166) (adapted from Kamali, 2015: 112; emphasis in bold added).

(165) a. Herkes içeride **film** izli-yor.
everyone inside movie watch-PROG

i. 'Everyone is movie-watching inside.' ∀>∃
ii. *'There exists a movie so that everyone is watching it inside.' *∃>∀

b. Herkes içeride **bir** **film** izli-yor.
everyone inside a movie watch-PROG

i. 'Everyone is watching a movie inside.' ∀>∃
ii. 'There exists a movie so that everyone is watching it inside.' ∃>∀

(166) a. **Kitap** arı-yor-um. Bul-amı-yor-um.
book look.for-PROG-1SG find-INABIL-PROG-1SG

(i) 'I am looking for a book I can't find it.' look for > ∃
(ii) *'I am looking for a book. I can't find one.' *∃ > look for

b. **Bir** **kitap** arı-yor-um. Bul-amı-yor-um.
a book look.for-PROG-1SG find-INABIL-PROG-1SG

(i) 'I am looking for a book I can't find it.' look for > ∃
(ii) 'I am looking for a book. I can't find one.' ∃ > look for

Based on the above-listed counterexamples, Kamali (2015) emphasizes the need for a more fine-grained analysis of Turkish bare nouns than just mapping caselessness to head-incorporation or pseudo-incorporation as in the previous analyses. Besides that,

she suggests that these aspects should be further addressed from a semantic perspective along the lines of Krifka & Modarresi (2016).

2.4.3 The adhesion account

There exists one more account of the treatment of preverbal bare nouns in Turkish. Arslan-Kechriotis (2009) claims that Turkish bare objects undergo neither head-incorporation nor pseudo-incorporation. Her proposal rests upon the distinction between DPs and NPs in Turkish. Arslan-Kechriotis (2009) claims, contra Kornfilt (1995, 2003) and Öztürk (2005a) that bare nouns cannot be analyzed on par with *bir* NPs since they differ in many respects, namely number interpretation, referentiality, scope [79], modification by adverbs, ellipsis, aspectual properties, relative clause formation and pronominalization. She argues that *bir* nominals are syntactically DPs where *bir* can be merged in the Spec CIP position, ensuring the numeral meaning or in Spec DP, where the nominal is interpreted as indefinite. As for bare nouns phrases, Arslan-Kechriotis (2009) proposes that they undergo a process, which she calls "adhesion". The definition of adhesion is given in (167).

(167) Adhesion
An argument NP adheres to V^0 as Last Resort.

More precisely, she argues that bare noun phrases in object or subject position adhere to the verb from their base-generated position (see the examples in (101a), (102a) and

[79] Arslan-Kechriotis (2009) argues that Turkish bare nouns cannot have any scope with respect to a subject quantifier since they do not have any number specification or referentiality which would allow them to have scope properties. She provides the examples following in (12) (taken from Arslan-Kechriotis, 2009: 17).

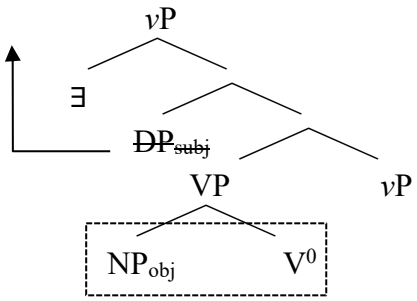
(12) a. Üç çocuk bir araba al-mış.
three child one car buy-EV
i. 'A car is such that three children bought it.' a car > three children
ii. 'Each of the three children bought a car.' three children > a car

b. Üç çocuk araba al-mış.
three child car buy-EV
i. *'A car is such that three children bought it.' *a car > three children
ii. 'Each of the three children bought a car.' three children > a car

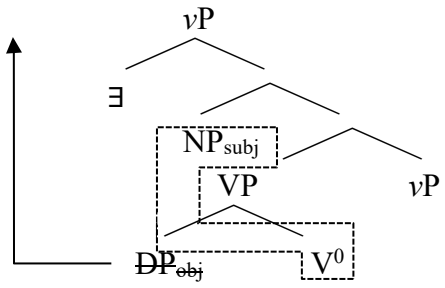
Furthermore, she argues that the object in (12a) is ambiguous between a wide scope reading and a narrow scope reading. In the case of a wide scope reading, she argues that *bir* is obligatorily interpreted as a numeral under a contrastive focus reading (contra Öztürk, 2005a).

(129a)). As illustrated in the tree structures below (adapted from Arslan-Kechriotis, 2009: 102), in (168a), the object NP adheres to the verb, whereas the subject moves outside the scope of the existential closure. Conversely in (168b), the object DP moves out, and as a result the subject NP undergoes adhesion to the verb. Note that Arslan-Kechriotis (2009: 84) adheres to Diesing's (1992) Mapping Hypothesis in the sense that she claims that bare noun phrases remain in their base-generated position, which is bound by existential closure, whereas *bir* nominals move out of the nuclear scope to the specifier positions of higher functional categories.

(168) a. Adhesion for object



b. Adhesion for subject



Arslan-Kechriotis (2009) stresses that the uniqueness of her proposal lies in the fact that *bir* nominals are analyzed as DPs, since previous analyses have claimed that only overtly case-marked nominals are DPs above the existential closure (Enç, 1991; Kennelly, 1997; Kelepir, 2001; Öztürk, 2005a; see also Kornfilt, 2020). In this regard she claims contra Öztürk (2005a), that *bir* nominals are referential DPs. Consider the example in (169) (adapted from Arslan-Kechriotis, 2009: 19; originally from Erguvanlı, 1984: 23; emphasis in bold added).[80]

(169) a. Ahmet kaç gün-dür **bir** **resim**$_i$ yap-ıyor-du.
Ahmet how.many day-ADV a picture make-IMP-PST
Nihayet **on-u**$_i$ bitir-di.
finally it-ACC finish-PST
'Ahmet was painting **a picture**$_i$ for days. He finally finished **it**$_i$.'

[80] Note that in Arslan-Kechriotis' (2009) citation a covert pronoun is missing in both examples. According to Erguvanlı (1984), a covert pronoun is acceptable as an anaphoric uptake.

b. Ahmet kaç gün-dür **resim$_i$** yap-ıyor-du.
Ahmet how.many day-ADV picture make-IMP-PST
Nihayet ***on-u$_i$** bitir-di.
finally it-ACC finish-PST
'Ahmet was **picture$_i$**-painting for days. He finally finished (***it$_i$**).'

According to Arslan-Kechriotis (2009), the example in (169) shows that *bir* nominals are referential and thus serve as antecedents to pronouns, whereas bare noun phrases fail to do so (see also Kılıçaslan, 1994, 2006 for further examples). Likewise, the same distinction is observed with subjects, as shown in (170) (adapted from Arslan-Kechriotis, 2009: 20; emphasis in bold added).

(170) a. Nurten-i **bir** **arı** sok-tu. **On-u** kov-du-k.
Nurten-ACC a bee sting- PST it-ACC chase-PST.1PL
'Nurten got stung by **a bee$_i$**. We chased **it$_i$** away.'

b. Nurten-i **arı** sok-tu. ***On-u** kov-du-k.
Nurten-ACC a bee sting- PST it-ACC chase-PST.1PL
'Nurten got **bee$_i$**-stung. We chased ***it$_i$** away.'

To conclude, from reviewing the literature it is evident that there is no consensus as to which type of object incorporation, if at all, Turkish exhibits. As a result, the accounts outlined make different predictions with regard to the properties of bare nouns in Turkish. In section 2.4.4, I discuss the relevant properties and argue that Turkish exhibits both true incorporation and pseudo-incorporation.

2.4.4 Discussion

The literature review in the previous subsections reveals two key points: firstly, the terms "true incorporation" and "pseudo-incorporation" are defined distinctively, and second, the approaches rely on different data to account for incorporation or pseudo-incorporation in Turkish. As far as the first point is concerned, true incorporation is usually defined based on syntactic or morpho-syntactic grounds whereas pseudo-incorporation involves considerations of both syntax and/or semantics. As for the second point, the conclusions are often not directly comparable because the data

supporting the various theories are different. Point 2 logically follows from point 1 and therefore they cannot be considered independently of each other.

In the following, I point out some of the issues related to the abovementioned points to underscore the controversy.

As evident from the previous sections, the accounts presented diverge in their assumptions with regard to the morpho-syntactic and semantic properties of Turkish bare nouns. Concerning the morpho-syntax of bare nouns, the head-incorporation account claims that Turkish bare nouns are head nouns (N^0), whereas the pseudo-incorporation account posits a phrasal nominal structure for bare nouns, contending that they are, in fact, noun phrases (NPs) that are syntactically independent from their respective verbs. For instance, Kornfilt (2003), who proposes a head-movement analysis for Turkish, demonstrates that, syntactically, bare nouns and *bir* nominals behave similarly, in contrast to their case-marked counterparts. Not only does her theory effectively capture the syntactic similarities by illustrating scrambling and subscrambling phenomena, but she is in fact the only proponent, among those supporting the true incorporation account for Turkish, to offer a comprehensive analysis, including well-founded data and compelling arguments. Her theory explains that with noun incorporation, the remainder of an NP gets stranded and can move around the clause, while case-marked nominal heads of NPs do not allow the remnant of the NP to escape the NP, even when the NP is non-specific, such as in oblique case-marked NPs (see examples in (132)). The contrast is explained with reference to the "Government Transparency Corollary (GTC)" in Baker (1988). This assumption involves the head-incorporation of a bare nominal head into a verb, where "a lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position" (Baker, 1988: 64). A pseudo-incorporation account is unable to explain these contrasts. Additionally, Kornfilt (2003) shows that the problems supposedly posing challenges to her head-incorporation account, such as the potential presence of intervening focus particles, causative structures that do not result in detransitivization, and the occurrence of agent or subject incorporation in Turkish, do not actually challenge her account, but support her view. The existence of these issues, among others, has led a few linguists to conclude that head-incorporation cannot exist in Turkish (Erguvanlı, 1984; Öztürk,

2005a; among others). Öztürk (2005a), who is a proponent of the pseudo-incorporation account, criticizes previous head-incorporation accounts for overlooking the non-argument status of immediately preverbal bare nouns. In her framework, she suggests that preverbal bare nouns and *bir* nominals, as well as bare nouns in light verb constructions and in idiom formation, undergo a similar type of complex predicate formation, resulting in a unified analysis for the non-argument status of immediately preverbal bare nouns. In particular, she proposes a phrase structure for Turkish, where any NP which is the immediate sister of a lexical verb head is interpreted as part of the complex predicate, while subjects and objects occurring in the Spec position of higher functional categories gain full argument status by checking both case and referentiality. Her argumentation is grounded in the syntactic and semantic status of bare nouns in these constructions. Specifically, Öztürk (2005a) contends that preverbal bare nouns in these constructions cannot receive case assignment and thus are non-referential. Consequently, they retain their predicate status and cannot function as arguments, forming complex predicates along with the verb head. According to Öztürk (2005a), the examples provided in (171)-(174) can be analyzed within a unified account (all examples adapted from Öztürk, 2005a; section 2.2).

(171) a. Ahmet bir kitap oku-du. — non-specific indefinite
Ahmet one book read-PST
'Ahmet read a book.'

b. Ahmet kitap oku-du. — theme INC – transitive
Ahmet book read-PST
'Ahmet did book-reading.'

c. Köy-e doktor gel-di. — theme INC – unaccusative
village-DAT doctor come-PST
'Doctors came to the village.'

(172) a. Ahmet-i arı sok-tu. — agent INC – transitive
Ahmet-ACC bee sting-PST
'Ahmet got bee stung.'

b. Ağaç-ta kuş ötü-yor. — agent INC – unergative
tree-LOC bird sing-PROG
'There is bird singing in the tree.'

(173) a. Ahmet-i kurt kap-tı. agent INC – idiom
Ahmet-ACC wolf snatch-PST
'Ahmet got hurt.'[81]

b. Ahmet surat as-tı. theme INC – idiom
Ahmet face hang-PST
'Ahmet made a sour face.'

(174) a. Ahmet dua et-ti. light verb
Ahmet prayer do-PST
'Ahmet prayed.'

b. Doktor hasta muayene et-ti. theme INC – light verb
doctor patent examination do-PST
'The doctor examined a patient/the patients.'

c. Hasta-yı doktor muayene et-ti. agent INC – light verb
patient-ACC doctor examination do-PST
'The patient underwent doctor examination.'

Öztürk (2005a) argues that these structures are instances of complex predicates of the form [NP+V], which are formed by a lexical verb and a non-case-marked predicate NP. To wrap up, Öztürk's account implies that case assignment also encodes referentiality assignment. This suggests that the bare nouns in the examples in (171) – (174) lack referentiality, and consequently cannot introduce discourse referents that are able to antecede anaphora. While this might be true for the most of the constructions in (171) – (174), this framework cannot explain the referentiality of non-specific indefinites, which leads Arslan-Kechriotis (2009) to assume that *bir* nominals cannot be analyzed equally with bare nouns since they differ in various aspects, such as number and referential interpretation, scope and aspectual properties, among other aspects.

In summary, the frameworks discussed contribute significantly to our understanding of the morpho-syntax of bare nouns in Turkish. Depending on the specific approach, they shed light on the syntactic properties of bare nouns in various constructions. These frameworks effectively account for the shared characteristics of bare nouns in diverse contexts, providing a cohesive analysis of their syntactic behavior.

[81] This sentence can also have a literal meaning: 'Ahmet was wolf-snatched.'

However, it is noteworthy that only a few of these frameworks address the anaphoric potential of bare nouns in object position (Erguvanlı, 1984; Schroeder, 1999; Bliss, 2004; among others). As a reminder, consider the example from (92), repeated here in (175) (adapted from Bliss, 2004: 24; emphasis in bold added).

(175) a. Nurten **muz$_{ı}$** al-dı. **On-u$_{ı}$** buzdolabın-a koy-du.
Nurten banana buy-PST it-ACC refrigerator-DAT put-PST
'Nurten bought a banana$_i$. She put it$_i$ in the refrigerator.'

b. Nurten **muz$_{i}$** al-dı. **On-lar-ı$_{i}$** buzdolabın-a koy-du.
Nurten banana buy-PST it-PL-ACC refrigerator-DAT put-PST
'Nurten bought bananas$_i$. She put them$_i$ in the refrigerator.'

While some of the frameworks discussed refrain from assigning anaphoric referentiality to bare nouns, with some not attributing it even to *bir* nominals, others connect the referentiality of bare nouns with predicate types within the noun-verb combination (Aksan, 2007; Demiral, 2007). However, to delve deeper into the distinctions, I argue that bare nouns occurring with transitive verbs, as in (176a), should be treated differently from those in light verb constructions, as in (176b), and from those in idiom formation, as in (176c).

(176) a. Ahmet mektup oku-du.
Ahmet letter read-PST
'Ahmet did letter-reading.'

b. Ahmet tebessüm et-ti.
Ahmet smile do-PST
'Ahmet smiled.'

c. Nurten kahkaha at-tı.
Nurten laughter throw-PST
'Nurten laughed.'

Bare nouns occurring in light verb constructions and idioms are obligatorily verb-adjacent, whereas this is not necessarily the case for bare nouns with regular verbs (İşsever, 2003; Uygun, 2006; Öztürk, 2009; Kamali, 2015). In addition, although bare nouns in idiom formation are highly frequent, restrictions do exist and thus gaps can be found. Consider the examples in (177).

(177) a.	yemek seçmek	göz yummak	surat asmak
	‘food-choose’	‘eye-close’	‘face-hang’
	‘be choosy about food’	‘overlook’	‘frown’
b.	*içecek seçmek	*ağız yummak	*kaş asmak
	‘drink-choose’	‘mouth-close’	‘eyebrow-hang’

Semantically, bare nouns in idioms and in light verb constructions are consistently discourse opaque and thereby unable to support discourse anaphora, in contrast to bare nouns in contexts with regular verbs. Additionally, light verb constructions sometimes resemble double incorporation constructions, as shown in (178), which is not the case for bare nouns with regular verbs, as shown in (179).

(178) a. Doktor **hasta** **tedavi** et-ti.
doctor patient treatment do-PST
‘The doctor did patient-treating.’

b. Ahmet **araba** **tamir** et-ti.
Ahmet car repair do-PST
‘Ahmet did car-repairing.’

(179) a. *Nurten **felsefe** **kitap** oku-du.
Nurten philosophy book read-PST
‘Nurten read a philosophy book/books.’

b. Nurten **felsefe** **kitab-ı** oku-du.
Nurten philosophy book-CMP.M read-PST
‘Nurten read a philosophy book.’

c. Nurten **felsefe** oku-du.
Nurten philosophy read-PST
‘Nurten studied philosophy.’

In the next section, I present various tests indicating that these constructions should be indeed treated differently.

2.4.5 Strict and liberal incorporation in Turkish

In this section, I propose that Turkish exhibits a continuum from strict to liberal incorporation. Specifically, I argue that bare nouns in different constructions vary

along this continuum. I demonstrate that bare nouns in combination with different verbs should be distinguished in the following way, as illustrated in (180).

(180) a. Nurten kahkaha at-tı. — idiom
Nurten laughter throw-PST
'Nurten laughed.'

b. Nurten tebessüm et-ti. — true light verb (TLV)
Nurten smile do-PST
'Nurten smiled.'

c. Ahmet oy kullan-dı. — vague action verb (VAV)
Ahmet answer use -PST
'Ahmet voted.'

d. Ahmet kitap oku-du. — regular verb (RV)
Ahmet book read-PST
'Ahmet did book-reading.'

The terms "true light verb" (TLV) and "vague action verb" (VAV) go back to Kearns (2002). Although TLVs and VAVs both fall under the traditional term "light verb", Kearns (2002) shows for English that they differ in numerous properties, including definiteness, passivization, and Wh-movement. Uçar (2010) adopts this dichotomy for Turkish and argues that these light verbs should be treated differently in Turkish dictionaries.[82] In the following I illustrate that bare nouns in combination with these verbs show variation with regard to properties like definiteness, focus of a Wh-question, passivization, substitution, gapping, insertion of focus particle, ellipsis, coordination, Wh-substitution and pronominalization.

Beginning with the property of definiteness, it is noteworthy that, in contrast to bare nouns with VAVs and RVs, those with TLVs and bare nouns used in idioms cannot be definite. Consequently, they do not receive accusative case marking, as demonstrated in (181) (see also Uçar, 2010).

[82] Key & Tat (2015) also investigate light verb constructions in Turkish and claim that there are at least four different types based on structural variation. See Key & Tat (2015) for a detailed analysis.

(181) a. Nurten kahkaha-*yı at-tı. idiom
Nurten laughter-ACC throw-PST
'Nurten laughed.'[83]

b. Nurten tebessüm-*ü et-ti. TLV
Nurten smile-ACC do-PST
'Nurten smiled.'

c. Ahmet oy-u kullan-dı. VAV
Ahmet vote-ACC use -PST
'Ahmet used the vote.'

d. Ahmet kitab-ı oku-du RV
Ahmet book-ACC read -PST
'Ahmet read the book.'

Similarly, unlike bare nouns in VAVs and RVs, bare nouns with TLVs and bare nouns in idioms cannot be the focus of a Wh-question. Consider the examples in (182) (see also Uçar, 2010).

(182) a. *Nurten hangi kahkaha-yı at-tı? idiom
Nurten which laughter-ACC throw-PST
Lit. *'Which laugh did Ahmet throw?'

b. *Nurten hangi tebessüm-ü et-ti? TLV
Nurten which smile-ACC do-PST
Lit. *'Which smile did Ahmet do?'

d. Ahmet hangi oy-u kullan-dı? VAV
Ahmet which vote-ACC use-PST
'Which vote did Ahmet use?'

d. Ahmet hangi kitab-ı oku-du? RV
Ahmet which book-ACC read-PST
'Which book did Ahmet read?'

Moreover, while bare nouns with VAVs and RVs can function as subjects in passive constructions, bare nouns with TLVs and those in idioms cannot serve as subjects of passive constructions, as illustrated in (183) (see also Uçar, 2010).

[83] A similar example was given by Kornfilt (2003), see also footnote 77.

(183) a. *Nurten tarafından kahkaha at-ıl-dı. idiom
Nurten by laughter throw-PASS-PST
Lit. *‘It was laughed by Nurten.’

b. *Nurten tarafından tebessüm ed-il-di. TLV
Nurten by smile do-PASS-PST
Lit. *‘It was smiled by Nurten.’

c. Ahmet tarafından oy kullan-ıl-dı. VAV
Ahmet by vote use-PASS-PST
‘It was voted by Ahmet.’

d. Ahmet tarafından kitap oku-n-du. RV
Ahmet by book read-PASS-PST
‘It was book-read by Ahmet.’

In addition, bare nouns with TLVs and bare nouns in idioms cannot be substituted, in contrast to bare nouns with VAVs and RVs; see the examples provided in (184) (see also Uçar, 2010).

(184) a. *Nurten gülüş at-tı / et-ti. idiom
Nurten laughter throw-PST / do-PST
Intended: ‘Nurten laughed.’

b. * Nurten gülümseme et-ti. TLV
Nurten smile do-PST
Intended: ‘Nurten smiled.’

c. Ahmet rey kullan-dı. VAV
Ahmet vote use-PST
‘Ahmet voted.’

d. Ahmet roman oku-du. RV
Ahmet novel read-PST
‘Ahmet did novel-reading.’

Furthermore, whereas bare nouns with TLVs and those found in idioms do not allow gapping, bare nouns with VAVs and RVs do permit it, as illustrated in (185).

(185) a. Nurten dün kahkaha at-tı, idiom
Nurten yesterday laughter throw-PST
Ahmet ise bugün *(kahkaha) at-tı.
Ahmet but today laughter throw-PST
'Nurten laughed yesterday but Ahmet laughed today.'

b. Nurten dün tebessüm et-ti, TLV
Nurten yesterday smile do-PST
Ahmet ise bugün *(tebessüm) et-ti.
Ahmet but today smile do-PST
'Nurten smiled yesterday but Ahmet smiled today.'

c. Ahmet dün oy kullan-dı, VAV
Ahmet yesterday vote use-PST
Nurten ise bugün (oy) kullan-dı.
Nurten but today vote use-PST
'Ahmet voted yesterday but Nurten (voted) today.'

d. Ahmet dün kitap oku-du, RV
Ahmet yesterday book read-PST
Nurten ise bugün (kitap) oku-du.
Nurten but today kitap read-PST
'Ahmet did book-reading yesterday but Nurten read today.'

In contrast to bare nouns in idioms, bare nouns occurring with TLVs, VAVs and RVs allow the insertion of a focus particle. Consider the examples in (186) (see also Kuribayashi, 1989).

(186) a. Nurten kahkaha ***bile** at-tı. idiom
Nurten laughter even throw-PST
'Nurten even laughed.'

b. Nurten tebessüm **bile** et-ti. TLV
Nurten smile even do-PST
'Nurten even laughed.'

c. Ahmet oy **bile** kullan-dı. VAV
Ahmet vote even use-PST
'Ahmet even voted.'

d. Ahmet kitap **bile** oku-du. RV
Ahmet book even read-PST
'Ahmet even did book-reading.'

Further differences between bare nouns with RVs, bare nouns occurring with TLVs and VAVs and bare nouns in idioms are revealed by ellipsis and coordination facts, as well as Wh-substitution (see also Uçar, 2010; Ketrez, 2005). Consider the examples in (187) – (189).

(187) a. *Nurten kahkaha at-tı, çığlık değil. idiom
Nurten laughter throw-PST scream not
'Nurten laughed, not screamed.'

b. *Nurten tebessüm et-ti, teşekkür değil. TLV
Nurten smile do-PST thanks not
'Nurten laughed, not thanked.'

c. *Ahmet oy kullan-dı araba değil. VAV
Ahmet vote use-PST car not
'Ahmet voted, not drove.'

d. Ahmet kitap oku-du gazete değil. RV
Ahmet book read-PST newspaper not
'Ahmet did book-reading not newspaper-reading.'

(188) a. *Nurten hem kahkaha hem çığlık at-tı. idiom
Nurten both laughter and scream throw-PST
'Nurten laughed and screamed.' [84]

[84] As mentioned earlier, Öztürk (2005a) claims that bare nouns in idiom formation and in light verb constructions can be coordinated. She gives the following examples, repeated here in (13) (adapted from Öztürk, 2005a: 54, 56).

(13) a. Nurten hem çile hem acı çek-ti.
Nurten both privation and sorrow pull-PST
'Nurten suffered both privation and sorrow.'

b. Meclis yasa-yı hem kabul hem redd et-ti.
assembly law-ACC both acceptance and reject do-PST
'The assembly both accepted and rejected the law.'

However, as shown in the examples in (188) this is not always possible. The exception in (13a) is due to the similar meaning of the idioms *çile çekmek* 'suffer' and *acı çekmek* 'suffer, sorrow'. The exception in (13b) is due to the semantic contrast of the light verbs; one could also use verbs with similar meanings, such as *kabul etmek* 'accept' and *tasdik etmek* 'accept, verify': *Meclis yasayı hem kabul hem tasdik etti* 'The assembly accepted and verified the law'.

b. * Nurten hem tebessüm hem teşekkür et-ti. TLV
Nurten both laughter and thanks do-PST
'Nurten laughed and thanked.'

c. *Ahmet hem oy hem araba kullan-dı. VAV
Ahmet both vote and car use-PST
'Ahmet voted and drove.'

d. Ahmet hem kitap hem gazete oku-du. RV
Ahmet both book and newspaper read-PST
'Ahmet did both book-reading and newspaper-reading.'

(189) a. Nurten ne at-tı? *Kahkaha. idiom
Nurten what throw-PST laughter
Lit. 'What did Nurten throw? *Laughter.'

b. * Nurten ne et-ti? *Tebessüm. TLV
Nurten what do-PST smile
Lit. 'What did Nurten do? *Smile.'

c. Ahmet ne kullan-dı? *Oy. VAV
Ahmet what use-PST vote
Lit. 'What did Ahmet use? *Vote.'

d. Ahmet ne oku-du? Kitap. RV
Ahmet what read-PST book
'What did Ahmet read? Book.'

Unsurprisingly, only bare nouns with RVs (and with VAVs) seem to support anaphoric uptake. Consider the examples in (190).

(190) a. Nurten **kahkaha$_i$** at-tı. idiom
Nurten laughter throw-PST
***Kahkaha-yı$_i$ / *On-u$_i$** yüksek sesle at-tı.
laughter- ACC it-ACC loud voice throw-PST
Lit. 'Nurten laughed. She did the laugh/it loudly'

b. Nurten **tebessüm$_i$** et-ti. TLV
Nurten smile do-PST
Tebessüm-ü$_i$ /*On-u$_i$ ben gör-d-üm.
smile-ACC it-ACC I see-PST-1SG
Lit. 'Nurten smiled. I saw the smile/it.'

c. Ahmet **oy$_i$** kullan-dı. VAV
Ahmet answer use-PST
Oy-un-u$_i$ / **?On-u$_i$** Mustafa'ya ver-di.
answer-POSS.3SG-ACC it-ACC Mustafa-DAT give-PST
Lit. 'Ahmet voted. He gave it to Mustafa.'

d. Ahmet **kitap$_i$** oku-du. RV
Ahmet book read-PST
Kitab-ı$_i$ / **On-u$_i$** sonra raf-a koy-du.
book-ACC it-ACC after shelf-DAT put-PST
'Ahmet read a book. After that he put the book/it on the shelf.'

A summary of the distinction between bare nouns in idioms, those in light verb constructions and those occurring with regular verbs is presented in Table 6.

Table 6. Tests for classification of noun-verb combinations.

Tests	**Idiom**	**TLV**	**VAV**	**RV**
Definiteness/Case	–	–	+	+
Focus of a wh-question	–	–	+	+
Passivization	–	–	+	+
Substitution	–	–	+	+
Gapping	–	–	+	+
Insertion of focus particle	–	+	+	+
Ellipsis	–	–	–	+
Coordination	–	–	–	+
Wh-substitution	–	–	–	+
Anaphoric uptake	–	–	?(+)	+

To capture these differences, I propose an "incorporation strictness scale" in which various types of noun-verb combinations are ordered on a continuum, as shown in (191). The term "strict" on the left indicates a tight bond between the bare noun and the verb, leading to a strict adherence to the properties of true incorporation. In

contrast, “liberal” on the right signals a looser bond between the noun and the verb, allowing them to convincingly pass the tests outlined in Table 6.

(191) Incorporation Strictness Scale

[strict] IDIOMS > TLVS > VAVS > RVS [liberal]

The scale in (191) further suggests a continuum ranging from opaqueness to transparency concerning the interpretation of the noun-verb construction.

In conclusion, the Turkish data underscores the necessity for further comparable investigations into the morpho-syntactic and semantic properties of bare nouns in combination with the verb classes mentioned. However, this task lies beyond the scope of this dissertation. Throughout the dissertation, I will focus on bare nouns in combination with regular verbs and examine their anaphoric potential in discourse from a theoretical and empirical perspective.

3 Reference and discourse structure

In the previous chapter, I discussed several properties of incorporated and pseudo-incorporated nouns. I showed that their semantic properties, namely number neutrality and discourse transparency, are cross-linguistically variable properties. In this chapter, I empirically examine these properties for Turkish. In particular, this chapter aims to investigate the anaphoric potential of bare nouns in Turkish. The findings provide the first empirical evidence that Turkish bare nouns are anaphorically accessible to some degree.

The chapter is organized as follows. First, I discuss the notions of "accessibility" and "discourse transparency" in section 3.1, since these notions are related to each other, but nevertheless evoke different predictions with respect to the anaphoric potential of incorporated nouns or bare nouns. Here, I show that the two concepts are treated differently within the framework of Discourse Representation Theory. I conclude that these notions give rise to different hypotheses, which I call "The discourse accessibility hypothesis", "The discourse transparency hypothesis", "The discourse translucency hypothesis" and "The discourse opacity hypothesis". In section 3.2, I present four different DRT approaches to the discourse transparency of pseudo-incorporated nouns. After providing some intermediate discussion in section 3.3, I present the experiments that I conducted in section 3.4. Section 3.5 concludes the chapter.

3.1 Accessibility and discourse transparency

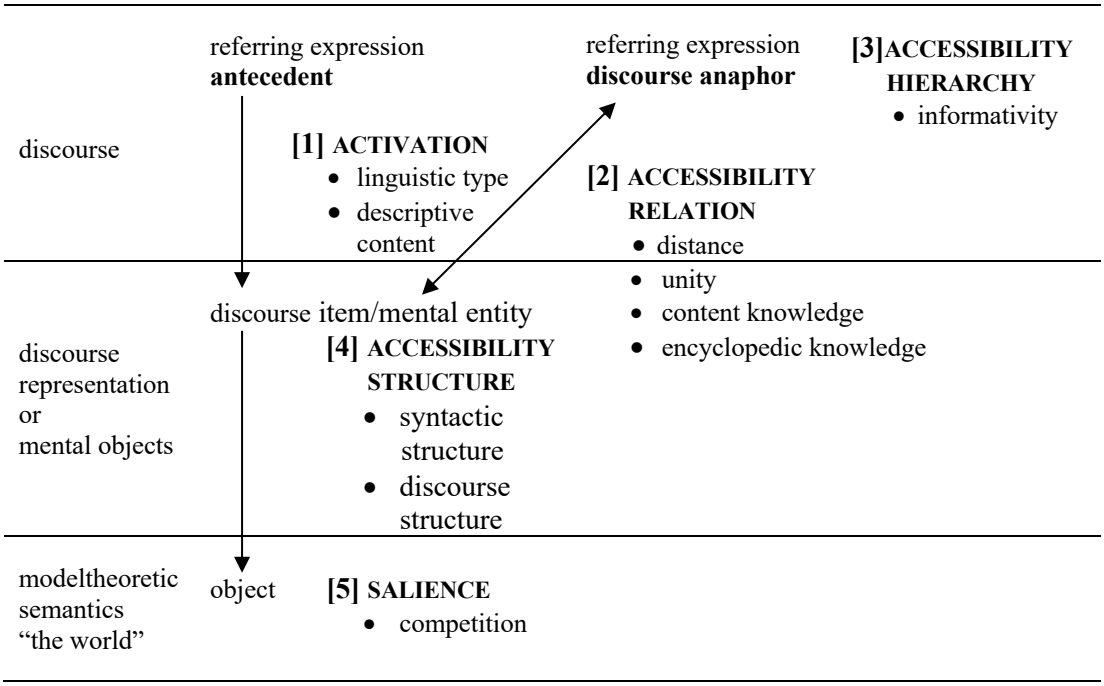
Accessibility and discourse transparency, although different notions, are related notions in the research on pronoun resolution. Accessibility, in general, is regarded as a gradient and/or dynamic property with different forms (Ariel, 1990; von Heusinger & Schumacher, 2019; among others). On the other hand, in the literature on noun incorporation, discourse transparency has traditionally been viewed as a binary property; specifically, a discourse referent is either discourse transparent or discourse opaque (Mithun, 1984; Baker, 1988; among others). However, Farkas & de Swart (2003) revise the traditional view by assuming a new category between discourse

transparency and discourse opacity, which they term “discourse translucency”. In the following section, I will first address the notion of accessibility before delving deeper into the topic of discourse transparency and accessibility within the framework of Discourse Representation Theory.

3.1.1 Aspects of accessibility

Von Heusinger (2000, 2007) distinguishes five aspects of accessibility: [1] activation, [2] accessibility relation, [3] accessibility hierarchy, [4] accessibility structure and the [5] salience of the objects in some model (or “the world”), as illustrated in Table 7 (adapted from von Heusinger, 2007: 129).

Table 7. Five aspects of accessibility (von Heusinger, 2007: 129).



According to von Heusinger (2007) these aspects have related characteristic features, which will be presented below.

The first aspect is concerned with the “activation” or “accessibility status” of a discourse entity. A referring expression activates or evokes a discourse entity. The activation is based on the linguistic type and on the syntactic function of this referring

expression. For instance, an entity that is associated with a subject is more accessible than an entity that is associated with an object. Likewise, a definite noun phrase activates its associated referent in a different way than an indefinite noun phrase. According to von Heusinger (2007: 130), there is one more component, the "descriptive content" of the referring expression, which "restricts the class of elements to which activation applies".

The second aspect is called "accessibility relation", which holds between an already activated discourse entity and its corresponding referring expression, the discourse anaphor. The accessibility of the discourse entity is determined by several factors, including the distance and the syntactic structure between the anaphoric expression and the antecedent that has activated the discourse entity. This relation is further affected by content knowledge, as well as encyclopedic knowledge, which also includes inferential knowledge.

The third aspect relates to the "accessibility hierarchy", which mirrors the type of the anaphoric expression. That is, the accessibility of a discourse entity determines the type of the anaphoric expression that is used to pick up that entity in the subsequent discourse. This relationship has been captured in the literature through different accessibility hierarchies, such as the "Accessibility Marking Scale" by Ariel (1990) and the "Givenness Hierarchy" by Gundel et al. (1993) (see section 3.1.2).

The fourth aspect is concerned with the "accessibility structure", which can be described as a property of a discourse, including an ordered set of accessible discourse items. The accessibility relation depends on the discourse structure and the syntactic structure intervening between the antecedent and the discourse anaphor.

The final aspect is related to the properties of ranked discourse items whose ordering is determined by their "salience".[85] Salience is understood as "a property of a set associated with descriptive material expressed in a referring expression" (von Heusinger, 2007: 132). This means that the accessibility structure of a discourse is organized in such a way that the discourse entities are ranked according to their salience within each set, which is associated with a predicate used in that discourse,

[85] In the literature on discourse-pragmatics, the term "salience" is used interchangeably with the terms "prominence", "accessibility", "attention" and "activation" (von Heusinger & Schumacher, 2019).

and according to the relations between these sets. According to von Heusinger (2007: 132), this view can be well demonstrated by the peculiarities of definite and indefinite noun phrase, since they exhibit descriptive content, in contrast to pronouns and proper names.

3.1.2 Accessibility scales

Ariel (1988, 1990) proposes an "Accessibility Marking Scale", shown in Table 8, according to which different types of referring expressions correspond to different degrees of accessibility of their associated referents.

Table 8. The Accessibility Marking Scale (Ariel, 1990: 73).

	Marking Scale	**Examples Turkish**
Low Accessibility		
↕	Full name + modifier	-
↕	Full ('namy') name	-
↕	Long definite description	*aldığım kitabı*
↕	Short definite description	*kitabı*
↕	Last name	-
↕	First name	-
↕	Distal demonstrative + modifier	*aldığım o kitap*
↕	Proximal demonstrative + modifier	*aldığım bu kitap*
↕	Distal demonstrative + NP	*o kitap* 'that book'
↕	Proximate demonstrative + NP	*bu kitap* 'this book'
↕	Distal demonstrative	*o* 'that'
↕	Proximate demonstrative	*bu* 'this'
↕	Stressed pronoun + gesture	*O* (with gesture)
↕	Stressed pronoun	*O*
↕	Unstressed pronoun	*o*
↕	Cliticized pronoun	not available
↕	Extremely high accessible markers	gaps, including pro, PRO and wh-traces, reflexives and Agreement
High Accessibility		

Modifications adapted from Arnold (1998). Turkish examples added.

According to Ariel (1990), the choice of a referring expression depends on the ease of retrieving the intended referent. Thus, high accessibility-marking expressions, such as covert pronouns, are less informative and imply "minimal effort", while low accessibility-marking expressions, such as adnominal demonstratives, are more informative and imply "greater effort" in recovering the antecedent from the memory. Ariel (1990: 28, 29) suggests four different parameters that affect the accessibility status of an antecedent, namely: (i) the distance between the anaphor and the antecedent, (ii) the competition for salience between entities, (iii) the salience of an antecedent, determining whether it is the topic or not, and (iv) the unity of the antecedent, indicating whether the antecedent and the anaphor are in the same discourse segment. The third and fourth parameters, salience and unity, correspond to von Heusinger's (2007) "activation" and "accessibility structure" respectively. According to Ariel (1990: 27), the activation or the degree of accessibility is determined by two factors, the salience of the antecedent (corresponding to von Heusinger's concept of "salience") and the nature of the relationship between the antecedent and the anaphor (corresponding to von Heusinger's "accessibility relation").

Gundel et al. (1993) suggest another hierarchy, the so-called "Givenness Hierarchy", shown in Table 9, in which six implicationally related cognitive statuses are proposed that correspond to different linguistic forms.

Table 9. The Givenness Hierarchy (Gundel et al, 1993: 275).

in focus	>	activated	>	familiar	>	uniquely identifiable	>	referential	>	type identifiable
it		*that* *this* *this* N		*that* N		*the* N		indefinite *this* N		*a* N

Gundel et al. (1993) assume that, in using a particular form, a speaker signals that the associated cognitive status is met. In particular, if a speaker uses *it*, he or she signals that all lower statuses have been met, since each status entails all lower statuses to the

right. Unlike Ariel (1990), Gundel et al. (1993) do not provide different parameters that determine the accessibility status of an antecedent; rather they present a detailed description for each status that corresponds to the cognitive status of the referent in the mental domain. "Type identifiable" means that the addressee is able to access a representation of the type of the object described by the expression. This status is necessary for an appropriate use of any nominal expression, and it is sufficient for the use of the indefinite article *a* in English. "Referential" corresponds to the speakers' intention to refer to a particular object or set of objects. The status "Referential" is necessary for an appropriate use of all definite expressions, and it is both necessary and sufficient for indefinite *this* in English. "Uniquely Identifiable" indicates that the addressee can identify the speaker's intended referent on the basis of the nominal alone. This status is a necessary condition for all definite reference, and it is both necessary and sufficient for an appropriate use of the definite article *the*. "Familiar" conveys that the addressee is able to uniquely identify the intended referent because he or she already has a representation of it in memory. This status is necessary for all personal pronouns and definite demonstratives and it is sufficient for an appropriate use of the demonstrative determiner *that*. "Activated" implies that the referent is represented in the current short-term memory. It is necessary for an appropriate use of all pronominal forms, and it is sufficient for the use of the demonstrative pronoun *that* as well as for the stressed personal pronouns. "In Focus" means that the referent is not only in the short-term memory but is also at the current center of attention. This status is necessary for an appropriate use of zero and unstressed pronominals. According to Gundel et al. (1993) entities in focus are a partially ordered set of activated entities, which are likely to be continued as topics in the subsequent discourse. Therefore, entities in focus include at least the topics of the preceding utterance, as well as any relevant higher-order topics.[86]

In general, the two hierarchies are quite similar in that they regard accessibility as a gradient property of a cognitive or mental entity, which can be more or less accessible. However, the two accounts differ with respect to the relation between the categories

[86] According to Gundel et al. (1993) the concept of topic is understood as the speaker's intention regarding what the sentence is primarily about. They argue that although the topic is often in subject position, it does not have to be. In fact, the topic need not be overtly represented in the sentence at all.

in the hierarchy. While Ariel (1990) assumes that the categories are ordered independently of each other from low accessible to high accessible, Gundel et al. (1993) regard them as mutually dependent, suggesting an implicational ordering where more accessible statuses include less accessible ones. Nevertheless, both approaches agree that "pronouns are used most often when the referent is represented in a prominent way in the minds of the discourse participants, but more fully specified forms are needed when the representation of the referent is less prominent" (Arnold, 1998: 4). Having briefly defined the concept of accessibility, I will now shift the focus to accessibility from the perspective of discourse structure.

3.1.3 Accessibility and discourse transparency in DRT

Theories on discourse structure implement accessibility in two different ways, either as a gradient property (Lappin & Leass, 1994; Grosz et al., 1995) or as a binary one. The standard Discourse Representation Theory (DRT) by Kamp & Reyle (1993) regards accessibility as a binary property of a discourse domain; thus, discourse referents are either accessible or not. Whether a discourse referent is accessible or not depends on structural restrictions, which are formulated in so-called "construction rules" for a Discourse Representation Structure (DRS). This means that one discourse referent can only be linked to another one if it is represented in the same DRS or discourse domain. Discourse referents that are embedded under negation or modals appear in the subdomain of a DRS and are therefore inaccessible for anaphoric uptake. Referring expressions without any operators introduce new discourse referents in the main discourse domain. Thus, the anaphoric relation between an antecedent and a discourse anaphor is an identity relation in which the new discourse referent is equated with an already established discourse referent in the same discourse domain.

Farkas & de Swart (2003) propose a modified version of Kamp & Reyle's DRT, in which they implement accessibility as a gradient property by suggesting a division between accessible discourse referents and accessible thematic arguments. This division is basically intended to account for the anaphoric uptake of full-fledged arguments, pseudo-incorporated objects and implicit arguments (see section 3.2.1).

They propose the discourse prominence scale[87] in (192) (adapted from Farkas & de Swart, 2003: 82).

(192) discourse referent > restricted T(hematic)A(rgument) > unrestricted TA

According to this scale, discourse referents are more prominent and therefore better suited to be picked up by discourse anaphora than restricted and unrestricted thematic arguments.[88] This means that the higher in prominence a discourse entity is, the more accessible it is, and thus the more easily it can function as the antecedent of a discourse pronoun. Farkas & de Swart (2003) assume that discourse prominence is connected to discourse visibility and informativity. Therefore, they suggest that discourse referents are more visible than thematic arguments, which is the reason why thematic arguments are not listed in the universe of a discourse, in contrast to discourse referents. Moreover, with regard to the distinction between restricted and unrestricted thematic arguments, they claim that restricted thematic arguments are more prominent than unrestricted ones due to their increased informativity. However, Farkas & de Swart (2003) depart from the standard assumptions concerning accessibility hierarchies. They introduce the notion of "discourse translucency" in connection with covert pronouns referring back to pseudo-incorporated objects. In particular, they argue that, cross-linguistically pseudo-incorporated objects exist on a continuum, ranging from being discourse transparent to being discourse opaque, as shown in (193).

(193) discourse transparent > discourse translucent > discourse opaque

According to Farkas & de Swart (2003), languages may belong to any of these categories. In this regard they posit a one-to-one mapping of transparency and discourse anaphora; see Table 10.

[87] Farkas & de Swart (2003) address this hierarchy using the concept of "salience". I use the term "prominence" henceforth.

[88] Farkas & de Swart (2003) use relevant notions from Centering Theory. They assume that the higher an element is in C_f, the more prominent it is. Several parameters that can be thought of as prominence hierarchies are pertinent to the ranking of the members in the C_f. One hierarchy they point out is the thematic role hierarchy (Agent > Experiencer >Theme). According to Farkas & de Swart (2003: 83) languages show a preference for theme (direct object) incorporation which is supported by the fact that there are languages that allow only theme incorporation, but there is no language which allows the incorporation of agents (or subjects), but which excludes the incorporation of direct objects.

Table 10. Discourse Transparency Hierarchy (Farkas & de Swart, 2003: 131).

Category	**Reference**
discourse transparent	overt and covert pronouns
discourse translucent	covert pronouns
discourse opaque	-

As shown in Table 10, Farkas & de Swart (2003) use the term "discourse translucent" for thematic arguments that can be referred back to only by covert pronouns. This concept of discourse translucency contrasts with the accessibility hierarchy by Ariel (1990). According to the accessibility hierarchy, only highly accessible discourse entities are able to be picked up by covert pronouns. However, Farkas & de Swart (2003) argue that discourse translucent entities can be picked up by covert pronouns, although thematic arguments are less prominent than discourse referents. Hence, the following opposing scales result from the discrepancy between the two concepts, as shown in (194) and (195).

(194) Discourse accessibility scale
definite descriptions > overt pronouns > covert pronouns

(195) Discourse translucency scale
covert pronouns > overt pronouns

These scales make different predictions with regard to the anaphoric uptake of incorporated objects. The accessibility scale predicts that incorporated objects only allow anaphoric uptake by definite descriptions due to their low accessibility. In contrast, the translucency hypothesis predicts a preference for the anaphoric uptake of incorporated objects by covert pronouns.
Building upon these scales and the discourse transparency hierarchy, I formulate four different hypotheses, as illustrated in (196).

(196) a. The discourse opacity hypothesis
Incorporated objects or bare objects do not allow anaphoric uptake.

b. The discourse transparency hypothesis
   Incorporated objects or bare objects allow anaphoric uptake through overt and covert anaphora to the same extent as their non-incorporated counterparts.

c. The discourse translucency hypothesis
   Incorporated objects or bare objects allow anaphoric uptake preferably through covert anaphora.

d. The discourse accessibility hypothesis
   Incorporated objects or bare objects allow anaphoric uptake only through low accessibility-marking expressions, such as definite descriptions.

According to the discourse opacity hypothesis, (pseudo-)incorporated objects are not accessible, meaning that they do not allow pronominal uptake. In contrast, the discourse transparency hypothesis posits that (pseudo-)incorporated objects permit both overt and covert pronominal uptake, while the translucency hypothesis argues that only covert anaphora are possible. Lastly, the accessibility hypothesis suggests that (pseudo-) incorporated objects have low accessibility, which is why they can only be referred to by definite descriptions. In conclusion, these hypotheses exhibit a pattern of complementary distribution.[89]

3.2 Discourse translucency of pseudo-incorporated nouns in DRT

In this section, I provide a chronological overview of key approaches in the literature concerning the anaphoric potential of pseudo-incorporated nouns or bare nouns. Specifically, I focus on the contributions of Farkas & de Swart (2003) and Yanovich (2008) in the context of Hungarian, as well as the work by Modarresi (2014) and Krifka & Modarresi (2016) on Persian. These theories are significant as they primarily

[89] A note on the difference between the opacity hypothesis and the accessibility hypothesis: One might think that they are not mutually exclusive, but in fact, they are. As described in section 2.4.5, bare nouns in idiom formation and bare nouns in combination with true light verbs are not able support anaphoric uptake, not even with definite descriptions. In contrast, bare nouns in combination with vague action verbs and with regular verbs support anaphoric uptake even with overt pronominals.

address the discourse transparency of pseudo-incorporated nouns within the framework of Discourse Representation Theory.

3.2.1 Farkas & de Swart (2003)

Farkas & de Swart (2003) investigate the anaphoric potential of pseudo-incorporated objects in Hungarian. The contrast between an incorporated and a non-incorporated direct object in Hungarian is illustrated in (197) (taken from Farkas & de Swart, 2003: 18).

(197) a. János **egy** **beteget** vizsgált a rendelőben.
János a patient.ACC examine.PST the office.in
'János examined a patient in the office.'

b. János **beteget** vizsgált a rendelőben.
János patient.ACC examine.PST the office.in
'János patient-examined in the office.'

In (197a), the direct object is a full-fledged argument consisting of the indefinite determiner *egy* 'a' and the object *beteget* 'patient' marked with accusative case. In (197b) on the other hand, the direct object is bare, i.e., not preceded by a determiner, though accusative case marking is still present. Syntactically, the bare noun in (197b) obligatorily occurs immediately before the verb, while the full-fledged argument usually occurs postverbally (see section 2.2.1, example (55)).[90] Farkas & de Swart (2003) argue that the noun in (197b) is morpho-syntactically pseudo-incorporated in the sense of Massam (2001). From a semantic point of view, they observe that pseudo-incorporated nouns in Hungarian exhibit the typical semantic hallmarks of noun incorporation, i.e., narrow scope, number neutrality, reduced discourse transparency and name-worthiness.[91]

Concerning the anaphoric potential of pseudo-incorporated nouns, Farkas & de Swart (2003) argue that they are neither fully discourse transparent nor fully discourse

[90] Note that in (197a) the indefinite object is focused, since it occurs in the preverbal focus position (Balogh, 2013).

[91] Notably, Farkas & de Swart (2003) argue that an incorporated noun that has a "quasi-idiomatic" meaning in conjunction with the verb is more acceptable when it is picked up by a covert pronoun than an incorporated noun without an idiomatic meaning.

opaque; rather, they are "discourse translucent". Consider the examples in (198) and (199) (taken from Farkas & de Swart, 2003: 136; emphasis in bold added).

(198) a. János$_i$ **beteget$_j$** vizsgált a rendelőben.
János patient.ACC examine.PST the office.in
'János$_i$ patient$_j$-examined in the office.'

b. *pro$_i$* Túl sulyosnak találta ***pro$_j$*** **/ ??őt$_j$** és
pro too severe.DAT find.PST pro / he.ACC and
beutaltatta *pro$_j$* a korházba.
intern.CAUS.PST pro the hospital.in
'He$_i$ found him$_j$ too sick and sent him$_j$ to hospital.'

(199) a. János$_i$ **egy beteget$_j$** vizsgált a rendelőben.
János a patient.ACC examine.PST the office.in
'János$_i$ examined a patient$_j$ in the office.

b. *pro$_i$* Túl sulyosnak találta ***pro$_j$*** **/ őt$_j$** és
pro too severe.DAT find.PST pro / he.ACC and
beutaltatta *pro$_j$* a korházba.
intern.CAUS.PST pro the hospital.in
'He$_i$ found him$_j$ too sick and sent him$_j$ to hospital.'

The example in (198) demonstrates that the pseudo-incorporated noun can only be referred back to by a covert pronoun, not by an overt pronoun marked for number. On the other hand, the full-fledged counterpart in (199) can antecede either an overt or covert pronoun.[92]

To model the discourse translucency of pseudo-incorporated nouns in Hungarian, Farkas & de Swart (2003) propose a modification of the Discourse Representation Theory of Kamp & Reyle (1993). The gist of their modified version is concerned with the distinction between discourse referents and "thematic arguments". The basic idea is that predicative expressions (verbs, common nouns, adjectives, certain prepositions) denote n-place relations that introduce thematic arguments whereas determiners,

[92] Farkas & de Swart (2003) also discuss bare plurals and argue that they are fully discourse transparent in contrast to bare singulars. They suggest that the plural morpheme introduces a presupposed discourse referent and a predicate of plurality on it. This discourse referent has to be accommodated in case the nominal is bare. If a determiner is present the presupposed referent is bound by the discourse referent introduced by the determiner.

proper names and pronouns introduce discourse referents. The assumption behind that is that lexical items, coming from the lexicon, carry DRS conditions in which arguments are represented by thematic arguments. For instance, the noun *student* carries the condition *student(x)* and the intransitive verb *leave* carries a condition *leave(x)*. When these lexical items or the corresponding parts of the syntactic structure are processed during a DRS construction, the processing rules ensure that thematic arguments are replaced by discourse referents. This mapping is called "Instantiation". For thematic arguments of common nouns instantiation is performed by determiners ("D(eterminer)-Instantiation"), while for thematic arguments of verbs instantiation is carried out by corresponding syntactic arguments ("A(rgument)-Instantiation"). Note that the former reduces "the node made of a D and its NP sister" and the latter reduces "a node dominating a predicative expression and one of its arguments" (Farkas & de Swart, 2003: 32).

At the level of a DRS, thematic arguments are invisible; thus, unlike discourse referents they do not appear in the universe of a DRS *K*. As an example, consider the sentence in (200) (adapted from Farkas & de Swart, 2003: 32) and its corresponding discourse representation structures in (201).

(200) A student leaves.

(201) a. Contribution of the common noun and the VP

[$_S$ [$_{DP}$ [$_D$ a [$_{NP}$ **student(z)**]]] [$_{VP}$ **leave(x)**]]

b. Contribution of D

[$_S$ [$_{DP}$ [$_D$ **u** [$_{NP}$ student(z)]]] [$_{VP}$ leave(x)]]

c. Application of D-Instantiation

u_z
[$_S$ [$_{DP}$ [$_D$ **u_z** [$_{NP}$ student(**z**)]]] [$_{VP}$ leave(x)]]

d. After D-Instantiation

u
student(**u**) [$_S$ [$_{DP}$ **u**] [$_{VP}$ leave(x)]]

e. Final DRS after A-Instantiation

u
student(**u**) leave(**u**)

As illustrated in the discourse representation structures in (201), Farkas & de Swart (2003) use two different types of variables. They use *x,y,z* for thematic arguments and *u,v,t* for discourse referents. Leaving aside the details of the interpretation of the DP, Farkas & de Swart (2003) assume that its contribution is a discourse referent *u*, and a predicative condition *student*(*u*); see (201d). The intransitive verb *leave* carries the predicative condition *leave*(*x*); see (201a). After the verb combines with the subject DP, the thematic argument *x* of the intransitive verb is instantiated by the discourse referent *u* introduced by the subject DP, resulting in the final DRS in (201e).

Turning now to incorporated objects, Farkas & de Swart (2003) argue that they contribute a predicative condition, but do not instantiate a discourse referent. Rather, they combine with their predicate by means of a process that "unifies" two thematic arguments, one contributed by the verb and one by the incorporated nominal. The composition rule for "Unification" is given in (202) (taken from Farkas & de Swart, 2003: 65).[93]

[93] A similar "unification-based" analysis has been proposed by Bende-Farkas (1999) and Bende-Farkas & Kamp (2001).

(202) Unification

Replace the relevant thematic argument *y* of a verbal predicate with the thematic argument *z* contributed by a nominal argument of the verb.

This rule corresponds to Chung & Ladusaw's (2004) composition mode Restrict since the incorporated nominal restricts, but does not instantiate or saturate the thematic argument of the predicate, resulting in a complex predicate in the sense that they share the thematic argument *z* (Farkas & de Swart, 2003: 97).[94] Consider the example in (203) (taken from Farkas & de Swart, 2003: 98).

(203) Az orvos **beteget** vizsgált.
the doctor patient.ACC examine.PST
'The doctor patient-examined.'

Constructing the DRS step by step, the definite article *az* of the subject DP in (203) contributes a discourse referent *u*, and the NP *orvos* 'doctor' the predicative condition *doctor*(*z*′). The preverbal incorporated nominal *betget* 'patient', on the other hand, contains neither an article nor a morphological number feature and therefore contributes only the predicative condition *patient*(*z*). The verb *vizsgált* 'examine' contributes the predicative condition *examine*(*x,y*). Given that the subject is a full-fledged DP, it reduces via DP-internal instantiation, resulting in the substitution of the *u* for *z*′; see (204a). V′ is reduced via Unification, resulting in the substitution of the second thematic argument of the verb *y* by *z* as shown in (204b). The S node is reduced via A-instantiation. This leads to the final DRS in (204c).[95]

[94] Note that Farkas & de Swart's analysis accounts for doubling cases since Unification does not saturate the argument position of the verb and thus the predicate argument is available for Instantiation. See Farkas & de Swart (2003) for an DRT analysis of doubling cases in Chamorro.

[95] Mueller-Reichau (2005) proposes to augment Farkas & de Swart's DRT analysis by including a distinction between type-level arguments and token-level arguments. In particular, he suggests that thematic arguments are type arguments which may or may not be promoted to token arguments, depending on whether "spatiotemporal localization" applies or not. Thus, instantiation takes place through "spatiotemporal localization", which has basically the same function as Carlson's (1977) realization relation. See Mueller-Reichau (2005) for details.

(204) a. D-Instantiation

u
doctor(**u**) [S [DP **u**] [VP [V' [NP patient(z) [V examine(x,y)]]]]

b. Unification

u
doctor(u) [S [DP u] [VP [V' [NP patient(**z**) [V examine(x,**z**)]]]]

c. Final DRS after Unification and A-Instantiation

u
doctor(**u**) patient(z) examine(**u**,z)

Since, in standard DRT, predicative conditions may only have discourse referents as arguments, Farkas & de Swart (2003) propose the verification rule in (205) (taken from Farkas & de Swart, 2003: 63) to account for both uninstantiated thematic arguments and discourse referents being arguments of predicative conditions.

(205) Verification rule for predicate conditions

A function f verifies a condition of the form $P(a_1, \ldots, a_n)$ relative to a model M iff there is a sequence $\langle e_1, \ldots, e_n \rangle \in E^n$, such that $\langle e_1, \ldots, e_n \rangle \in I(P)$, and if a_i is a discourse referent, $e_i = f(a_i)$, and if a_i is a thematic argument e_i is some element in E.

According to (205) the DRS in (204c) is verified if there is a sequence $\langle e_1, \ldots, e_n \rangle$ in the universe of a discourse such that the conditions in (206) are met (where f assigns a value to the variable u).

(206) a. $\langle e_1, \ldots, e_n \rangle \in [\![\text{examine}]\!]$
b. $f(u) = e_1$
c. $f(u) = [\![\text{doctor}]\!]$
d. $e_2 \in [\![\text{patient}]\!]$

Thus, the embedding functions for thematic arguments do not assign a value to the thematic argument; rather, for the condition to be met, it suffices to have a thematic argument e_2 in the set of entities which satisfies the condition in (206d).

The basic idea of the verification rule is to impose existential closure of the uninstantiated thematic argument at the predicate or event level (Farkas & de Swart, 2003: 63). This ensures that the incorporated nominal is existentially embedded within the predicative condition.

To account for that uninstantiated thematic arguments being able to serve as antecedents for covert pronouns, Farkas & de Swart (2003) propose the construction rule for covert pronouns in (207) (taken from Farkas & de Swart, 2003: 143, 144).

(207) Construction rule for covert pronouns

If an accessible and suitable discourse referent *u* cannot be found, add a condition of the form $v \simeq x_i$, where x_i is an accessible and suitable uninstantiated thematic argument that is part of a condition $P(x_1, \ldots x_i, \ldots x_n)$ in Con_K or $\text{Con}_{K'}$ of some K' that is superordinate to K.

The construction rule indicates that the squiggle identity relation $v \simeq x_i$ is a relation between a discourse referent and an uninstantiated thematic argument that is an accessible and suitable antecedent, because it is part of the predicative condition in *K* or in a DRS that is superordinate to *K*. This relation ensures that the uninstantiated thematic argument *x* and the discourse referent *v* contributed by the covert pronoun are anchored to the same individual. According to Farkas & de Swart (2003), this justifies the fact that the squiggle identity involves a version of binding rather than of accommodation.[96] The verification clause for ≃ is given in (208) (taken from Farkas & de Swart, 2003: 144).

[96] Farkas & de Swart (2003) follow van der Sandt's (1992) proposal that anaphoric pronouns, unlike (definite) descriptions, do not allow accommodation of their antecedents.

(208) Verification rule for ≃

A function *f* verifies a condition of the form $v \simeq x_i$, where *v* is a discourse referent and x_i is an uninstantiated thematic argument that shows up in the i-th position of a predicative condition of the form $P(x_1, ..., x_i, ..., x_n)$, iff *f* maps *v* onto the individual e_i that is the i-th element of the *n*-tuple $\langle e_1, ..., e_i, ..., e_n \rangle$ that verifies the condition $P(x_1, ..., x_i, ..., x_n)$.

To illustrate how covert pronouns bind uninstantiated thematic arguments, I start with the DRS following in (210) as the output of the first sentence in (209) and as the input of the second sentence in (211) (taken from Farkas & de Swart, 2003: 145). Remember that the discourse referent which is introduced by the subject DP *az orvos* 'the doctor' is represented by *u*, and the uninstantiated thematic argument that arose via Unification of the contribution of the incorporated object *beteget* 'patient' with its predicate *examine* is represented by *z*, as shown in (210).

(209) Az orvos$_i$ **beteget$_j$** vizsgált.
the doctor patient.ACC examine.PST
'The doctor$_i$ patient$_j$-examined.'

(210) DRS for (209)

u
doctor(u) patient(z) examine(u,z)

According to the construction rules for covert pronouns, the two covert pronouns in (211) introduce new discourse referents into the discourse universe, represented by *v* and *w* respectively. The covert pronoun pro_i in subject position introduces a discourse referent *v*, which binds to *u* ($v = u$). On the other hand, the covert pronoun in object position pro_j introduces a discourse referent *w*, which cannot be bound to a discourse referent since the intended antecedent is the restricted thematic argument *z*. Therefore, *w* binds to the restricted thematic argument *z* of the incorporation construction. The binding of the covert pronoun and the thematic argument is carried out via the squiggle identity condition $w \simeq z$, as shown in the final DRS (212).

(211) *pro*$_i$ Túl sulyosnak találta ***pro***$_j$ és
pro too severe.DAT find.PST pro and
beutaltatta *pro*$_j$ a korházba.
intern.CAUS.PST pro the hospital.in
'He$_i$ found him$_j$ too sick and sent him$_j$ to hospital.'

(212) Final DRS for (211)

u v w
doctor(u) patient(z) examine(u,z) **v = u** **w ≃ z** send(v,w)

Farkas & de Swart (2003: 146) argue that there is no difference between the identity condition $u = v$ and the squiggle identity condition w ≃ z in terms of truth conditions. In both cases, the antecedent and the anaphor relate to the same individual, which underpins the claim that overt and covert pronouns involve binding. However, they claim that there is a difference in their dynamic potential. While overt pronouns require an existing discourse referent and thus do not make the universe of discourse of a DRS richer than it already was, covert pronouns have the ability to turn a thematic argument into a discourse referent. Farkas & de Swart (2003) present the example in (213) (taken from Farkas & de Swart, 2003: 146; emphasis in bold added) to support their claim.

(213) a. Mari$_i$ **gyereket**$_j$ vár.
Mari child.ACC expect
'Mari$_i$ is expecting a **child**$_j$.'

b. *pro*$_i$ Azt reméli, hogy ***pro***$_j$ fiú és hogy majd
pro that hopes that pro boy and that future
ő$_j$ fogja átvenni az üzletet.
he will take.over the business
She$_i$ hopes that **it**$_j$ will be a boy and that **he**$_j$ will take over the business in the future.'

The incorporated noun *gyereket* ‘child’ in (213a) restricts an uninstantiated thematic argument, which serves as the antecedent for the covert pronoun in the embedded clause of the first conjunct in (213b). Given the fact that the covert pronoun introduces a discourse referent, which relates to the uninstantiated thematic argument *gyereket* ‘child’, it can be picked up by the overt pronoun *ő* ‘he’ in the second conjunct of the embedded clause.

Farkas & de Swart (2003) compare incorporated nominals with implicit arguments in Hungarian. While incorporated nominals are uninstantiated thematic arguments that are restricted by the contribution of the incorporated nominal, implicit arguments remain unrestricted. According to Farkas & de Swart (2003), this is why implicit arguments are less discourse prominent than incorporated ones (recall the discourse prominence scale in (192)). However, like incorporated nominals, implicit arguments can antecede covert pronouns; see (214) (taken from Farkas & de Swart, 2003: 147).

(214) Folyton pro_i írt de aztán el-tépte ***pro***$_j$.
kept pro write but then up-tear.DEF pro
‘He$_i$/She$_i$ kept writing but then he$_i$/she$_i$ tore it$_j$ up.’

Note that Hungarian verbs have two conjunctions, one “definite”, used in the presence of a definite direct object, and one “elsewhere”, used for intransitive or transitive verbs with indefinite objects or with uninstantiated thematic arguments. According to Farkas & de Swart (2003: 147), this is why the implicit argument of *írni* ‘write’ in (214) occurs in the elsewhere conjunction (left unglossed), whereas the verb *el-tépni* ‘tear up’ is in the definite conjunction, signaling the presence of a covert direct object pronoun.

In sum, Farkas & de Swart (2003: 141) claim that the choice of the pronoun determines whether it can antecede an uninstantiated thematic argument, or whether it requires a discourse referent as an antecedent. In other words, they suggest that there is no difference in the contribution of the incorporated nominal even in languages where incorporated nominals are discourse opaque; rather, there is a difference in the properties of the anaphoric expressions in these languages.[97] Farkas & de Swart (2003:

[97] Farkas & de Swart (2003) rule out the assumption that incorporated nominals differ with respect to whether they introduce discourse referents or involve uninstantiated thematic arguments, since such a solution would not allow for variation within one language.

148) refer to Mithun's (1984) example (48) from Mohawk, repeated here in (215), and point out that she was the first one to suggest an approach along these lines (see section 2.1.4).[98]

(215) K-atenún-hah-kwe. Áh tsi yehétkv.
I-watch-HAB-PST ah how she.ugly
'I was baby-sitting. Boy, is she ugly!'

With regard to languages where incorporated nominals are discourse transparent, i.e., West Greenlandic and Chamorro, Farkas & de Swart (2003) suggest that the pronouns are associated with construction rules similar to those of Hungarian covert pronouns.

3.2.2 Yanovich (2008)

Yanovich (2008) proposes an alternative account in DRT to capture cases in which incorporated nouns in Hungarian do indeed function as antecedents to overt pronouns in certain contexts, as shown in (216) (taken from Yanovich, 2008: 376; emphasis in bold added).

(216) a. A bátyá-m **házat** ve-tt a múlthéten.
the older.brother-1SG house.ACC buy-PST.3SG.SUBJ the past.week.SUPE
'The brother house-bought last week.'

b. Egész vagyon-t ad-ott **érte**.
whole fortune-ACC give -PST.3SG.SUBJ for.it
'He spent a fortune for it.'[99]

According to Yanovich (2008), world knowledge determines the "singularity" of the thematic argument in the predicative condition *house-buying.* Yanovich (2008) claims that thematic arguments never support anaphora directly; instead, he proposes that anaphoric reference to a thematic argument is in fact the reference to a discourse referent that is constructed by the context in which the thematic argument appears. He refers to the standard DRT analysis of Kamp & Reyle (1993), which uses two procedures to construct a new discourse referent. The first one is called "Summation"

[98] Di Sciullo & Williams (1987) support Mithun's view and take it as an argument against analyzing incorporation as head-movement à la Baker (1988).

[99] Glosses were supplied by András Bárány (personal communication).

and the second is called “Abstraction”. Summation is needed for cases like in (217) (taken from Kamp & Reyle, 1993: 307).

(217) **John** took **Mary** to Acapulco. **They** had a lousy time.

Basically, summation constructs a new discourse referent by summing up various discourse referents of the preceding context. Consider the final DRS in (218) (adapted from Kamp & Reyle, 1993: 308; emphasis in bold added).

(218) Final DRS for (217)

u v y Z U
John(u) Mary(v) Acapulco(y) u took v to y **Z = u ⊕ v** U = Z U had a lousy time

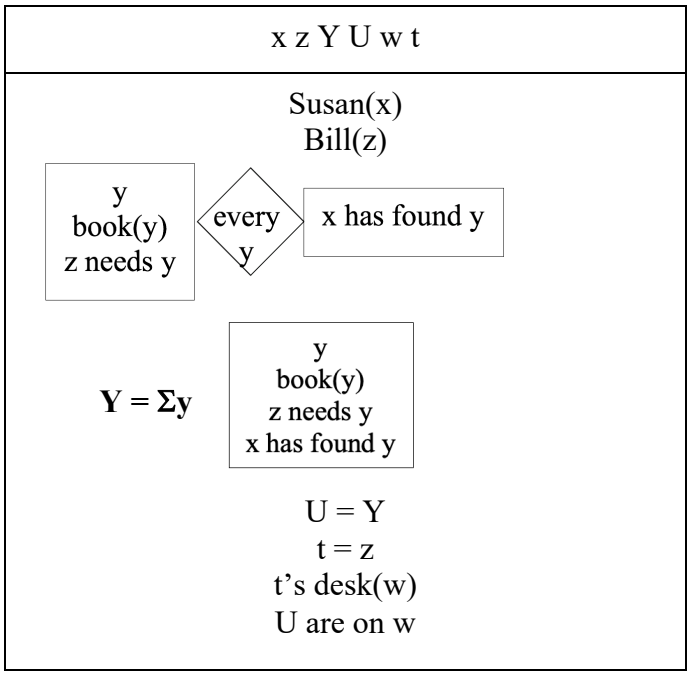
Note that the DRS in (218) contains discourse referents of two types: discourse referents represented by lower case letters (*u*, *v*, *y*), which stand for individual objects (atomic discourse referents), and discourse referents represented by upper case letters (*Z*, *U*), which stand for sets of individuals (non-atomic discourse referents). Thus, the atomic discourse referents *u*, *z* and *y* refer to *Mary*, *John* and *Acapulco*, respectively. The non-atomic discourse referent *U* refers to the plural pronoun *they*, while *Z* refers to both *John* and *Mary* via application of summation $u \oplus v$.

On the other hand, Abstraction is a related but nevertheless distinct process of antecedent construction. Abstraction is required for cases like in (219) (taken from Kamp & Reyle, 1993: 309).

(219) Susan has found **every book which Bill needs**. **They** are on his desk.

In simple terms, Abstraction creates a plural discourse referent by summing all individuals satisfying the conditions behind Σ in the final DRS given in (220) (adapted from Kamp & Reyle, 1993: 310; emphasis in bold added) for (219).[100]

(220) Final DRS for (219)



In essence, this condition says that the newly introduced discourse referent *Y* stands for the sum of all individuals *y*, which is the set of books that Bill needs.

In order to account for the discourse transparent cases of thematic arguments in Hungarian, Yanovich (2008) implements a third operation, in addition to Summation and Abstraction. He proposes "TA-Abstraction" (Abstraction for thematic arguments), which combines Summation and Abstraction in one operation. The rule for TA-Abstraction is given in (221) and the verifying clause is presented in (222) (taken from Yanovich, 2008: 378).

[100] Kamp & Reyle (1993: 311) call the tripartite structure in (220) the "duplex condition". They refer to the left DRS of the duplex condition as its "restrictor", to the right DRS as its "(nuclear) scope" and to the middle part as its "quantifier". The discourse referent in the middle part (here: y) is called the "principal discourse referent" of the duplex condition.

(221) TA-Abstraction

Take a DRS K and turn it into K_1, adding to it a new discourse referent v and a condition of the form v = Σx.K′, where K′is the copy of K.

(222) Verification rule TA-Abstraction

A function *f* verifies v = Σx.K′ in M iff $f(v) = \bigoplus\{a: a \in U_M \ \square\wedge$ (function $f \cup \langle x,a\rangle$ verifies K′)}

The verification rule in (222) basically says that "the new discourse referent *v* refers to the sum of all individuals *a* which satisfy the conditions of K′ when they are substituted for all the instances of the thematic argument x" (Yanovich, 2008: 378). Concretely, the discourse referent *v* refers to the maximal set of individuals that verifies the conditions of the thematic argument *x* which is abstracted over.

Yanovich (2008) claims that the verification rules for predicative conditions (205) and the squiggle identity relation (208) of Farkas & de Swart (2003) cannot ensure that the covert pronoun maps to the same individual which has been introduced in the predicative condition by the thematic argument. Rather, the pronoun may refer to any individual satisfying the predicative condition, as suggested by Farkas & de Swart (2003). Yanovich (2008) suggests that this is exactly what TA-Abstraction does. The reason why the speaker may successfully construct a singular discourse referent and use a singular pronoun as an anaphoric device, as shown in (216), is that world knowledge facilitates the inference that the maximal individual referred to by the thematic argument is, at most, atomic.

3.2.3 Modarresi (2014)

Modarresi (2014) investigates the anaphoric potential of pseudo-incorporated objects in Persian. Following Chung & Ladusaw (2004), she analyzes pseudo-incorporated nouns in Persian as property-denoting, combining with a transitive verb via the composition mode Restrict (see section 2.3.2). To ensure semantic completeness of the verb she adopts Chung & Ladusaw's (2004) application of existential closure (see also Modarresi & Simonenko, 2007). This guarantees that the predicate is saturated at the level of the VP, making it unavailable for further function application, i.e., for additional objects. To account for the anaphoric potential, Modarresi (2014) proposes

an alternative account to Farkas & de Swart's DRT analysis. In particular, she argues that pseudo-incorporated nouns in Persian do introduce number-neutral discourse referents into the universe of a DRS, which can be picked up by overt and covert pronouns depending on whether world knowledge evokes one or more individuals or leaves the number of the individuals unspecified.

Modarresi's motivation for analyzing pseudo-incorporated nouns as discourse referents rather than as uninstantiated thematic arguments comes from the following observations. First, she criticizes Farkas & de Swart's (2003) construction rules for overt and covert pronouns. In particular, she doubts the assumption that overt and covert pronouns have different construction rules. Second, she argues that Farkas & de Swart (2003) cannot explain cases in which pseudo-incorporated nouns can antecede overt pronouns.

To begin with the first observation, Modarresi (2014) argues against Farkas & de Swart's (2003) assumption that covert pronouns, in contrast to overt pronouns, have the power to promote a thematic argument to discourse referential status. She mentions the well-known "marble-examples" by Barbara Partee in (223) (taken from Modarresi, 2014: 66; see also Heim, 1982) in order to argue that overt pronouns are indeed able to create discourse referents out of uninstantiated thematic arguments.

(223) a. I dropped then marbles and found all of them, except for one.
It is probably under the sofa.

b. I dropped then marbles and found only nine of them.
??It / The missing marble is probably under the sofa.

The examples show that while context (223a) is fully acceptable, context (223b) seems to be unacceptable. However, Modarresi (2014) shows that the amount of material needed to promote an uninstantiated thematic argument to the status of a discourse referent depends on the context of use. The following turn-taking context in (224) allows an overt pronoun to refer back to the implicit argument.

(224) A: I dropped ten marbles and found only nine of them.
B: It is probably under the sofa.

According to Modarresi (2014), the reason is that speaker A probably did not plan to talk about the missing marble, thus did not provide a regular discourse referent for it. However, speaker B can accommodate a discourse referent and refer to it, since what A implies is that there is a single marble that A did not find.

Turning to the second observation, Modarresi (2014) shows that pseudo-incorporated nouns can antecede overt pronouns, which Farkas & de Swart (2003) cannot account for. Consider the following examples in (225) (adapted from Modarresi, 2014: 79-81).

(225) a. Leili **porteghal$_i$** khærid. Sepæs post-kænd-**Ø$_i$**/**?-esh$_i$** /**?-eshoon$_i$**.
Leili orange bought.3SG then skin-removed.3SG-it/-them
'Leili bought **an orange$_i$/oranges$_i$**. Then she skinned **it$_i$/them$_i$**.'

b. Leili **mobile$_i$** khærid. Gozasht-**esh$_i$** roo-ye-miz.
Leili cell.phone bought.3SG put.3SG-it on-EZ-table
'Leili bought **a cell phone$_i$**. She put **it$_i$** on the table.

c. Leili **havij$_i$** khærid. Sepæs khoord-**eshoon$_i$**-kærd.
Leili carrot bought.3SG then cut-them-did.3SG
'Leili bought **carrots$_i$**. Then she cut **them$_i$**.'

According to Modarresi (2014), the pseudo-incorporated noun in (225a) denotes either an atomic or a non-atomic individual; thus, it can easily be picked up by a covert pronoun as it is not specified for number. In such cases, Modarresi argues that overt pronouns are avoided. However, in (225b), world knowledge suggests that the pseudo-incorporated noun refers to an atomic entity ("uniqueness"); hence it can be picked up by an overt singular pronoun. In contrast, the pseudo-incorporated noun in (255c) can be picked up by an overt plural pronoun since world knowledge suggests that it refers to a non-atomic entity ("anti-uniqueness"). To capture these differences, Modarresi (2014) adopts Kamp & Reyle's (1993) distinction between atomic, non-atomic and number-neutral discourse referents. She proposes the following analysis (226) (adapted from Modarresi 2014: 79–81) for the examples in (225).

(226) a. [u δ | Leili(u), orange/s(δ), u buys δ, u skins δ]

b. [u δ v | Leili(u), mobile/s(δ), u buys δ, **δ=v**, u puts v on table]

c. [u δ V | Leili(u), carrot/s(δ), u buys δ, **δ=V**, c cuts V]

Note that the discourse representation structures are represented in the form [discourse referents | conditions], where the first part lists accessible discourse referents, and the second part specifies the conditions on them. As evident from (226a), the analysis suggests that the pseudo-incorporated noun *orange/s* introduces a number-neutral discourse referent δ that is picked up by a covert pronoun, which does not introduce a new discourse referent into the DRS. On the other hand, the analysis in (226b) shows that the overt singular pronoun introduces a new discourse referent v, which is anchored to the number-neutral discourse referent contributed by the pseudo-incorporated noun *mobile/s* via the condition δ=v. The analysis in (226c) illustrates that the number-neutral discourse referent *carrot/s* is anchored to a plural discourse referent V via the condition δ=V.

Modarresi (2014) extends her analysis to donkey sentences containing pseudo-incorporated nouns. She argues that, in donkey sentences, pseudo-incorporated nouns can be more easily referred to by overt pronouns. According to Modarresi (2014), the reason is that in such sentences the truth conditions do not differ with respect to quantification over atomic or non-atomic entities. This is why there is no preference for overt or covert anaphoric reference. Consider the sentence in (227) (taken from Modarresi, 2014: 81; indices and emphasis in bold added).

(227) ægeh kasi **ketab$_i$** mi-khær-eh, ghælebæn mi-khoodæd-**Ø$_i$**/**-esh $_i$**/**-eshoon$_i$**.
if one book DUR-buy-3SG often DUR-read-it-them
'If someone buys a book/books, usually reads it/them.'

The DRT analysis is presented in (228) (adapted from Modarresi, 2014: 81; emphasis in bold added). The analysis shows that all types of pronouns are possible in the context of (227).

(228) a. […| u δ | person(u), book/s(δ), u buys δ] ⇒ [| u reads **δ**]]

b. […| u δ | person(u), book/s(δ), u buys δ] ⇒ [**v** | **v = δ**, u reads **v**]]

c. […| u δ | person(u), book/s(δ), u buys δ] ⇒ [**V** | **V = δ**, u reads **V**]]

Representation (228a) corresponds to the use of a covert pronoun, representation (228b) to the use of a singular pronoun and representation (228c) to the use of a plural

pronoun. According to Modarresi (2014), the interpretation of the donkey sentence can be rendered as in (229) (taken from Modarresi, 2014: 82).

(229) $\forall x \forall y$ [person(x) $\wedge$ donkey(y) $\wedge$ buy(x,y) $\rightarrow$ read(x,y)]

The interpretation shows that the predicates *kharidan* 'buy' and *khoondan* 'read' are interpreted cumulatively, thus it does not matter whether we quantify variables anchored to atomic or non-atomic individuals.

In sum, Modarresi (2014) claims that pseudo-incorporated nouns in Persian are neither fully transparent nor fully opaque. Following Farkas & de Swart (2003), she argues that they are discourse translucent. Her analysis differs from Farkas & de Swart's (2003) in so far as she assumes that pseudo-incorporated nouns do introduce discourse referents into the discourse right away, but they are number-neutral. According to Modarresi (2014), this explains why covert pronouns can pick up these discourse referents more easily than overt pronouns.

3.2.4 Krifka & Modarresi (2016)

Krifka & Modarresi (2016) extend the analyses of Yanovich (2008) and Modarresi (2014) by proposing that pseudo-incorporated nominals in Persian introduce discourse referents similar to duplex conditions (recall the DRS in (220)), which require a complex summation and abstraction operation for their anaphoric uptake (Kamp & Reyle, 1993). In particular, they propose that pseudo-incorporated nominals in Persian are event-dependent definites bound by existential closure in the vP.

Krifka & Modarresi's motivation for modifying previous DRT analyses is driven by the following facts. First, they argue, in accordance with Yanovich (2008), that Farkas & de Swart's (2003) verification rule for predicative conditions, given in (205), does not ensure that the discourse referent contributed by the anaphor is anchored to the same individual denoted by the uninstantiated thematic argument in the preceding discourse. Second, they claim that Modarresi's (2014) account cannot explain why pseudo-incorporated nominals are number-neutral and why they can antecede both covert and overt pronouns since anaphoric uptake of pseudo-incorporated nominals is less than ideal. According to Krifka & Modarresi (2016), a speaker that intends to

continue talking about the individuals in question would rather not introduce them with pseudo-incorporated nominals. In order to account for these issues, they argue that covert and overt pronouns referring back to pseudo-incorporated nominals should be analyzed as E-type pronouns (Evans, 1980), namely "as pronouns with quantifier antecedents that do not c-command them" (Krifka & Modarresi, 2016: 878).

To account for the number neutrality and reduced transparency of pseudo-incorporated nominals, Krifka & Modarresi (2016) propose existential closure at the level of the vP (as proposed by Diesing, 1992), which is formulated in (230) (taken from Krifka & Modarresi, 2016: 880).

(230) vP closure

If K′ is a DRS, then ∃K′ is a DRT condition.
g verifies ∃K′ wrt a model ⟨A, F⟩ iff g can be extended to g′ such that g′ maps the DRs of K′ to A and verifies the conditions of K′ in ⟨A, F⟩.

Krifka & Modarresi (2016) assume that this condition operates at the level of the vP in which the pseudo-incorporated noun gets bound by existential closure (similar to Farkas & de Swart's (2003) verification rule for predicate conditions in (205)). Consider the example in (231) and the DRS in (232) (adapted from Krifka & Modarresi, 2016: 882).

(231) Leili porteghal khærid.
Leili orange bought.3SG
'Leili bought an orange/oranges.'

(232) K_0 + [*Leili*$_1$ EC [$_{vP}$ t_1 *porteghal khærid*]]
= [x_1 | x_1 = LEILI, ∃ [x_2 | x_2 = ORANGE(x_2), BUY(x_1, x_2)]
= K_1

The analysis in (232) ensures the number neutrality of the pseudo-incorporated nominal in the following way: The existential condition ∃ [x_2 | …] requires that the assignment g can be extended to g′ so that it maps the discourse referent x_2 to an object such that it verifies the conditions x_2 = ORANGE(x_2), BUY(x_1, x_2,). This existential condition can be satisfied multiple times, i.e., whenever there is an object x_2 that verifies the conditions of being an orange and being bought by Leili.

Moreover, the analysis in (232) presupposes that the pseudo-incorporated nominal is difficult to access, since its discourse referent x_2 occurs in a subordinated DRS. Consequently, anaphoric uptake cannot be achieved directly. Therefore, Krifka & Modarresi (2016) analyze anaphora to pseudo-incorporated nominals as E-Type pronouns, which require a complex abstraction and summation rule, as in (233) (taken from Krifka & Modarresi, 2016: 879).

(233) Abstraction and summation rule for number-neutral DRs

If K contains a duplex condition K′ Q K″, form the union K‴ = K′ ∪ K″, choose a DR x from K‴, add a new DR ξ to K, add the condition ξ = Σx K‴ where Σx K‴ is interpreted wrt an assignment g and a model ⟨A, F⟩ as the sum of all a ∈ A such that there is an extension of g′ of g with g′(x) = a that verifies K‴ wrt ⟨A,F⟩.

The maximality effect of the E-Type pronoun in (233) arises due to the summation operation $\xi = \Sigma x\ K'''$. Applied to the example in (234), we get the discourse representation structure in (235) (adapted from Krifka & Modarresi, 2016: 880).

(234) Leili **porteghal$_i$** khærid. Majnoon khord-**Ø$_i$**.
Leili orange bought.3SG Majnoon ate.3SG
'Leili bought an **orange$_i$/oranges$_i$**. Majnoon ate **it$_i$/them$_i$**.'

(235) K_1 + [*Majnoon khord-Ø.*]
= [x_1 | x_1 = LEILI, ∃ [x_2 | x_2 = ORANGE(x_2), BUY(x_1, x_2)]
ξ_2 x_3 | x_3 = MAJNOON, ξ_2 = Σx_2[x_2 | x_2 = ORANGE(x_2), BUY(x_1, x_2)],
EAT(x_3, ξ_2)]

The analysis in (235) illustrates the application of abstraction and summation. The number-neutral discourse referent ξ_2, contributed by the covert pronoun, is established from the sum of all x_2 for which it holds that it is an orange that Leili bought and that Majnoon ate. The operation captures the reason why covert pronouns are particularly well suited to picking up pseudo-incorporated nominals, and why, depending on world knowledge, overt singular and plural pronouns can also be used (recall the examples in (225) from Modarresi, 2014). Moreover, it demonstrates that there is a maximality effect in the anaphoric uptake of pseudo-incorporated nominals, which is illustrated by the example in (236) (taken from Krifka & Modarresi, 2016: 881).

(236) Ali khaneh darad. #Khane-ye-digari ham dard ke ejareh mideh.
Ali house have.3SG house-EZ-other also has that rent give.3SG
'Ali has house(s). #He also has another house that he rents out.'

The example (236) shows that the second sentence is pragmatically odd, as *digari* 'other' implies that Ali has additional houses, which are not included in the sum of all houses that Ali has.

Krifka & Modarresi (2016) take the proposed analysis in (235) one step further in order to account for the differences in (237) (adapted from Krifka & Modarresi, 2016: 875).

(237) a. Leili **porteghal** khærid.
Leili orange bought.3SG
'Leili bought an orange/orange.'

b. Leili **porteghal-rā** khærid.
Leili orange-OM bought.3SG
'Leili bought the orange.'

They argue that bare nominals marked with *-rā* receive a definite interpretation, as shown in (237b). They argue that these nominals also receive a maximality effect as bare objects without *rā*-marking. Therefore, they suggest that bare nominals always have a definite interpretation. Krifka & Modarresi (2016) assume that *rā*-marked objects escape existential closure over the vP. Consequently, they argue that this definiteness effect cannot be dependent on the vP. For this reason, they propose a Davidsonian event argument that undergoes existential closure, which indirectly binds its dependent discourse referent, as illustrated in (238) (adapted from Krifka & Modarresi, 2016: 882).

(238) K_1 + [*Majnoon khord-Ø.*]
= [x_1 | x_1 = LEILI, ∃ [x_2 e_3 | x_2 = ORANGE-OF(e_3), BUY(x_1, x_2, e_3)]
ξ_5 x_4 | x_4 = MAJNOON, ξ_5 = Σx_2[x_2 e_3 | x_2 = ORANGE-OF(e_3),
BUY(x_1, x_2)], EAT(x_4, ξ_5)]

As shown in (238), an event-dependent discourse referent e_3 is introduced by the event argument of the verb. The bare noun *porteghal* 'orange' is interpreted as a function that identifies the unique orange of this event and introduces a discourse referent x_2 for it. The pseudo-incorporated nominal has to be interpreted within the existential closure, since it is dependent on the event variable. This explains the apparent

indefiniteness. The resulting interpretation allows for more than one orange being bought by Leili, since there could be multiple buying events. According to Krifka & Modarresi (2016), this reflects the number neutrality of pseudo-incorporated nominals.

3.3 Intermediate discussion

The theories under discussion aim to explain how weak referential expressions, such as bare nouns or pseudo-incorporated nouns, can be anaphorically accessed. What they have in common is the assumption that pseudo-incorporated nouns are not as accessible as their indefinite counterparts. Hence, these theories treat pseudo-incorporated nouns as discourse translucent, rather than as fully discourse transparent. Farkas & de Swart (2003) analyze pseudo-incorporated nouns as uninstantiated thematic arguments that combine with the verb via Unification. Thus, pseudo-incorporated nouns do not instantiate discourse referents. Farkas & de Swart (2003) assume that pseudo-incorporated nouns in Hungarian are discourse translucent, and can only be accessed through covert pronouns. Therefore, they propose different construction rules for overt and covert pronouns. The construction rules force overt pronouns to bind a discourse referent and allow covert pronouns to bind an uninstantiated thematic argument if this is the only available antecedent in the discourse. Hence, covert pronouns have the ability to promote a thematic argument to discourse referential status. Farkas & de Swart (2003) argue that cross-linguistic differences in the discourse transparency of incorporated nouns can be accounted for by differences in the constraints on anaphoric expressions rather than by positing differences in the contribution of the incorporated noun. For instance, they argue that languages like West Greenlandic and Chamorro (recall the examples in (22) and (42)), where incorporated nouns are fully transparent and have pronouns (either overt or covert) associated with construction rules parallel to those of the Hungarian covert type. Conversely, languages in which incorporated nouns are fully discourse opaque have pronouns associated with construction rules of the Hungarian overt type. However, the proposed analysis does not account for cases in which Hungarian pseudo-incorporated nouns antecede overt singular pronouns under certain conditions. This obstacle is addressed by Yanovich (2008), who argues that overt anaphoric

reference to pseudo-incorporated nouns is achieved indirectly through summation and abstraction, which he subsumes under the operation of "TA-abstraction". Nevertheless, the essence of Farkas & de Swart's (2003) and Yanovich's (2008) analyses is quite similar: in both analyses, pseudo-incorporated nouns in Hungarian are treated as uninstantiated thematic arguments that are discourse translucent. In Farkas & de Swart's (2003) approach, discourse translucency is defined in terms of direct anaphoric reference due to binding rules, whereas, in Yanovich's (2008) analysis, anaphoric uptake of pseudo-incorporated nouns is achieved indirectly by means of abstraction. Although both approaches succeed in capturing the discourse translucent behavior of pseudo-incorporated nouns, they do not explain why pseudo-incorporated nouns are number-neutral.

Modarresi (2014) builds on Farkas & de Swart's (2003) analysis but argues that pseudo-incorporated nouns in Persian introduce number-neutral discourse referents. She claims that anaphoric uptake by overt singular and plural pronouns in Persian is possible, but suggests that world knowledge determines whether the pseudo-incorporated noun receives a singular or plural interpretation. Modarresi (2014) suggests an inherent connection between number neutrality and reduced discourse transparency, i.e., the reduced ability of pseudo-incorporated nouns to serve as antecedents for pronouns. However, she does not explain how number neutrality arises and why pseudo-incorporated nouns show reduced discourse transparency, as they can antecede overt singular and plural pronouns. Krifka & Modarresi (2016) capture these issues and propose a new type of analysis where pronouns referring to pseudo-incorporated nouns are analyzed as E-type pronouns. They suggest that pseudo-incorporated nouns are event-dependent definites that undergo existential closure, under which the event argument introduces a discourse referent as a function that identifies the unique objects of this event and introduces a discourse referent for it. Anaphoric uptake can then only be achieved indirect via abstraction and summation, similar to Yanovich's (2008) approach. While, on the one hand, this guarantees a number-neutral interpretation for incorporated nouns, on the other hand, it ensures discourse translucency, in a broad sense, since the incorporated noun cannot be picked up easily. In sum, Krifka & Modarresi's (2016) framework effectively captures the interrelated properties of number neutrality and reduced discourse transparency.

In a nutshell, the accounts give rise to different predictions with regard to the acceptability of overt and covert pronouns referring back to incorporated nominals. Farkas & de Swart's (2003) theory predicts discourse transparency for incorporated nominals that can be referred back to by overt pronouns, and discourse translucency for those involving covert anaphoric uptake. Consequently, if incorporated nouns are transparent, there is no difference to be expected in terms of acceptability judgements. However, if incorporated nouns are translucent, overt anaphoric reference should be less acceptable than covert anaphoric reference. Yanovich (2008) modifies the concept of discourse translucency proposed by Farkas & de Swart (2003). Discourse translucency, in his assumption, is a matter of difficulty in achieving indirect anaphoric reference through TA-abstraction. This implies that if incorporated nouns exhibit discourse translucency, overt anaphoric reference to them is expected to be less acceptable compared to regular indefinites. In contrast to Yanovich (2008), Modarresi (2014) predicts a difference in the acceptability of overt and covert anaphoric uptake of incorporated nouns. In particular, she predicts that the number bias of incorporated nouns plays a crucial role in conditioning the acceptability of singular and plural pronouns. This means that covert anaphoric uptake is preferred for neutral contexts where a singular or plural interpretation is not biased through world knowledge. Likewise, if singular pronouns occur in contexts where world knowledge conditions an atomic interpretation, higher acceptability ratings are expected compared to plural pronouns, and vice versa. Like Yanovich (2008) and Modarresi (2014), Krifka & Modarresi's (2016) account anticipates anaphoric uptake of incorporated nouns to be less acceptable than that of regular indefinites.

Based on these frameworks, the discourse translucency hypothesis formulated in (196c) in section 3.1.3 can be refined as in (239).

(239) The discourse translucency hypothesis

Incorporated objects or bare objects allow anaphoric uptake through overt and covert anaphora, albeit not to the same extent as their non-incorporated counterparts.

This refinement of the discourse translucency hypothesis captures the findings of the DRT frameworks discussed. Farkas & de Swart's (2003) understanding of discourse translucency was initially limited to incorporated objects that can antecede covert

pronouns. However, the concept of discourse translucency encompasses more fine-grained differences, including distinctions between pronoun types on the one hand and between incorporated and non-incorporated nouns on the other.

3.4 Anaphoric potential of bare nouns

As previously discussed in chapter 2, there has been a noteworthy debate in the literature regarding whether bare nouns in Turkish exhibit properties of discourse transparency (Bliss, 2004), properties of discourse translucency (Erguvanlı, 1984), or properties of discourse opacity (Öztürk, 2005a; among others). Recall the examples from (143), (110) and (92), as referenced in (240).

(240) a. Dün **film$_i$** seyret-ti-m,
yesterday movie watch-PST-1SG
***onu$_i$/*onları$_i$** sen de seyret-meli-sin.
it-ACC it-PL-ACC you too watch-MOD.2SG
'I did **movie$_i$**-watching yesterday, you should watch ***it$_i$/*them$_i$** too.'

b. Ahmet kaç gün-dür **resim$_i$** yap-ıyor-du.
Ahmet how.many day-ADV picture make-IMP-PST
Nihayet ***pro$_i$*/*onu$_i$** bitir-di.
finally pro/it-ACC finish-PST
'Ahmet was **picture$_i$**-painting for days. He finally finished **it$_i$.**'

c. Nurten **muz$_i$** al-dı. **On-u$_i$/On-lar-ı$_i$** buzdolabın-a koy-du.
Nurten banana buy-PST iT-ACC it-PL-ACC refrigerator-DAT put-PST
'Nurten bought **banana(s)$_i$**. She put **it$_i$/them$_i$** in the refrigerator.'

To empirically examine the anaphoric potential of bare objects in Turkish, I carried out an acceptability judgment task. Participants were asked to judge the acceptability of bare objects in contexts with overt pronominal uptake as well as in contexts with definite descriptions.[101] The experimental design, described in detail in section 3.4.3.1 in detail, not only provides insights into the anaphoric potential of bare nouns but also captures the number interpretation of bare nouns in Turkish. Both properties have been

[101] A remark on the studies conducted: early versions of the experimental findings have been published in Seidel (2019b).

reported as variable properties cross-linguistically, in section 2.2.4, in the context of noun incorporation. This investigation sheds light on these properties from an empirical perspective for the first time.

3.4.1 Norming Study 1a. Number interpretation of human bare objects

As pointed out in section 3.3, previous studies, like Yanovich (2008) and Modarresi (2014), have suggested that the contextual number bias of incorporated nouns plays a crucial role in conditioning their compatibility with subsequent pronouns. For this reason, a norming study was conducted to examine the number interpretation of each bare noun in various contexts.

In total, 40 students (29 women, 11 men; mean age: 29 years) participated in the norming study. Subjects were assigned the task of reading 36 short context sentences, similar to those in (241).

(241) a. Hüseyin Taksim meydanın-da **hırsız** **yakala-dı**.
Hüseyin Taksim Square-LOC thief catch-PST
'Hüseyin did thief-catching at the Taksim Square.'

b. Ümit geçen hafta mahkeme-de **hırsız** **cezalandır-dı**.
Ümit last week court-LOC thief punish-PST
'Ümit did thief-punishing last week at the court.'

c. Emre geçen hafta banka-da **hırsız** **gör-dü**.
Emre last week bank-LOC thief see-PST
'Emre did thief-watching last week at the bank.'

They were then asked to determine the number of individuals involved in each context, relying on their world knowledge. Three options were provided: (i) just one (SG), (ii) more than one (PL), and (iii) one or more than one (N). An example of the task is given (242).

(242) Task

Yukarıdaki cümleye göre sizce Emre kaç hırsız görmüş olabilir?

'According to the sentence above, how many thieves do you think Emre might have seen?'

(i) *1 hırsız* ‘one thief’
(ii) *1’den fazla hırsız* ‘more than one thief’
(iii) *1 veya 1’den fazla hırsız* ‘one or more than one thief’

The items consisted of 12 different human bare nouns, each in combination with three different verbs. Consequently, a total of 36 different contexts were tested. All items were included in one list, ensuring that every participant saw each context.

Figure 1 shows the results. It lists all the noun-verb combinations and the number bias determined from the norming study. Overall, Figure 1 indicates that the noun-verb combinations in different contexts were either interpreted as singular or as number-neutral. In section 3.4.3, I will examine these results and establish their correlation with the acceptability judgements from Main Study 1.

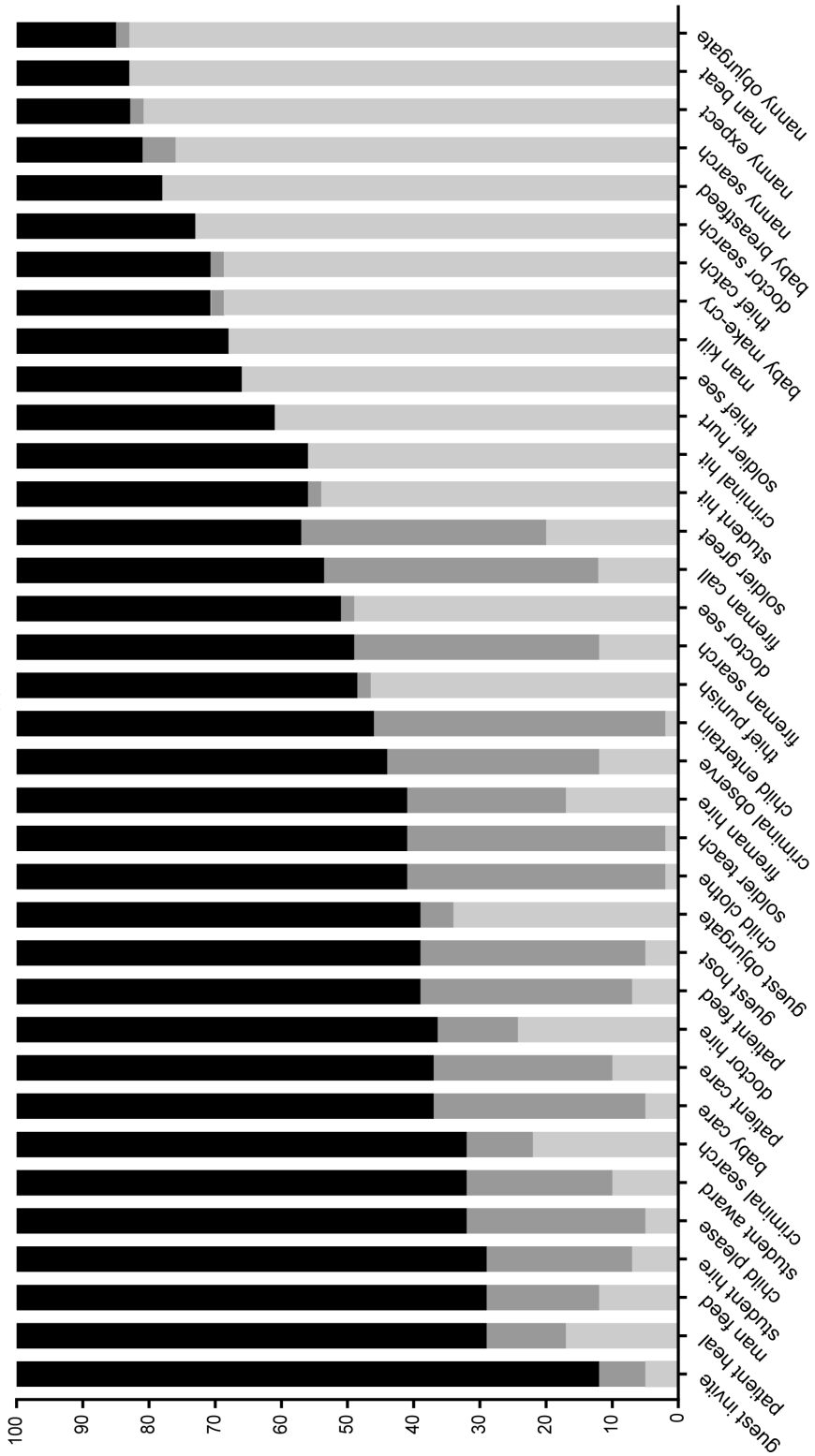


Figure 1. Norming Study 1a. Number interpretation of human bare

Percentage for number bias (N = neutral, PL = plural, SG = singular) of animate bare nouns in different contexts.

3.4.2 Norming Study 1b. Acceptability of noun-verb combinations

The second norming study was carried out to assess the overall acceptability of noun-verb combinations for the context sentences, repeated here in (243).[102]

(243) a. Hüseyin Taksim meydanın-da **hırsız** **yakala-dı**.
Hüseyin Taksim Square-LOC thief catch-PST
'Hüseyin did thief-catching at Taksim Square.'

b. Ümit geçen hafta mahkeme-de **hırsız** **cezalandır-dı**.
Ümit last week court-LOC thief punish-PST
'Ümit did thief-punishing last week at the court.'

c. Emre geçen hafta banka-da **hırsız** **gör-dü**.
Emre last week bank-LOC thief see-PST
'Emre did thief-watching last week at the bank.'

All items were included in one list and presented in pseudo-random order. 36 participants (26 women, 10 men; mean age: 29 years) filled in the questionnaire. Participants were asked to rate the acceptability of the sentences on a scale from 1 ("completely unacceptable") to 7 ("completely acceptable").

The results for this study are given in Figure 2. From the results it emerges that the contexts were generally accepted (mean score >4). The following seven noun-verb combinations were excluded for the main study due to their low acceptability (mean score <4): *child close*, *guest objurgate*, *thief punish*, *fireman search*, *patient feed*, *baby make-cry*, *nanny objurgate*.

[102] Since previous approaches have claimed that human or animate objects are less likely to incorporate, a norming study was needed to confirm that human objects can indeed undergo incorporation.

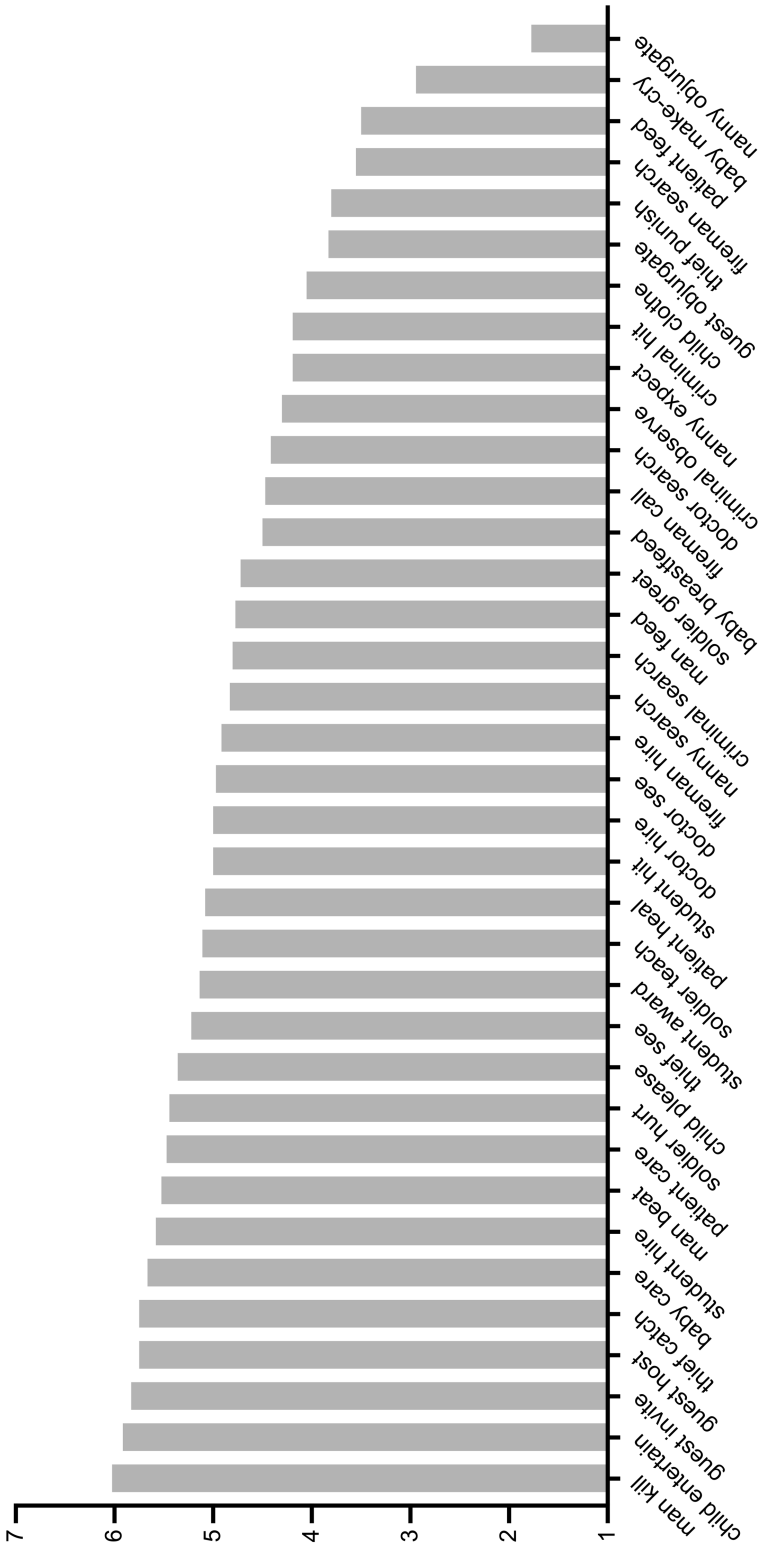


Figure 2. Norming Study1b. Acceptability of N-V combinations.

3.4.3 Main Study 1. Accessibility of bare objects

3.4.3.1 Method and materials

The experimental design consisted of four conditions, organized in a 2x2 design, combining the predictors (i) type of anaphoric expression (overt pronoun vs. definite noun) and (ii) number marking of the anaphoric expression (singular vs. plural). 36 different contexts were constructed, resulting in a total of 144 critical items. The material consisted of a context sentence including the bare noun (244) and a target sentence including the anaphoric expression referring back to the bare noun (244a) – (244d).[103]

(244) Tolga bugün Taksim meydanın-da **hırsız** yakala-dı.
Tolga today Taksim Square-LOC thief catch-PST
'Tolga did thief-catching at Taksim Square today.'

a. **On-u** rezil et-ti. Pron-SG
he-ACC embarrass do-PST
'He embarrassed her/him.'

b. **On-lar-ı** rezil et-ti. Pron-PL
he-PL-ACC embarrass do-PST
'He embarrassed them.'

c. **Hırsız-ı** rezil et-ti. DefN-SG
thief-ACC embarrass do-PST
'He embarrassed the thief.'

d. **Hırsız-lar-ı** rezil et-ti. DefN-PL
thief-PL-ACC embarrass do-PST
'He embarrassed the thieves.'

In all context sentences human bare objects were used. The reason for this is that continuations with overt pronouns referring back to human objects sound more natural than those referring to inanimate objects.[104] Furthermore, anaphoric expressions

[103] I would like to thank Yağmur Sağ-Parvardeh, Burak Tüfekçioğlu and Betül Erbaşı for their valuable comments on my experimental stimuli.

[104] Contexts such as *Ahmet dün bütün gün kitap$_i$ okudu. ?Onu$_i$ çok sevdi.*'Ahmet did book$_i$-reading yesterday all day long. He loved it$_i$.', where the anaphoric expression in the target sentence is supposed to refer to the inanimate object, does not sound natural.

referring back to the bare nouns consistently appeared in object position. This ensured a parallel structure of grammatical function for both the antecedent and the anaphor, which is crucial for the following reason. Resolution constraints on parallel structure suggest that grammatical function determines the type of anaphoric expression; that is, the subject, being more prominent, prefers a null pronoun, whereas the object, being less prominent, prefers an overt pronoun (Turan, 1998).[105]

In addition to the critical items, two types of control items were used: grammatical controls (245) and incongruent controls (246). Both types of control conditions included regular indefinites and plural definites. In the latter condition, there was a mismatch in number with regard to the pronoun in the second sentence. The incongruent controls were added to ensure that participants understood the experimental task and to check their attentiveness. The grammatical controls were added for comparative purposes, aiming to provide a basis for comparing constructions that involve regular indefinites with those including bare nouns.

(245) **Grammatical control condition**

a. Ozan dün emniyet müdürlüğün-de **bir** **suçlu** döv-dü.
Ozan yesterday police.department-LOC a criminal assault-PST
On-u yarala-dı.
he-ACC injure-PST
'Ozan assaulted a criminal at the police department yesterday. He injured her/him.'

b. Filiz dün huzur evinde **hasta-lar-ı** besle-di.
Filiz yesterday nursing.home patient-PL-ACC feed-PST
On-lar-ı doyur-du.
he- PL-ACC satisfy-PST
'Filiz fed the patients at the nursing home yesterday. She satisfied them.'

[105] However, as discussed in section 1.2, null objects do exist in Turkish. Nonetheless, their usage is restricted to contexts where disambiguation is accomplished through agreement constraints or through contextual cues. I delve deeper into this aspect in section 4.5.4.1, particularly when I discuss the experimental stimuli for Main Study 2.

(246) **Incongruent control condition**

a. Ozan dün emniyet müdürlüğün-de **bir** **suçlu** döv-dü.
Ozan yesterday police.department-LOC a criminal assault-PST
#On-lar-ı yarala-dı.
he-PL-ACC injure-PST
'Ozan assaulted a criminal at the police department yesterday. He injured #them.'

b. Filiz dün huzur evinde **hasta-lar-ı** besle-di.
Filiz yesterday nursing.home patient-PL-ACC feed-PST
#On-u doyur-du.
he-ACC satisfy-PST
'Filiz fed the patients at the nursing home yesterday. She satisfied #her/#him.'

All materials (48 items in total, 36 critical items and 12 control items) were distributed into four lists according to a Latin Square, ensuring that each list contained only one condition of one set. In this way, participants were prevented from seeing the same noun-verb combination twice. Lists were distributed across all participants and items were presented in a pseudo-random order.

In total, 80 monolingual native speakers of Turkish (55 women, 25 men; mean age: 29 years) participated in this study. The participants were born and raised in Turkey; they provided informed consent prior to the experiment and were informed that they could end participation at any time. They received a link to the questionnaire made in Google Forms and filled it in online. Detailed instructions were provided right before the questionnaire started. Participants were asked to rate how naturally they perceived the link between the context sentence and the target sentence on a scale from 1 (*kötü* badly linked) to 7 (*iyi* well linked). The experiment took about 20 minutes on average for each participant to complete.

3.4.3.2 Predictions

The predictions outlined in section 3.1.3 can be refined based on the DRT approaches discussed in section 3.2., as follows. According to the opacity hypothesis, pronominal reference to bare nouns is expected to lead to unacceptability. This suggests that critical items, such as those in (244a) and (244b), should be strongly dispreferred. In

line with the transparency hypothesis, similar acceptability ratings for the critical conditions and the grammatical control conditions are expected. According to the translucency hypothesis, pronominal preference for bare nouns should be judged as less acceptable than for regular indefinites. Additionally, there is a prediction of number bias based on world knowledge dependency. Specifically, higher acceptability is expected for continuations containing singular anaphoric expressions in contexts where world knowledge implies an atomic entity. Conversely, higher acceptability ratings are expected for continuations containing plural anaphoric expressions in contexts where world knowledge implies a non-atomic entity. When world knowledge indicates no preference for an atomic or a non-atomic entity, continuations containing singular and plural pronouns should be equally acceptable. Finally, in accordance with the accessibility hypothesis (and the (a) version of the translucency hypothesis), on the one hand, pronominal reference to bare nouns should be judged less acceptable than to regular indefinites. On the other hand, higher acceptability ratings are predicted for continuations containing definite descriptions compared to continuations containing singular or plural pronouns. A summary of these predictions is provided in Table 11 below.

Table 11. Predictions for Main Study 1.

Hypothesis	**Acceptability of anaphoric uptake**
Opacity	not acceptable
Transparency	a) BN = RI
Translucency	a) BN < RI b) NULL > [SG/PL] c) world knowledge dependency: 1) SG-context: [SG/NULL] > PL 2) PL-context: [PL/NULL] > SG 3) N-context: NULL > [SG/PL] or SG = PL
Accessibility	a) BN < RI b) DEF_N > [SG/PL] > NULL

Abbreviations: BN = bare noun, DEF_N = definite noun, N = neutral, NULL = null pronoun, PL = plural (pronoun), RI = regular indefinite, SG = singular (pronoun)

It is important to note that the study under consideration does not intend to test the (b) version of the translucency hypothesis. This is related to how the experimental stimuli were constructed. A null pronoun in sentence-initial position would have been infelicitous in this context. Additionally, if a null pronoun in sentence-initial position had been used, it would have preferably referred to the subject or agent of the context sentence, not the object or patient. However, in section 4.4.5., I will present the second study, which was specifically designed to examine how bare nouns can be accessed through null anaphora.

3.4.3.3 Analysis and results

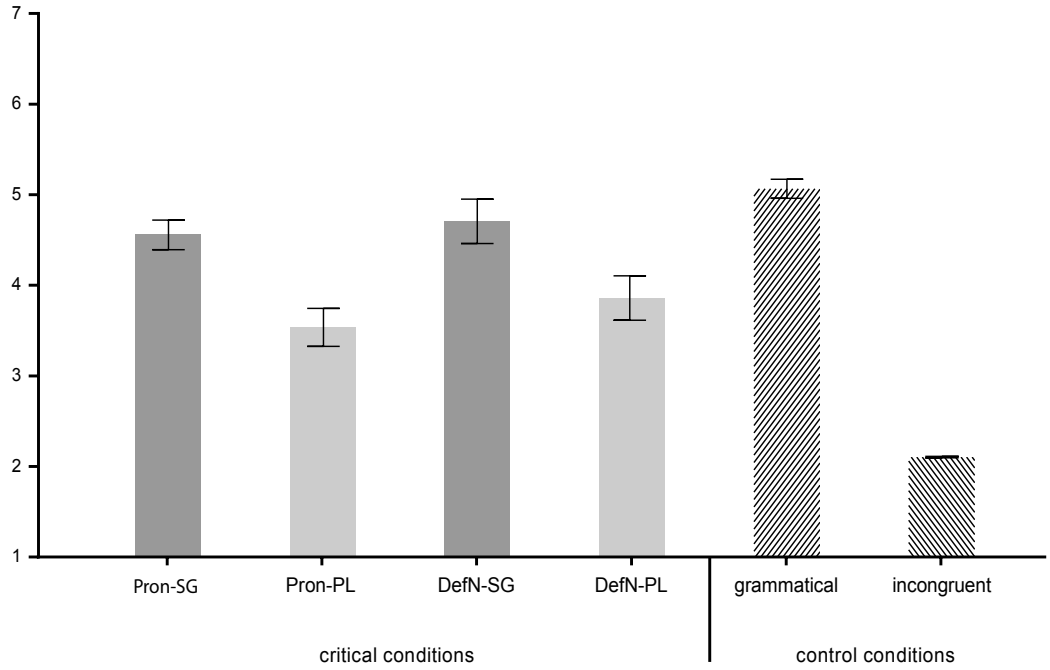
The statistical analysis was conducted in R version 1.0.136 using the lme4 package (Bates et al., 2015) to perform linear mixed-effects models (LMEM) with the score as outcome variable and with anaphoric expression and number marking as predictors. The variability of subjects and items was taken into account by including them as random intercepts. Statistical analyses of the data in Figure 3 below show that continuations with definite noun phrases received significantly higher ratings than those containing pronouns (b = 0.23, SE = 0.10, t = 2.22). In addition, continuations with singular anaphoric expressions received significantly better ratings than those with plural ones (b = -0.94, SE = 0.22, t = -4.32), regardless of the type of anaphoric expression. The interaction between anaphoric expression and number marking did not reach significance (t = 0.94). The results of the LMEM are summarized in Table 12.

Table 12. Main Study 1: Results of the LMEM.

Fixed effects	Estimate	SE	t-value
ANAPHOR	0.23	0.10	2.22*
NUMBER	-0.94	0.22	-4.32*
ANAPHOR x NUMBER	0.15	0.16	0.94

*, |t-value| > 1.96.

Figure 3. Main Study 1: Anaphoric uptake of human bare objects.



Bars on the left side show mean acceptability judgments for anaphoric uptake of inanimate bare nouns with singular pronouns (Pron-SG), plural pronouns (Pron-PL), definite noun phrases in the singular (DefN-SG) and definite noun phrases in the plural (DefN-PL). Bars on the right side indicate mean acceptability judgments for two types of control conditions: grammatical and incongruent. Error bars represent standard errors (SE).

With respect to the control conditions, the data in Table 13 reveals that the pronominal uptake of bare nouns is as acceptable as the pronominal uptake of their indefinite counterparts.

Table 13. Main Study 1: Results for control conditions.

Control conditions		**Mean score**
GRAMMATICAL	indefN/Pron-SG	4.39 (0.19)
	defN/Pron-PL	5.75 (0.11)
INCONGRUENT	indefN/Pron-PL	2.16 (0.10)
	defN/Pron-SG	2.04 (0.09)

Figures in parentheses show standard errors (SE).

However, a closer examination of the mean scores reveals that regular indefinites were rated as less acceptable than definite plural conditions. This difference can be

attributed to the use of indefinites without accusative case marking, yielding non-specific indefinites, whereas the plural conditions were used with accusative case, indicating the definiteness of the object. Table 14 displays the results of the experiment concerning the number bias of noun-verb combinations observed in the Norming Study 1a.

Table 14. Anaphoric uptake in correlation with number bias.

Number bias	**Anaphoric uptake**	
	SG	PL
SG	4.81 (0.15)	3.32 (0.19)
N	4.52 (0.17)	3.94 (0.20)

Figures in parentheses show standard errors (SE).

The mean scores indicate that the number bias of human bare nouns has an influence on the acceptability of their anaphoric uptake. However, the mean scores in Figure 3 exhibit a similar pattern to the mean scores in Table 14. Overall, there is a strong preference for the singular form, regardless of the type of anaphoric expression. The same preference is observed with regard to the neutral bias condition. As a result, the data supports Modarresi's (2014) claim that the number bias of bare nouns conditions the acceptability of pronominal anaphora. The data also supports Law & Syrett's (2017) findings, where they reported a similar pattern of context-biased preferences for the pronominal uptake of bare nouns in Mandarin.

3.4.4 Discussion

I started out using the several hypotheses regarding the anaphoric potential of bare nouns in discourse: the opacity hypothesis, the transparency hypothesis, the translucency hypothesis and the accessibility hypothesis. The acceptability judgement task revealed that bare nouns support pronominal anaphora, contradicting the opacity hypothesis. Moreover, based on the translucency hypothesis, lower acceptability ratings were predicted for the pronominal uptake of bare nouns compared to the pronominal uptake of their cased counterparts. Additionally, according to world

knowledge dependency, a preference for singular or plural pronouns was expected. Both versions of the translucency hypothesis have been confirmed. With regard to the first part, the results show lower acceptability ratings for the critical conditions in comparison to the grammatical control conditions. However, upon closer examination of the grammatical controls, the results for the non-specific regular indefinites reveal similar acceptability ratings in comparison to bare nouns. But they also show that conditions using accusative case-marked plural nouns achieved higher acceptability ratings than non-specific regular indefinites. This observation can be attributed to the fact that in Turkish, some verbs necessitate accusative case marking on human objects (Krause & von Heusinger, 2019). Therefore, the discourse transparency hypothesis can still be unequivocally rejected. Concerning the second part of the translucency hypothesis, the results reveal a prevailing preference for singular continuations over plural continuations. This result aligns with the findings of Norming Study 2a, presented in section 4.5.1. In neutral contexts, similar acceptability ratings were observed for singular and plural continuations, irrespective of the type of the anaphoric expression. Likewise, for singular contexts, a clear preference for singular continuations over plural continuations was identified, regardless of the type of the anaphoric expression. Based on the accessibility hypothesis, two predications were made. First, it was predicted that bare nouns would receive lower acceptability ratings in contrast to their indefinite counterparts. Second, it was anticipated that continuations containing definite descriptions would achieve higher acceptability ratings than those containing pronouns. As already mentioned above, the first prediction of the accessibility hypothesis, which aligns with the first prediction of the translucency hypothesis, has been confirmed. Furthermore, the second prediction of the accessibility hypothesis was also verified, albeit only through a marginal degree of significance. Nonetheless, the accessibility hypothesis is rejected here since it prohibits the pronominal uptake of bare nouns, implying that pronominal uptake should be not acceptable at all. However, as discussed, the data reveals the opposite.

To summarize, the goal of this study was to empirically investigate the anaphoric potential of bare nouns in Turkish. Accordingly, the study was implemented as an acceptability judgment task investigating the anaphoric uptake of bare nouns in correlation with their number interpretation. The results provide the first empirical

evidence supporting the anaphoric potential of bare nouns in Turkish. They confirm that bare nouns exhibit discourse translucency rather than discourse opacity or transparency. Furthermore, the observations indicate that, despite being number-neutral, bare nouns in Turkish evoke a singular interpretation even in neutral contexts where world knowledge would not necessarily suggest an atomic interpretation. All in all, the investigation shows that discourse translucency is a complex notion that is not solely determined by the acceptability of overt pronominal uptake of bare nouns. Instead, discourse translucency encompasses several interacting aspects, including the potential for covert pronominal uptake and the role of different event types. Chapter 4 will present a second investigation where the acceptability judgements, in contexts with covert pronouns and different event types, will serve to validate a modified version of the translucency hypothesis.

3.5 Conclusion

In this chapter I have examined the concepts of accessibility and discourse transparency from a theoretical and empirical perspective. From the theoretical perspective, I have illustrated that these concepts give rise to opposing hypotheses (196), which have been slightly revised here in (247).[106]

(247) a. The discourse opacity hypothesis
Bare nouns do not allow anaphoric uptake.

b. The discourse transparency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora to the same extent as their indefinite counterparts.

c. The discourse translucency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora, albeit not to the same extent as their indefinite counterparts.

d. The discourse accessibility hypothesis
Bare nouns allow anaphoric uptake only through low accessibility-marking expressions, such as definite descriptions.

[106] Note that I replaced “incorporated nouns” with “bare nouns”.

These hypotheses result in a complementary distribution, thus leading to different predictions with regard to the anaphoric uptake of bare nouns. From an empirical perspective, I have shown that bare nouns in Turkish are referential to some degree, challenging the opacity hypothesis and previous assumptions in the literature (Aydemir, 2004; among others). The acceptability judgments provided further evidence for the fact that bare nouns in Turkish are discourse translucent rather than discourse transparent.

In conclusion, this chapter has investigated the anaphoric potential of bare nouns, focusing solely on nominal parameters such as the type of anaphoric expression and the number interpretation of bare nouns. The discussion of noun incorporation in chapter 2 reveals that verbal parameters, such as event types, might also play a crucial role in determining the anaphoric potential of bare nouns. The following chapter aims to delve into the topic from the perspective of events, thereby providing insights into various aspects of discourse translucency, including the interplay of nominal and verbal parameters.

4 Affectedness and event structure

In the previous chapter, I presented my first experiment on the accessibility of Turkish bare nouns. The results confirmed the translucency hypothesis. In this chapter I present a second experiment on the anaphoric uptake of bare nouns in Turkish, including further aspects of discourse translucency, such as covert pronominal uptake and event type. Section 4.1 gives an overview of theoretical approaches to affectedness in the literature. Section 4.2 discusses affectedness and direct object realization in Turkish. In section 4.3 I focus on different verb types. Section 4.3.1 demonstrates that verbs of use, verbs of creation and verbs of destruction exhibit differences in the semantic interpretations they most readily allow for an indefinite object. Section 4.3.2 shows that these verb types do not pass the affectedness diagnostics proposed in the literature. Section 4.4 provides an intermediate discussion. Section 4.5 presents the empirical studies investigating nominal and verbal parameters for the anaphoric potential of bare nouns. Section 4.6 presents a novel DRT-based approach to the anaphoric potential of bare nouns in Turkish including affectedness as a predictor of anaphoricity.

4.1 Theoretical approaches to affectedness

The notion of affectedness has received comprehensive attention in the fields of lexical semantics and syntax. Affectedness, usually understood as the "persistent change in or impingement of an event participant" (Beavers, 2011: 335), has been a key notion in argument realization and in establishing direct objecthood (Anderson, 1971; Fillmore, 1986; Jackendoff, 1990; Dowty, 1991 among others). Moreover, it has been linked to lexical aspect, especially for determining telicity (Tenny, 1992, 1994; Krifka, 1998; Beavers, 2006; among others). Affectedness has also been recognized as a factor influencing the feasibility of certain syntactic operations, including DP-passivization and middle constructions (Anderson, 1977; Jaeggli, 1986; Tenny, 1987). Finally, affectedness is considered as a parameter of transitivity (Hopper & Thompson, 1980; Tsunoda, 1981, 1985; Næss, 2004; Malchukov, 2005; among others). However, as pointed out by von Heusinger & Kaiser (2011) and Beavers (2011), affectedness is frequently characterized intuitively, and there is no consensus on a precise definition

of affectedness. Depending on the theoretical framework, affectedness is either treated as a binary feature or as a gradient property.

For instance, according to Hopper & Thompson (1980), affectedness is one binary feature among several others contributing to high transitivity. Hopper & Thompson (1980) claim that transitivity is a gradient or scalar phenomenon that is determined by multiple parameters, as listed in Table 15.

Table 15. Parameters of transitivity (Hopper & Thompson, 1980: 252).

	High transitivity	**Low transitivity**
A. PARTICIPANTS	2 or more participants (A and O)	1 participant
B. KINESIS	action	non-action
C. ASPECT	telic	atelic
D. PUNCTUALITY	punctual	non-punctual
E. VOLITIONALITY	volitional	non-volitional
F. AFFIRMATION	affirmative	negative
G. MODE	realis	irrealis
H. AGENCY	A high in potency	A low in potency
I. AFFECTEDNESS OF O	O totally affected	O not affected
J. INDIVIDUATION OF O	O highly individuated	O non-individuated

Among the features in Table 15, there are parameters related to the participants in the event, such as the agent's volitionality and the object's affectedness, as well as individuation; there are also parameters related to the event itself, including affirmativity, reality and punctuality (see also Givón, 1985). According to Hopper & Thompson (1980: 253) "the degree to which an action is transferred into a patient is a function of how completely that participant is affected". For instance, in a sentence like *I drank up the coke*, the patient is more affected than in *I drank some of the coke*. The component of individuation refers to the referential strength of the direct object. As a result, the referent of a noun complying with the properties in the left column is more individuated than a referent complying with its counterparts in the right column in Table 16.

Table 16. Parameters of individuation (Hopper & Thompson, 1980: 253).

Individuated	**Non-individuated**
proper	common
human, animate	inanimate
concrete	abstract
singular	plural
count	mass
referential	non-referential

This implies that an action is more effectively transferred to an individuated patient compared to one that is not individuated. For instance, a definite noun is regarded as more affected than an indefinite one. In the sentence *I drank the coke*, there is a probable implication that the coke is finished, whereas in *I drank some coke* this implication is achieved with difficulty (e.g. if so little coke was left that drinking any of it was tantamount to finishing it). Similarly, animate nouns are argued to be more individuated, and thus more affected than inanimate nouns. Hopper & Thompson (1980) claim that transitivity, which is traditionally viewed as a matter of carrying over an action from one participant to another, can be decomposed into its components, each pertaining to a different aspect of this transfer in a different part of the clause. Accordingly, based on these components, a clause can be categorized as more or less transitive. The greater the number of features aligning with the "high transitivity" column in Table 14, the more transitive the clause is deemed to be, leading to an expectation of increased marking for transitivity. However, Hopper & Thompson (1980) recognize that although a prototypical transitive event usually involves two participants, an intransitive event can have more high transitivity features than an event with two participants, as illustrated by the examples in (248) (taken from Hopper & Thompson, 1980: 254).

(248) a. Susan left.
Kinesis: action
Aspect: telic
Punctuality: punctual
Volitionality: volitional

b. Jerry likes beer.
Participants: two

Nevertheless, Hopper & Thompson (1980) argue that this implication finds expression in object incorporation constructions, which are usually very low in transitivity even though they involve two participants. Consider the examples (249) from Tongan and from Hungarian (250) (taken from Hopper & Thompson, 1980: 257, 258).

(249) a. Na'e kai 'e Sione 'a e ika.
PST eat ERG John ABS DEF fish
'John ate the fish.'

b. Na'e kai ika 'a Sione
PST eat fish ABS John
'John ate fish.'

(250) a. Péter olvas egy újságot.
Peter reads a newspaper
'Peter is reading a newspaper.'

b. Péter újságot olvas.
Peter paper reads
'Peter is newspaper-reading.'

c. Péter olvassa az újságot.
Peter reads.OBJ the paper
'Peter is reading the newspaper.'

As evident from case marking patterns, object incorporation in Tongan results in reduced transitivity. In (249a) the agent is marked with ergative case, whereas in (249b) the agent bears absolutive case, the same case it would have with an ordinary intransitive verb. In Hungarian, however, object incorporation leads to a change in word order. While the indefinite referential object appears in the postverbal position in (250a), the incorporated non-referential object in (250b) shows up in the immediately preverbal position. When the object is highly individuated (referential and definite), as in (250c), it is indexed on the verb by objective conjugation. Hopper & Thompson (1980) conclude that morpho-syntactic marking is sensitive to transitivity as a whole, rather than to the actual presence or absence of the second

participant. Therefore, they argue that the parameters of transitivity "co-vary" extensively and systematically. On the basis of this, they propose the Transitivity Hypothesis, which essentially states, that "whenever an obligatory pairing of two Transitivity features occurs in the morphosyntax or semantics of a clause, the paired features are always on the same side of the high-low transitivity scale" (Hopper & Thompson, 1980: 254; emphasis omitted).

In conclusion, Hopper & Thompson (1980) regard affectedness as a feature that has either a plus or minus value, although they attempt to correlate affectedness with individuation, which is a rather more gradable property that comprises various factors (see Table 15) leading to different degrees of individuation.

However, compared to approaches in the syntactically oriented literature, theories in the functional-typological literature regard affectedness as a gradable notion, similar to individuation. Næss (2004) takes up Hopper & Thompson's claim that high affectedness corresponds to high individuation and suggests another dimension along which the degree of affectedness can be assessed, namely prominence. She assumes that animate objects in events are more prominently affected than inanimate ones. For instance, she argues that the animate patient *John* in *Peter killed John* is more affected than the inanimate patient *the pot* in *Peter broke the pot*, because "effects on human or animate entities are perceived as more dramatic, more significant, than effects on inanimates" (Næss, 2004: 1202).[107]

Tsunoda (1985) refines Hopper & Thompson's concept of transitivity, specifically concerning the correlation and co-variance of parameters, the relevance and rank of parameters, and concerning the affectedness scale. Regarding the first issue, Tsunoda (1985) claims that the Transitivity Hypothesis is too strong, since, whereas certain parameters always co-vary (i.e., volitionality and agency), other parameters never co-vary (i.e., volitionality plus agency and affectedness). With respect to the second argument, Tsunoda (1985) argues that the parameters for transitivity need to be ranked in terms of their relevance to morpho-syntactic manifestations (i.e., affectedness is crucial for manifesting a transitive case frame, but volitionality and agency are

[107] See also Fleischhauer (2018), who discusses animacy in relation to affectedness in Germanic languages.

irrelevant). Finally, he states that affectedness needs to be refined in order to constitute various semantic differentiations that are reflected in the morpho-syntax. Therefore, he proposes the hierarchy in (251) (adapted from Tsunoda, 1985: 388).

(251) Hierarchy of two-place predicates

DIRECT EFFECT ON PATIENT > PERCEPTION > PURSUIT > KNOWLEDGE > FEELING > RELATIONSHIP > ABILITY

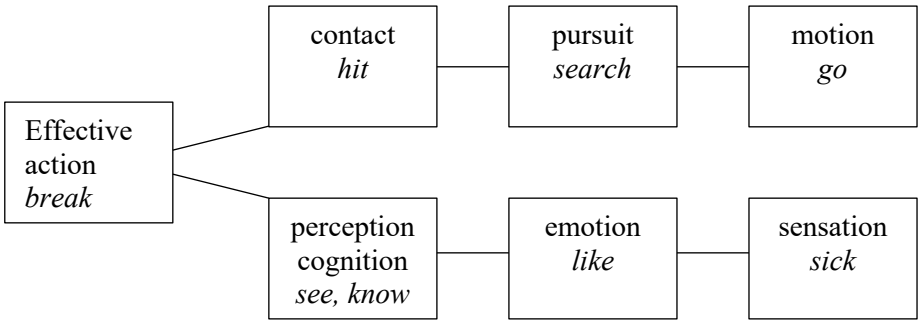
According to this hierarchy, the transitivity of verbs decreases from left to right. The verbs higher in transitivity correspond to Hopper & Thompson's (1980) prototype of semantic transitivity. Table 17 demonstrates the transitivity scale of two-place predicates based on the affectedness of the patient and accounts for the morph-syntactic correlates thereof (see Tsunoda, 1985 for details). In terms of affectedness, the patient is most affected at the left end of the hierarchy, but tends to be less and less affected towards the right. Tsunoda (1985: 387) assumes that prototypical transitive verbs are defined as "those verbs, which describe an action that not only impinges on the patient but necessarily creates a change in it", e.g., *kill*, *destroy*. Unlike *kill* and *destroy*, verbs such as *hit* and *kick* do not always imply a change in the patient. To conclude, Tsunoda (1985) assumes that different types of change correspond to different degrees of affectedness.

Table 17. Affectedness and verbs types (Tsunoda, 1985: 388).

	Categories	**Verbs**	
+affected	Direct effect on patient	+resultative *kill, break, bend*	–resultative *hit, shoot, eat*
	Perception	+attained *see, hear, find*	–attained *listen, look*
	Pursuit	*search, wait*	
	Knowledge	*know, understand*	
	Feeling	*like, fear, want*	
	Relationship	*possess, similar, consist*	
–affected	Ability	*capable, proficient, good*	

Malchukov (2005) decomposes Tsunoda's hierarchy into a hierarchy with two different dimensions, as shown in (252) (adapted from Malchukov, 2005: 83).

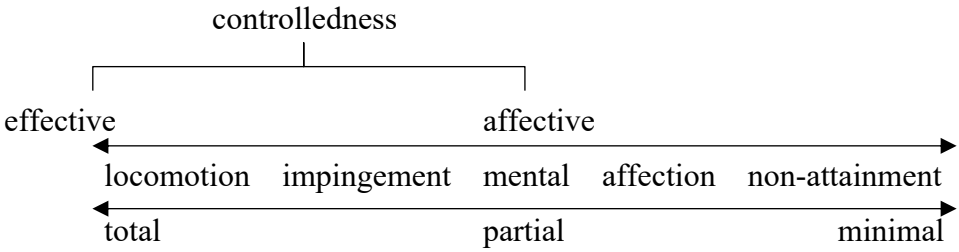
(252) Two-dimensional verb type hierarchy



According to Malchukov (2005), this hierarchy combines properties related to the patient and the agent. It comprises a sub-hierarchy indicating decreased patienthood (affectedness) for the object argument (leading from *break* to *go*), and another sub-hierarchy that involves decreased agentivity on the part of the agent (leading from *break* to *sick*). The hierarchy in (252) represents a semantic map, with the adjacent verb types indicating semantic affinities. In other words, if two verb types share a certain case frame, this pattern should also hold for intermediate verb types. For instance, if emotion verbs share the transitive case frame with effective action verbs, the intermediate types, such as perception and cognition, should likewise accommodate the transitive pattern.

Lehmann (1991) proposes a continuum of affectedness in the form of a two-dimensional scale, highlighting the independence of qualitative and quantitative parameters, as shown in (253) (adapted from Lehmann, 1991: 221).

(253) Two-dimensional affectedness space



The dimension of quality refers to the domain of affectedness (such as locomotion, impingement, mental, affection, non-attainment), while the dimension of quantity is

assigned to the degree of affectedness (total, partial, minimal). According to Lehmann (1991: 218), affected objects may be affected in different ways and to different degrees, whereas effected objects cannot be considered as affected by the situation in any manner or degree. This is because their existence hinges on the event described by the verb; thus, they are either created or not. Consider the examples in (254) (taken from Lehmann, 1991: 217).

(254) a. Paul corrected a letter.
b. Paul wrote a letter.

In (254a), the direct object *the letter* is categorized as an affected object, experiencing change in a specific domain, such as physical form. Conversely, the direct object in (254b) is an effected object, meaning its existence is brought about by the event. This type is often referred to as an "object of result" (Jespersen, 1933).
Following a similar approach to Lehmann (1991), Beavers (2011, 2013) proposes a two-dimensional framework for encoding affectedness. The first dimension represents the type of change, while the second captures the degree of change. For these various types of change, he distinguishes six categories in (255) (adapted from Beavers, 2011: 358).

(255) a. *x* changes in some observable property (*clean, break, paint*)
b. *x* transforms into something else (*turn, carve, change*)
c. *x* moves to and stays at some location (*move, push, angle*)
d. *x* is physically impinged (*hit, kick, wipe*)
e. *x* goes out of existence (*delete, eat, consume*)
f. *x* comes into existence (*build, create, design*)

Drawing upon the works of Tenny (1992), Rappaort Hovav & Levin (2005) and others, Beavers (2011) suggests a reduction of the six categories to four. The first category encompasses "change of state" predicates that involve changes in a property of a participant, as seen in (255a) and (255b). The second category involves "directed motion" predicates, which express change of location, as illustrated in (255c). The third category consists of "surface contact/impact" predicates, as in (255d), entailing contact without significant change. The fourth category encompasses "creation/consumption" predicates, exemplified in (255e) and (255f). Notably,

creation objects are categorized as "effected" rather than "affected" (Fillmore, 1968; Quirk & Greenbaum, 1973; Lakoff, 1976; Martinez-Vasquez, 1998; among others). Beavers (2011) posits a relationship between the verb classes in (255), suggesting that they share prototypical properties of direct objects. These shared properties serve as conditioning factors in specific syntactic constructions, such as middle and DP-passive formation.

With respect to the degree of change, Beavers (2011) proposes four degrees of affectedness, as shown in (256) (adapted from Beavers, 2011: 358). These degrees correspond to the specificity of the predicate regarding the endpoint of the theme's transition along a "scale" or "path".

(256) a. x undergoes quantized change iff $\phi \rightarrow \exists e \exists s[\text{result}'(x,s,g_{\phi},e)]$
(e.g. accomplishments/achievements: *break, shatter, destroy*)

b. x undergoes non-quantized change iff $\phi \rightarrow \exists e \exists s \exists g[\text{result}'(x,s,g,e)]$
(e.g. degree achievements/cutting: *widen, cool, cut*)

c. x has potential for change iff $\phi \rightarrow \exists e \exists s \exists \theta[\theta(x,s,e)]$
(surface contact/impact: *rub, punch, hit*)

d. x is unspecified for change iff $\phi \rightarrow \exists e \exists \theta'[\theta'(x,e)]$
(e.g. other activities/states: *see, laugh at, smell*)

Beavers (2011: 358) argues that the degrees of change are related in terms of "monotonically weakening truth conditions", defined by existential quantification. As Beavers (2011: 358) writes: "Non-quantized change is an existential generalization over the goal of a quantized change, potential for change is an existential generalization over the θ-relation between the theme, scale and event, and being unspecified for a change is an existential generalization over the thematic role of the theme", yielding the implicational hierarchy in (257) (adapted from Beavers, 2013: 690).

(257) Implicational Affectedness Hierarchy
QUANTIZED > NON-QUANTIZED > POTENTIAL > UNSPECIFIED

According to this hierarchy, if *x* bears some degree of affectedness *n* on the scale in (257), it bears all degrees to the right of *n*. Thus, a definite target state entails some target state, which entails that there is a scale argument, which in turn entails being a participant in this event. Beavers (2011, 2013) indicates that the hierarchy in (257) explains how different affectedness diagnostics proposed in the literature are related, as illustrated in Table 18 below.

Table 18. Diagnostics for affectedness (Beavers, 2011: 345).

Diagnostics	**Degree of affectedness**			
	Quantized	Non-quantized	Potential	Unspecified
ϕ is telic	+	–	–	–
Change entailed of *x*	+	+	–	–
x takes a result NP	+	+	+/–	–
What happened to *X* is *Y*	+	+	+	–
ϕ is dynamic	+	+	+	+/–
Result XP variation	low	low/high	high	N/A

The application of the diagnostics aligns with the implicational hierarchy for the degrees of affectedness. Essentially, if an object is affected to degree *n* and satisfies a particular diagnostic, an object satisfying any higher degree will also meet the criteria. Beavers (2011) proposes that the degree of affectedness, or the degree of change encoded in a predicate, can be determined through the diagnostics presented in Table 18. The hierarchy in (257) is based on scalar structure, irrespective of the scale type, while the verb classes in (256) are grounded in types of changes and scales without a specified ordering among them. For change of state, the scale is a property scale, for directed motion, it is a path, and for creation/consumption, it is the physical extent of the theme. Illustrative examples can be found in (258) (taken from Beavers, 2013: 686).

(258) a. John warmed the pie to 100°.
∃e∃s[warming′(***j***,***p***,*s*,*e*) ∧ result′(*s*,***100°***,*e*)] *s* is a warmth scale

b. John walked to the café.
∃e∃s[walking′(***j***,*s*,*e*) ∧ result′(*s*,***cafe***,*e*)] *s* is a path scale

c. John ate the pie.
∃e∃s[eating′(***j***,***p***,*s*,*e*) ∧ result′(*s*,***0***,*e*)] *s* is an extent scale

As shown in (258), the first conjunct indicates the type of the event and its participants and the second its final state on the scale *s*. Thus, a scale is understood as a directed path leading from a source state to a final state of a participant. Result′ is defined as in (259) to indicate the goal *g* on the scale *s* in the event *e* and the existence of a specific source *b* (taken from Beavers, 2013: 686).

(259) ∀s∀g∀e [result′(*s*,*g*,*e*)] ↔ [SOURCE(*s*,***b***,*e*) ∧ GOAL(*s*,***g***,*e*)]]

Beavers (2011, 2013) adopts Krifka's (1998) concept of the "Strictly Incremental Relation" (taken from Beavers, 2011: 352) to account for the aspectual properties of creation and consumption predicates, where the patient of these predicates is an incremental theme.

(260) Strictly Incremental Relation
Every unique part of *e* corresponds to a unique part of *x* and vice versa.

According to (260), for predicates attributing this thematic role to their theme arguments, the event advances in a manner that is "isomorphic" through the theme. To illustrate, in the sentence *Ahmet drank the wine*, each part of the drinking event corresponds to a unique part of the wine. More specifically, any subevent of that event is a subevent of drinking a smaller, unique quantity of wine, making it telic. In contrast, in the sentence *Ahmet drank wine*, a subevent of drinking wine is equivalent to the entire event of drinking wine, making the predicate atelic.
For motion and change-of-state predicates, Beavers (2011) adopts Krifka's (1998) "Strict Movement Relation", given in (261) (taken from Beavers, 2011: 353).

(261) Strict Movement Relation
Every unique part of *e* corresponds to a unique part of *s* and vice versa; temporal adjacency in e corresponds to spatial/scalar adjacency in *s*.

Following this movement relation, the event unfolds as the theme moves unidirectionally along the scale, and each segment of the event corresponds to a unique segment of the scale. For instance, in the sentence *Ahmet walked from the university*

to his home, which depicts Ahmet traversing a path from the university to this home, any subevent within this event is an event of Ahmet crossing a part of the path from the university to his home, rendering it telic. Conversely, in the sentence, *Ahmet walked*, where the path is underdetermined, any subevent of Ahmet walking is an event of Ahmet walking, and therefore the predicate is atelic. The distinction between the two relations concerns the explicit boundedness of the path. While both relations exhibit isomorphism in the number of subparts, the Strict Movement Relation further maintains adjacency. This means that temporally adjacent subparts of the event correspond to spatially adjacent crossing of the path.

Beavers (2011) suggests one more relation to account for examples like *The balls rolled down to the bottom of the hill*, where two incremental themes can have individual motion subevents, one for each ball moving along the whole scale. He calls this Figure/Path Relation, as illustrated in (262) (taken from Beaver, 2011: 354).

(262) Figure/Path Relation

Every unique part of *x* corresponds to a unique part of *e*. Each subevent stands in a Strict Movement Relation to *s*, and the sum of all subevents constitutes *e*.

According to Beavers (2011), this relation is necessary, since the Strictly Incremental Relation only holds for particular parts of the path, and the Strict Movement Relation only for particular parts of the theme. However, this relation explains how two parts of the theme move successively along each path, providing multiple perspectives on the event. In sum, Beavers' scalar analysis consolidates all types of change into a single framework and identifies two entities: a theme and a scale of change. These entities maintain a mutually constraining relationship to each other and to the event.

To conclude this section, it can be stated that affectedness typically exhibits different manifestations depending on the type of literature. In typological-functional literature, affectedness is considered a parameter contributing to the transitivity of a sentence. In semantic-oriented literature, affectedness is viewed as a measure of change, wherein change is defined as a condition on the patient that did not exist before. In section 4.2, I will discuss affectedness in relation to object realization in Turkish, before turning to different verb types and the application of affectedness diagnostics to them in section 4.3.

4.2 Affectedness and direct object realization in Turkish

The notion of affectedness has not received much attention in the literature on Turkish verb types. The investigations of affectedness remain rather descriptive and are typically associated with the case marking patterns of Turkish objects. Some linguists have claimed that affectedness in Turkish can be captured in terms of differential case marking of the direct object (Dede, 1981; Nilsson, 1985; Aksan, 1995; Schroeder, 1999; Kılıçaslan, 2006). Consider the examples in (263) (adapted from Dede, 1981: 40; emphasis in bold added).

(263) a. Ahmet **süt-ü** içt-i.
Ahmet milk-ACC drink-PST
'Ahmet drank the milk.'

b. Ahmet **süt-ten** iç-ti.
Ahmet milk-ABL drink-PST
'Ahmet drank of the milk.'

Dede (1981) claims that the difference between (263a) and (263b) is that the direct object in (263a) is completely affected whereas the object in (263b) is only partially affected. Furthermore, she shows that case marking on the object determines the interpretation of the verb; see the examples in (264) (adapted from Dede, 1981: 41; emphasis in bold added).

(264) a. Adam **çocuğ-u** vur-du.
man child-ACC hit-PST
'The man shot the child.'

b. Adam **çocuğ-a** vur-du.
man child-DAT hit-PST
'The man hit the child.'

In example (264a), the verb *vurmak* 'hit' changes its meaning due to the accusative case marking on the object, whereas in (264b) the meaning remains unchanged due to the dative marking on the object. However, case alternation of the object does not always result in a meaning shift of the verb. Consider the examples in (265) – (267) (adapted from Nilsson, 1985: 42, 43; emphasis in bold added).

(265) a. Bir gün-de **Istanbul'u** gez-di-k.
one day-LOC Instabul-ACC travel-PST-3PL
'We traveled through (the whole of) Istanbul in one day.'

b. Bütün gün **Istanbul'da** gez-di-k.
whole day Istanbul-LOC travel-PST-3PL
'We traveled through Istanbul the whole day.'

(266) a. **Dağ-lar-ı** geç-ti-k.
mountain-PL-ACC pass-PST-3PL
'We passed the mountains.'

b. **Dağ-lar-dan** geç-ti-k.
mountain-PL-ABL pass-PST-3PL
'We passed through mountains.'

(267) a. **Kağıd-ı** üfle-di-m.
paper-ACC blow-PST-1SG
'I blew (away) the paper.'

b. **Kağıd-a** üfle-di-m.
paper-DAT blow-PST-1SG
'I blew at/in the paper.'

According to Nilsson (1985: 43), "An Accusative marked phrase focuses on the denoted thing as one independent whole, which enforces the interpretation of the action as having consequences for all of that thing. The choice of another marker instead of the Accusative weakens the impression of change, reaction or result involving the whole thing". Thus, accusative marking signals that the referent of the object is "totally affected" or "totally involved" in the event described. However, Nilsson (1985) argues that accusative marking is also linked to definiteness. She provides the following examples in (268) (taken from Nilsson, 1985: 45)

(268) a. **Peynir-i** ye-di-k.
cheese-ACC eat-PST-3PL
'We ate (up) the cheese.'

b. **Peynir-den** ye-di-k.
cheese-ABL eat-PST-3PL
'We ate (some) of the cheese.'

c. **Peynir** ye-di-k.
cheese eat-PST-3PL
'We ate cheese.'

According to Nilsson (1985), the distinction between accusative and ablative marking in (268a) and (286b) corresponds to "total" and "non-total" affectedness, respectively. In contrast to non-marking (268c) they also signal referentiality and definiteness.
Kılıçaslan (2006) reviews Nilsson's examples and agrees that non-accusative case marking indicates a lesser "degree of involvement" than accusative marking. However, he argues that accusative case marking itself indicates a lesser degree of involvement compared to lack of case marking. Consequently, Kılıçaslan (2006) suggests that incorporation structures result in the highest degree of involvement. He provides the hierarchy in (269) (adapted from Kılıçaslan, 2006: 139).

(269) Hierarchy of involvement in characterizing described situations

$$\begin{bmatrix}\text{-CASE}\\ \text{+INC}\end{bmatrix} > \begin{bmatrix}\text{-CASE}\\ \text{-INC}\end{bmatrix} > \begin{bmatrix}\text{+CASE}\\ \text{+ACC}\end{bmatrix} > \begin{bmatrix}\text{+CASE}\\ \text{-ACC}\end{bmatrix}$$

Kılıçaslan (2006) shifts the point of view from the semantics of NPs to that of sentences, and provides a situation-theoretic approach to case marking alternations in Turkish in terms of their effects on the semantic structure of the sentences.
In contrast, Aksan (1995) claims that object incorporation is a process by which the affectedness and referentiality of the objects is reduced. In particular, Aksan (1995: 205) argues that, although incorporated objects are not individuated, they may be argued to be affected. Thus, according to Aksan (1995), the affectedness of the objects decreases in the examples in (268) from (268a) to (268c).
In line with Aksan (1995) and Nilsson (1985), Schroeder (1999) argues that accusative marking indicates the total affectedness of the object. Consider the examples in (270) (adapted from Schroeder, 1999: 88; emphasis in bold added).

(270) a. Otur-du-m, **gazete** oku-du-m.
sit-PST-1SG newspaper read-PST-1SG
'I sat down and did some newspaper-reading.'

b. Otur-du-m, **bir gazete** oku-du-m.
sit-PST-1SG a newspaper read-PST-1SG
'I sat down and read a newspaper.'

c. Otur-du-m, **gazete-yi** oku-du-m.
sit-PST-1SG newspaper-ACC read-PST-1SG
'I sat down and read the newspaper.'

d. Otur-du-m, **gazete-de** oku-du-m.
sit-PST-1SG newspaper-LOC read-PST-1SG
'I sat down and read around in the newspaper.'

Schroeder (1999) argues that the object *gazete* 'newspaper' in (270a) serves as a modifier of the action; thus, the speaker states that he or she is doing a special kind of reading, namely newspaper-reading. In (270b) the newspaper is not part of the action, but is affected by it. According to Schroeder (1999), the article-marked direct object is affected by the action to a much lesser degree than the accusative-marked direct object in (270c). Besides marking the identifiability of the referent, the accusative also marks its high degree of affectedness. In contrast, the locative marked object in (270d) serves as a marker for a lesser degree of affectedness.[108]

In conclusion, the studies reviewed present contradictory perspectives on the correlation between affectedness and case marking on objects in Turkish. While most approaches suggest a correlation between accusative case marking and a high degree of affectedness, others claims that caseless objects involved in incorporation constructions align with a high degree of affectedness (Kılıçaslan, 2006). Nonetheless, it is crucial to note that the examples provided pertain to comparisons within a specific verb class. From a semantic point of view, different degrees of affectedness have been attested for different verb types, as described in the previous section. In the forthcoming section, I will examine different verb types and demonstrate that these

[108] De Hoop (2015) rejects an analysis in terms of affectedness. In particular she argues that patterns of differential object marking reflect instead a shift in "prominence". According to her, prominence is determined by various factors, including definiteness, referentiality, animacy, person, topichood and word order. Following de Swart (2007), she argues that an argument can be prominent due to its inherent properties or because of its status in the discourse.

verb types do not align with the proposed degrees of affectedness suggested in the literature.

4.3 Usage vs. creation vs. destruction

This section serves two purposes. Firstly, it aims to delve into the semantic interpretation of different verb types, such as usage, creation and destruction verbs, as these verbs show different interpretations concerning their indefinite objects. Secondly, this section seeks to provide a thorough analysis of the degrees of affectedness associated with these verb types.

4.3.1 Interpretation of indefinite objects

Diesing (1992) examines three classes of verbs: verbs of use (i.e., *read*, *play*), verbs of creation (i.e., *write*, *paint*) and verbs of destruction (i.e., *break*, *burn*), and shows that they differ in the semantic interpretations concerning their indefinite objects.
With respect to verbs of use, the example in (271) (adapted from Diesing, 1992: 109) shows that they permit both quantificational or presuppositional readings and existential closure readings for an indefinite object.

(271) a. I usually read a book about Robertson Davis.

b. *Quantificational reading*: Whenever there is a book about Robertson Davis, I read it.

c. *Existential reading*: Usually (in the morning) I read books about Robertson Davis.

Thus, the sentence in (271) is ambiguous. According to Diesing (1992) the availability of the quantificational reading can be further verified through the use of other tests, such as antecedent-contained deletion (ACD) and *any*-NP insertion. For example, in generic contexts with the adverb *usually*, ACD is possible with verbs of use, as shown in (272) (taken from Diesing, 1992: 110).

(272) a. I usually read books that you do.

b. I usually read any book by Robertson Davis.

However, verbs of creation only permit an existential closure reading. Consider the example in (273) (taken from Diesing, 1992: 111).

(273) I usually write a book about slugs.

The sentence in (273) does not permit a quantificational reading such as *Whenever there is a book about slugs, I write it*. This is due to the fact that verbs of use carry an implication of a preexisting object, i.e., *books*, whereas verbs of creation are incompatible with the notion of pre-existence, since these verbs denote the bringing of their objects into existence. *Any*-NPs are therefore also strange in these contexts, as shown in (274) (taken from Diesing, 1992: 111).

(274) * I usually write any book about slugs.

The absence of the quantificational reading is also evidenced by the inability of verbs of creation to appear in ACD contexts. Consider the example in (275) (taken from Diesing, 1992: 111).

(275) * I usually write answers that you do.

Diesing (1992) shows that German scrambling facts show a similar pattern with regard to the presuppositional and existential interpretation of verbs of use and verbs of creation. In the case of German verbs of use, scrambling is permitted yielding the quantificational reading for the indefinite object, as shown in (276) (taken from Diesing, 1992: 108).

(276) a. dass Otto Bücher über Wombats immer liest
that Otto books about wombats always reads
'that Otto always reads books about wombats'

b. [$_{CP}$ dass [$_{IP}$ Otto Bücher über Wombats immer [$_{VP}$ liest]]]

c. Always$_x$ [*x* is a book] Otto reads *x*

The interpretation of the quantificational reading is shown in (267c) The indefinite object is introduced in the restrictive clause, and is bound by the adverb of quantification *immer* 'always'. However, in the case of the VP-internal or unscrambled orders in (277), the most common interpretation of the indefinite object is the

existential closure reading, as shown in (277c) (taken from Diesing, 1992: 107). The object NP appears as a variable introduced in the nuclear scope, which is bound by existential closure.

(277) a. dass Otto immer Bücher über Wombats liest
that Otto always books about wombats reads
'that Otto always reads books about wombats'

b. [$_{CP}$ dass [$_{IP}$ Otto immer [$_{VP}$ Bücher über Wombats liest]]]

c. Always$_t$ [t is a time] $\exists_x$ x is a book ∧ Otto reads x at t

Concerning verbs of creation, Diesing (1992) shows that they do not allow scrambling of an indefinite object. Consider the examples in (278) (taken from Diesing, 1992: 112).

(278) a. dass Otto immer Bücher über Wombats schreibt
that Otto always books about Wombats writes
'that Otto always writes books about wombats (e.g. in the summer when he has finished all his term papers)'

b. Always$_t$ [t is a time] $\exists_x$ x is a book ∧ Otto writes x at t

c. * dass Otto Bücher über Wombats immer schreibt

In contrast to the unscrambled order in (278a), the scrambled order in (278c) is ungrammatical.

With regard to verbs of destruction, Diesing (1992) claims that they strongly favor a quantificational reading for indefinite objects, as illustrated in (279b). The existential closure reading becomes apparent only in habitual contexts, specifically those that permit an iterated action, and not in neutral episodic contexts, as shown in (279c).

(279) a. I usually destroy books about lions.

b. *Quantificational reading*: Whenever there is a book about lions, I destroy it.

c. *Existential reading*: ?Usually (in the morning) I destroy books about lions.

In conclusion, verbs of use, creation and destruction exhibit distinct patterns in the interpretations they allow for an indefinite object: verbs of use permit both the quantificational and the existential reading, whereas verbs of creation only allow an existential reading, and verbs of destruction prefer a quantificational reading.

Shifting the focus to indefinite objects in Turkish, Kelepir (2001) observes that in Turkish, creation verbs exhibit a preference for objects without accusative morphology, as illustrated in the examples in (280) (adapted from Kelepir, 2001: 109; see also Kılıçaslan, 2006 for similar examples).

(280) a. Ahmet bir kitab(#-ı) yazı-dı.
Ahmet a book-ACC write-PST
'Ahmet wrote a book.'

b. Nurten bir kazağ(#-ı) örd-dü.
Nurten a sweater-ACC knit-PST
'Nurten knit a sweater.'

The object *book* in (280a) and the object *sweater* in (280b) come into existence as a result of the actions denoted by the verbs. Therefore, in line with Diesing (1992), the object NPs are not allowed to take accusative case morphology, as the presupposition of existence appears to be a necessary condition for the use of the accusative case in Turkish.[109] Regarding verbs of use and verbs of destruction, similar cases are found to those in English. Consider the examples in (281).

(281) a. Ahmet bir kitab(-ı) oku-du.
Ahmet a book-ACC read-PST
'Ahmet read a book.'

b. Ahmet bir kitab#(-ı) yak-tı.
Ahmet a book-ACC burn-PST
'Ahmet burned a book.'

In Turkish, verbs of use and verbs of creation facilitate an existential reading with indefinite objects, whereas the presuppositional reading is only possible for complements of verbs of use and verbs of destruction, necessitating accusative case

[109] However, Kelepir (2001) admits that if the complement is the topic or functions as the given element in the clause, accusative morphology should be acceptable.

marking. In the case of verbs of destruction, the existential reading requires a habitual context that allows an interpretation involving iterated actions.

4.3.2 Affectedness diagnostics

Turning our attention to the evaluation of affectedness diagnostics for different verb classes, the examined verb types examined in the previous section exhibit variations in accordance with Beavers' (2011) affectedness diagnostics. Consider the main diagnostics repeated here in Table 19.

Table 19. Some diagnostics for affectedness (Beavers, 2013: 689).

Diagnostics	**Degree of affectedness**			
	Quantized	Non-quantized	Potential	Unspecified
Telic	+	–	–	–
Change entailed	+	+	–	–
What happened to *X* is *Y*	+	+	+	–

When examining accusative case-marked definite objects and bare objects within the context of verbs of use, creation and destruction, a distinct pattern emerges. In cases where these predicates are combined with definite objects, they tend to strongly favor a telic interpretation. Conversely, the use of bare objects tends to evoke an atelic reading. Consider the examples in (282) – (283).

(282) a. *Ahmet iki saatte / #iki saat boyunca* ***kitabı okudu****.*
'Ahmet read the book in two hours/#for two hours.'

b. *Ahmet iki saatte / #iki saat boyunca* ***kitabı yazdı****.*
'Ahmet wrote the book in two hours/#for two hours.'

c. *Ahmet on saniyede / #on saniye boyunca* ***kitabı yırttı.***
'Ahmet tore the book apart in ten seconds/#for ten seconds.'

(283) a. *Ahmet #iki saatte / iki saat boyunca* ***kitap okudu.***
'Ahmet did book-reading #in two hours/for two hours.'

b. *Ahmet #iki saatte / iki saat boyunca* ***kitap yazdı****.*
'Ahmet did book-writing #in two hours/for two hours.'

c. *Ahmet #on saniyede / ?on saniye boyunca* ***kitap yırttı****.*
'Ahmet did book-tearing #in ten seconds/for ten seconds.'[110]

With regard to the entailment test *Is ϕ but not ψ a contradiction?*, no differences can be found between case-marked objects and bare objects, which is illustrated in the examples in (284) and (285), respectively.

(284) a. *Ahmet* ***kitabı okudu*** *ama kitabın durumu değişmedi.*
'Ahmet read the book, but nothing is different about the book.'

b. *Ahmet* ***kitabı yazdı*** *#ama kitabın durumu değişmedi.*
'Ahmet wrote the book, #but nothing is different about the book.'

c. *Ahmet* ***kitabı yırttı*** *#ama kitabın durumu değişmedi.*
'Ahmet tore the book apart, #but nothing is different about the book.'

(285) a. *Ahmet* ***kitap okudu*** *ama kitabın durumu değişmedi.*
'Ahmet did book-reading, but nothing is different about the book.'

b. *Ahmet* ***kitap yazdı*** *#ama kitabın durumu değişmedi.*
'Ahmet did book-writing, #but nothing is different about the book.'

c. *Ahmet* ***kitap yırttı*** *#ama kitabın durumu değişmedi.*
'Ahmet did book-tearing, #but nothing is different about the book.'

The results of the entailment reveal that only verbs of use fail to meet the criteria, whereas verbs of creation and destruction successfully pass the test.
Finally, the *What happened to X is Y* test demonstrates a distinction between definite and bare objects in the context of verbs of use, creation and destruction. A comparison of the examples in (286) and (287) illustrates this difference.

(286) *Kitaba ne oldu?* 'What happened to the book?

a. *#Ahmet* ***kitabı okudu.***
Ahmet read the book.'

b. *#Ahmet* ***kitabı yazdı****.*
'Ahmet wrote the book.'

[110] The combination of bare nouns with verbs of destruction seems peculiar and the results of Norming Study 2c support this observation (see section 4.5.3).

c. *Ahmet* ***kitabı yırttı***.
'Ahmet tore the book apart.'

(287) *Kitaba ne oldu?* 'What happened to the book?

a. *?Ahmet* ***kitap okudu***.
'Ahmet did book-reading.'

b. *?Ahmet* ***kitap yazdı***.
'Ahmet did book-writing.'

c. *?Ahmet* ***kitap yırttı***.
'Ahmet did book-tearing.'

The examples in (286) demonstrate that only definite objects with verbs of destruction fulfill this test, while verbs of use and verbs of creation do not. Conversely, no bare objects in any contexts satisfy this test. Constructions with bare objects are apt as responses to a question inquiring about an action rather than seeking additional information about the object, as illustrated in (288).

(288) *Ahmet ne yaptı?* ***Kitap okudu.***
'What did Ahmet do? He did book-reading.'

Therefore, compared to Beavers' (2011) four degrees of change (see Table 19), the verb classes under discussion do not adhere to his hierarchy. A comparison of the application of the tests to definite and bare objects in Table 20 and Table 21 with that in Table 19 reveals the divergence.

Table 20. Affectedness of case-marked objects in Turkish.

Diagnostics	**Verb type**		
	verb of use	verb of creation	verb of destruction
Telic	+	+	+
Change entailed	–	+	+
What happened to *X* is *Y*	–	–	+

Table 21. Affectedness of bare objects in Turkish.

Diagnostics	**Verb type**		
	verb of use	verb of creation	verb of destruction
Telic	–	–	–
Change entailed	–	+	+
What happened to *X* is *Y*	?	?	?

Table 20 shows that definite objects in contexts with verbs of use and verbs of creation do not conform to any of Beavers' (2011) degree of affectedness classes. Only verbs of destruction align with Beavers' degree of "quantized change". Table 21 illustrates that bare objects do not fall into any of the suggested degrees. Moreover, the type of scales proposed by Beavers (2013) is not applicable to the verb types discussed. With regard to creation verbs, Beavers (2011: 341) noticed that prior existence of the theme is crucial for affectedness, as he states "perhaps something cannot be affected if it did not exist prior to the event". This fact aligns with Diesing's (1992) observation that creation verbs do not permit a presuppositional reading.

4.4 Intermediate discussion

Affectedness has been characterized from various perspectives in different frameworks, either as a binary feature or as a gradient property. For instance, Hopper & Thompson (1980) regard affectedness as a parameter of transitivity, treating it as a binary feature alongside others that collectively contribute to high transitivity. On the other hand, individuation represents another parameter related to the referential strength of the direct object. In contrast to the affectedness parameter, individuation is considered a gradient property, with several subparameters influencing the individuation of the referent. Thus, according to Hopper & Thompson (1980), the object contributes to the transitivity of a construction only when it is highly individuated, indicating referentiality and definiteness. This implies that concerning individuation, object incorporation structures lead to reduced transitivity, even though they may not necessarily display the syntactic properties of an intransitive construction (which is indeed the case in West Greenlandic, as mentioned in chapter 2). Næss

(2004) adopts Hopper & Thompson's (1980) claim that high affectedness aligns with high individuation. Additionally, she proposes that prominence serves as another dimension through which the degree of affectedness can be scrutinized. According to her, animate patients are always more affected than inanimate ones because the event has a greater impact on the patient. Tsunoda (1985) revises the concept of transitivity proposed by Hopper & Thompson (1980) and posits that a prototypical transitive event is one where change is entailed. Consequently, different types of change correspond to different parameters of affectedness. Malchukov (2005) decomposes Tsunoda's (1985) hierarchy into a two-dimensional hierarchy, encompassing both patient-related and agent-related properties. On the other hand, Lehmann (1991) suggests a two-dimensional scale where qualitative and quantitative parameters exist on a continuum, displaying the domain of affectedness for the first parameter and the degree of affectedness for the latter. Similarly, Beavers (2011, 2013) offers a two-dimensional space for encoding affectedness, the first dimension representing the type of change and the second the degree of change. While the type of change encompasses four distinct predicate types (change of state, directed motion, surface contact/impact, creation/consumption), the degree of change involves four degrees of affectedness (quantized change, non-quantized change, potential for change, unspecified for change) that correspond to the result state of the theme's transition along a path or scale. In his work, Beavers employs a semantic approach providing formal means to capture the semantic meaning associated with different verb types and their aspectual properties. This characteristic makes his account suitable for adaptation to the verb types discussed in the previous section. Consider the examples provided in (289) (taken from Beavers, 2011: 355).

(289) a. The ball rolled down to the bottom of the hill.
λ*e*∃*s* [*roll′* (**ball**, *s*, *e*) ∧ *result′*(**ball**, *s*, **bottom**, *e*)]

b. The ball rolled (further).
λ*e*∃*s*∃*g*[*roll′* (**ball**, *s*, *e*) ∧ result′(**ball**, *s*, *g*, *e*)]

c. Balls rolled down to the bottom of the hill.
λ*e*∃*s*∃*x*[*roll′* (*x*, *s*, *e*) ∧ *ball'*(*x*) ∧ result′(*x*, *s*, **bottom**, *e*)]

The example in (289a) shows that the event is telic, where any event *e* described by (289a) is related by the Figure/Path Relation to the theme ball and the path *s* from a contextually determined source to the bottom of the hill. However, if the quantity of the theme or the boundedness of the scale is unspecified, the predicate is atelic as in (289b) and (289c) respectively. Adapting the notation of Beavers (2011) to creation and destruction events, the following picture emerges, as shown in (290).

(290) a. Ahmet wrote the book.
λ*e*∃*s* [*write′* (**ahmet**, *s*, **0**, *e*) ∧ *result′*(**book**, *s*, **1**, *e*)]

b. Ahmet burnt the book.
λ*e*∃*s* [*burn′* (**ahmet**, *s*, **book**, *e*) ∧ *result′*(**book**, *s*, **0**, *e*)]

The example in (290a) illustrates a creation event, wherein *the book* transitions along a scale of existence from some initial 0 degree to a non-0 degree. In contrast, (290b) depicts a destruction event, wherein *the book* transitions along a scale of existence from initial non-0 degree to 0. Regarding usage events like *reading a book*, Beavers' analysis suggests that the theme does not undergo any change, subsuming *read* under the class of predicates "unspecified for change". For creation events, Beavers argues that themes in creation events cannot be regarded as affected, since prior existence is a relevant factor for affectedness. However, I propose that themes in creation events undergo a reverse type of change compared to destruction events. In the former, the theme transitions from 0 to non-0, while in the latter it shifts from non-0 to 0. In the light of these assumptions, I formulate the following hypothesis for the anaphoric potential of bare nouns, as illustrated in (291).

(291) The affectedness hypothesis

The anaphoric potential of a bare noun depends on the affectedness of the corresponding theme in the event. The more affected a theme participant is in an event, the more suitable it is for subsequent anaphoric uptake.

It is important to note that the affectedness hypothesis pertains to the anaphoric potential of bare nouns. However, the application of Beavers' (2011) diagnostics in section 4.3.2 suggests that no change is entailed in incorporation structures, as both

the quantity of the theme and the boundedness of the scale is underdetermined. This perspective remains relevant and will be addressed in section 4.6.

4.5 Anaphoric potential and affectedness of bare nouns

Some theoretical works on noun incorporation have recognized that verbal features play a crucial role in determining the anaphoric potential of incorporated nouns or bare nouns. For instance, Aksan (2007) argues that the anaphoric potential of bare nouns in Turkish is sensitive to aspectual properties. In particular, she provides examples where the subsequent pronominal uptake of bare nouns is acceptable in telic events but not in atelic events (similar to Dayal, 2011 for Hindi). Similarly, Rohde et al.'s (2006) findings indicate that pronoun resolution strategies are sensitive to verbal aspect. In the light of this they propose that affected entities are those exhibiting a prominent end state within the event. Moreover, I illustrated in chapter 2 that bare nouns, when combined with vague action verbs and regular verbs, permit pronominal uptake, whereas bare nouns in conjunction with true light verbs and in idiom formation do not (recall the examples in (190)). These facts lead to the question of how event structure influences the anaphoric potential of bare nouns. More precisely, the question emerges as to how the affectedness of the theme participant impacts their anaphoric potential in discourse. To empirically examine the influence of affectedness, I designed an acceptability judgement task for the anaphoric uptake of bare nouns in contexts using verbs of use, verbs of creation and verbs of destruction.[111] This study is the first empirical investigation using nominal and verbal parameters to examine the anaphoric potential of bare nouns.

4.5.1 Norming Study 2a. Number interpretation of inanimate bare objects

As is evident from the Norming Study 1a, the number bias of bare nouns plays a crucial role in the compatibility of the anaphoric uptake of bare nouns. For this reason, I employed an acceptability judgment task once again in order to access the number bias of each bare noun in conjunction with three different verb types: verbs of use, verbs of

[111] Pre-versions of the results have been published in Seidel (2019a).

creation and verbs of destruction. The items were composed of three sentences. The first sentence introduced a bare noun in a neutral context with respect to the number interpretation of the bare noun, as shown in (292)-(294). The two target sentences included definite descriptions using demonstrative noun phrases either in singular or in plural form. The advantage of using contexts involving the anaphoric uptake of bare nouns was to simultaneously evaluate the type of anaphoric expression used in those contexts determining in the number interpretation. In total 36 items were constructed. These items were distributed into three lists such that each list contained only one condition of one set. For each list items were presented in a pseudo-random order. Lists were distributed across 48 monolingually-raised native speakers of Turkish (34 women, 14 men; mean age: 28 years. They were asked to rate the acceptability of each continuation with regard to the context sentence. As in previous experiments, a 7-point Likert scale was used.

(292) **Context with verb of use**

Samet bu sabah posta kutusunu boşalt-tık-tan sonra
Samet this morning letterbox empty-F.NOM-ABL after
mektup oku-du.
letter read-PST
'Samet did letter-reading this morning after emptying the letterbox.'

a. **Bu mektup** özel-di.
this letter private-PST
'This letter was private.'

b. **Bu mektup-lar** özel-di.
this letter-PL private-PST
'These letters were private.'

(293) **Context with verb of creation**

Timuçin bu gece yatma-dan önce **mektup yaz-dı**.
Timuçin this night lie.down-ABL before letter write-PST
'Timuçin did letter-writing before going to bed tonight.'

a. **Bu mektup** özel-di.
this letter private-PST
'This letter was private.'

b. **Bu mektup-lar** özel-di.
this letter-PL private-PST
'These letters were private.'

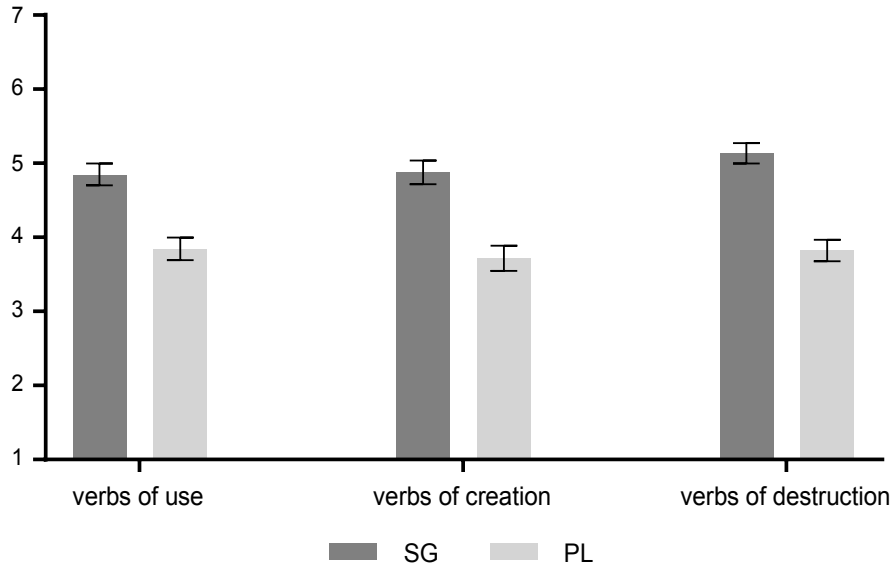
(294) **Context with verb of destruction**
Ayla dün akşam sevgili-si-ne kız-dığ-ı
Ayla yesterday evening boyfriend-POSS.3SG-DAT be.mad-F.NOM-3SG
için **mektup yırt-tı**.
because letter tear-PST
'Ayla did letter-tearing because she was mad with her lover last night.'

a. **Bu mektup** özel-di.
this letter private-PST
'This letter was private.'

b. **Bu mektup-lar** özel-di.
this letter-PL private-PST
'These letters were private.'

The results are presented in Figure 4. They show that participants preferred singular continuations over plural ones across all contexts.

Figure 4. Norming Study 2a: Number interpretation of inanimate bare objects.



Mean acceptability judgments for singular and plural interpretations of inanimate bare nouns in three different contexts: verbs of use, verbs of creation and verbs of destruction. Error bars represent standard errors (SE).

Moreover, visual inspection of the mean scores in each context shows that the plural conditions consistently received lower mean scores than singular conditions. Hence, no differences were found with respect to context-dependent number interpretation. The preferences for each context are summarized in Table 22. Contexts preferring plural over singular were excluded for Main Study 2.

Table 22. Norming Study 2a: Number interpretation for each N-V combination.

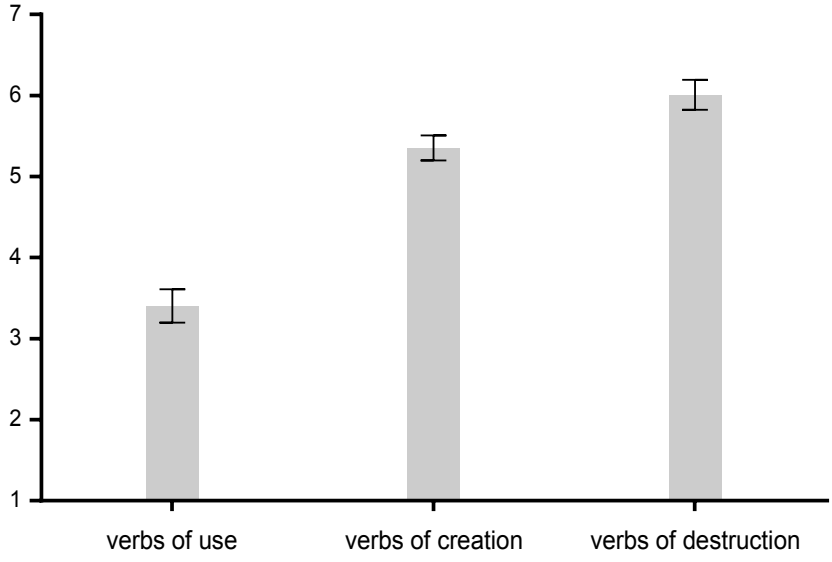
Verb type	Number bias
verbs of use	
kitap okumak 'book-read'	SG>PL
mektup okumak 'letter-read'	SG>PL
film izlemek 'movie-watch'	SG>PL
şarkı dinlemek 'song-listen'	SG>PL
resim incelemek 'picture-examine'	SG>PL
salatalık yıkamak 'cucumber-wash'	PL>SG
ağaç seyretmek 'tree-watch'	SG>PL
şal giymek 'scarf-wear'	SG>PL
elbise beğenmek 'dress-choose'	SG>PL
dolap yerleştirmek 'cupboard-organize	SG>PL
bilezik denemek 'bracelet-try'	PL>SG
heykel temizlemek 'statue-clean'	SG>PL
verbs of creation	
kitap yazmak 'book-write'	SG>PL
mektup yazmak 'letter-write'	SG>PL
film çekmek 'movie-make'	SG=PL
şarkı söylemek 'song-sing'	SG>PL
resim boyamak 'picture-paint'	SG>PL
salatalık ekmek 'cucumber-plant'	SG>PL
ağaç ekmek 'tree-plant'	SG>PL
şal örmek 'scarf-knit'	SG>PL
elbise dikmek 'dress-sew'	SG>PL
dolap kurmak 'cupboard-build'	SG>PL
bilezik işlemek 'bracelet-make'	SG>PL
statue şekillendirdi 'statue-shape'	SG>PL
verbs of destruction	
kitap yırtmak 'book-tear'	SG>PL
mektup yırtmak 'letter-tear'	SG>PL
film silmek 'movie-delete'	SG>PL
şarkı silmek 'song-delete'	SG=PL
resim yırtmak 'picture-delete'	PL>SG
salatalık kesmek 'cucumber-cut'	SG>PL
ağaç kesmek 'tree-cut'	PL>SG
şal sökmek 'scarf-strip'	SG>PL
elbise parçalamak 'dress-rip'	SG>PL
dolap parçalamak 'cupboard-break'	SG>PL
bilezik eritmek 'bracelet-fuse'	SG>PL
heykel yıkmak 'statue-demolish'	SG>PL

The table shows the number biases for bare nouns with three different types of verbs: (i) verbs of use, (ii) verbs of creation, and (iii) verbs of destruction.

4.5.2 Norming Study 2b. Affectedness of inanimate bare objects

Norming Study 2b was constructed to assess the degree of affectedness of the objects in combination with the different verb types. This study serves as the basis for the affectedness hypothesis formulated in (291) in the previous chapter. Given that Beavers' (2011, 2013) approach lacks predictions regarding the degree of affectedness for themes involved in creation events, it was crucial to investigate how participants perceive the affectedness of themes these events. The material from Norming Study 2a remained consistent for this investigation. The identical group of participants was recruited, and they were tasked with rating the affectedness of the object on a scale from 1 to 7. A score of 1 indicated that the object was perceived 'least affected', while a score of 7 indicated that the object was considered 'most affected'. It is noteworthy that the scale was maintained with the same levels to prevent confusion among participants. The results of the Norming Study 2b are depicted in Figure 5.

Figure 5. Norming Study 2b: Affectedness of inanimate bare objects.



Mean affectedness ratings for inanimate bare nouns in three different contexts: contexts with (i) verbs of use, (ii) verbs of creation, and (iii) verbs of destruction. Error bars represent standard errors (SE).

The mean scores suggests that bare objects in contexts with verbs of use consistently yielded significantly lower mean scores compared to objects in contexts with verbs of creation and verbs of destruction. The contrast between verbs of creation and verbs of

destruction is less pronounced. However, it is crucial to highlight that participants evidently differentiate between verbs of use on the one hand and verbs of creation and destruction on the other, providing evidence for the assumption that themes in creation events are affected to some degree. Following the proposed affectedness hypothesis in (291), we can say that bare nouns in creation events are more apt to be anaphorically picked up in subsequent discourse.

4.5.3 Norming Study 2c. Acceptability of noun-verb combinations

In order to test the acceptability of the noun-verb combinations, I conducted an acceptability judgment study using the experimental items from Norming Study 2b. On this occasion, however, the context sentences were simplified, as demonstrated in (295) – (297), to minimize the influence of redundant context-dependent parameters.

(295) **Context with verb of use**

Onur bu sabah mektup oku-du.
Onur this morning letter read-PST
'Onur did letter-reading this morning.'

(296) **Context with verb of creation**

Yunus bu gece mektup yaz-dı.
Yunus this night letter write-PST
'Yuns did letter-writing this morning.'

(297) **Context with verb of destruction**

Samet dün akşam mektup yırt-tı.
Samet yesterday night letter tear-PST
'Samet did letter-tearing yesterday evening.'

In addition to the critical items, I constructed two different types of control sentences. The upper baseline controls (298) included grammatical sentences with definite objects. The lower baseline controls (299) included semantic anomalies in which animacy restrictions were violated.

(298) **Grammatical control condition**

Timur dün yoğurd-u mayala-dı.
Timur yesterday yoghurt-ACC ferment-PST
'Timur made yoghurt yesterday.'

(299) **Semantic anomalous control condition**

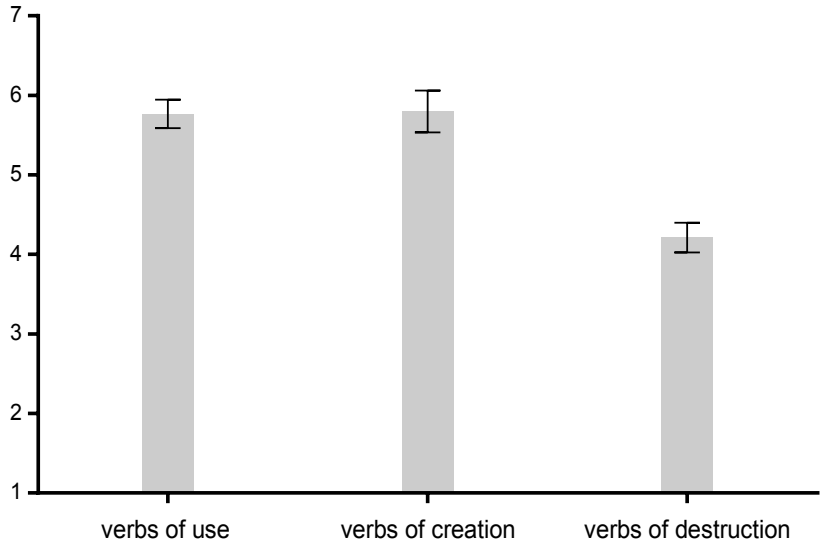
Hasan	dün	lamba-yı	aldat-tı.
Hasan	yesterday	lamp-ACC	cheat-PST

Lit. #'Hasan cheated on the lamp yesterday.'

The items were distributed into three lists, with each list comprising 36 sentences (12 critical items and 24 control items). 60 monolingual native speakers of Turkish (33 women, 27 men; mean age: 28 years) took part in this study. They were instructed to rely on their intuitions when assessing the acceptability of the sentences, using a scale from 1 to 7.

The average scores for each condition are presented in Figure 6. The results indicate that the mean scores for contexts with verbs of use were nearly equivalent to those involving verbs of creation (mean = 5.77 vs. mean = 5.79). Conversely, contexts with verbs of destruction yielded significantly lower mean scores (mean = 4.2).

Figure 6. Norming Study 2c: Acceptability of N-V combinations.



Mean acceptability judgments for inanimate bare nouns in three different contexts: contexts with (i) verbs of use, (ii) verbs of creation, and (iii) verbs of destruction. Error bars represent standard errors (SE).

The upper controls showed a significant difference from the lower controls (mean = 5.85 vs. mean = 1.36). However, the mean scores for upper controls and critical conditions are noteworthy (mean = 5.85 vs. mean 5.78). The fact that the upper

controls did not receive significantly higher scores indicates that contexts including bare nouns with verbs of use and verbs of creation can be considered highly accepted. Nevertheless, in comparison to the control conditions of Main Study 1, it must be stated that participants, in general, hesitated to use the entire scale, possibly influenced by the Turkish school grading system, which ranges from 1 (failure) to 5 (excellent). In summary, the findings from Norming Study 2c indicate a dispreference for bare nouns in combination with destruction verbs. This tendency may be attributed to the requirement for accusative case marking on objects when combined with verbs of destruction, which arises from presuppositional interpretations. Another proposition in the literature posits that high affectedness corresponds to high individuation, thereby necessitating accusative case marking on the object (Dede, 1981; Nilsson, 1985; Aksan, 1995; Schroeder, 1999). This is the reason why these conditions were excluded from Main Study 2.

4.5.4 Main Study 2. Accessibility and affectedness of bare objects

4.5.4.1 Method and materials

The experimental design of Main Study 2 included four conditions organized in a 2x2 factorial design. The manipulation involved two factors: the type of the anaphoric expression (covert pronoun *pro* vs. *bu* 'this' + N) and the verb type (verbs of use vs. verbs of creation). Due to their low acceptability ratings in Norming Study 2c, all items containing verbs of destruction were excluded. Examples for each condition are provided in (300) and (301).[112]

(300) **Context with verb of use**

Gönül geçen gün ofis-te mektup oku-du.
Gönül last day office-LOC letter read-PST
'Gönül did letter-reading at the office yesterday.'

a. *pro* Üç sayfa-ydı.
pro three pages-P.COP
'It was three pages long.'

[112] I would like to thank Gökben Konuk, Umut Özge and Duygu Özge for their valuable comments on earlier versions of my experimental stimuli.

b. Bu mektup üç sayfa-ydı.
this letter three page-P.COP
'This letter was three pages long.'

(301) **Context with verb of creation**

Sami geçen gün çalışma oda-sın-da mektup yazdı.
Sami last day office room-POSS.3SG-LOC letter write-PST
'Sami did letter-writing at the office yesterday.'

a. *pro* Üç sayfa-ydı.
pro three page-P.COP
'It was three pages long.'

b. Bu mektup üç sayfa-ydı.
this letter three page-P.COP
'This letter was three pages long.'

In light of the findings from Norming Study 2a, I decided to use only singular conditions. The experimental stimuli comprised two sentences. The context sentence included a bare noun within a context involving either a verb of use or a verb of creation. The target sentence contained an anaphoric expression referring back to the bare noun. Participants encountered a continuation that included either the covert pronoun or the full nominal anaphora. Notably, the target sentences in this experiment differed from Main Study 1 in two ways: only singular anaphora were used, and the anaphora served as subjects of the target sentence. The reason for this is twofold. Regarding the first point, the acceptability ratings of Norming Study 2a showed a general preference for singular interpretations. As for the second point, it was necessary to employ predicative constructions that unambiguously referred to the object of the context sentence, with the subject being covert, to avoid radical pro drop constructions (Neeleman & Szendrői, 2007). A total of 48 critical items (12 items per verb type) were created. These materials were distributed across four lists in a Latin Square design. Consequently, each participant saw only one type of context sentence and one type of target sentence. Each list was supplemented with 24 additional control items, as exemplified in (302) – (304).

(302) **Grammatical control condition**

Deniz günlerce aşk şarkı-lar-ı dinle-di.
Deniz for.days love song-PL-ACC listen-PST

pro Çok üzgün-dü.
pro very upset-PST

'Deniz listened to love songs for days. He was very upset.'

(303) **Incongruent control condition**

Ayşe bugün saatlerce cam-lar-ı sil-di.
Ayşe today for.hours window-PL-ACC clean-PST

pro Epeyce yorul-muş-#lar-dı.
pro quite become.tired- PRF-PL-PST

'Ayşe cleaned the windows for hours today. She got quite tired.'

(304) **Ungrammatical control condition**

Bilgi dün davetiye-ler-i gönder-di.
Bilgi yesterday invitation-PL-ACC send-PST

pro *Bun-u için epey geç kal-mış-lar-dı.
pro for.this-*ACC quite late stay-PRF-PL-PST

'Bilgi sent out the invitations yesterday. She was very late in this.'

The items were presented in a pseudo-random order, displaying only one item at a time. Similarly to Main Study 1, participants were provided with a link to the questionnaire created in Google Forms, and completed it online. Detailed instructions were presented immediately before the questionnaire started. A total of 160 monolingual speakers of Turkish (108 women, 52 men; mean age: 30 years) participated in this study. Participants gave written informed consent before taking part in the study. They were instructed to assess how naturally the sentences were linked to each other on a scale from 1 to 7, where a score of 1 indicated that the sentences were "well linked" and a score of 7 indicated that the sentences were "badly linked".

4.5.4.2 Predictions

The predictions, derived from the hypotheses formulated in chapter 3.2, can be adjusted for the purposes of the current study as follows. According to the opacity

hypothesis, the use of pronominal reference to bare nouns is anticipated to result in unacceptability. This implies a strong dispreference for critical items, such as those in (300a) and (301a). In line with the transparency hypothesis, similar acceptability ratings are expected for the critical conditions and the grammatical control conditions. Furthermore, no difference in acceptability is anticipated between the pronoun conditions and the grammatical controls. In contrast, following the translucency hypothesis, lower acceptability ratings are expected for the critical conditions compared to the grammatical control conditions. Additionally, aligning with the affectedness hypothesis formulated in (291), there is a prediction of an event bias based on affectedness dependency. Specifically, higher acceptability is expected for context involving creation events compared to usage events. Concerning creation events, higher acceptability is anticipated for continuations with covert pronouns, as opposed to those with definite descriptions. Conversely, for usage events, higher acceptability ratings are expected for continuations with definite descriptions, compared to those with covert pronouns. Moreover, higher acceptability ratings are expected for continuations including covert pronouns in creation events as opposed to usage events. Finally, in line with the accessibility hypothesis (and the (a) version of the translucency hypothesis), pronominal reference to bare objects should be judged less acceptable than to subjects. Furthermore, continuations including covert pronouns are expected to be less acceptable compared to grammatical control conditions and compared to continuations including definite descriptions. A summary of these predictions is provided in Table 23 below.

Table 23. Predictions for Main Study 2.

Hypothesis	**Acceptability of anaphoric uptake**
Opacity	not acceptable
Transparency	a) BN = GC b) BN[NULL] = GC
Translucency	a) BN < GC b) affectedness dependency: 1) CRE > USE 2) CRE[NULL] > USE[NULL] 3) CRE: NULL > DEM_N 4) USE: DEM_N > NULL
Accessibility	a) BN < GC b) BN[NULL] < GC c) BN[NULL] < BN[DEM_N] d) CRE = USE

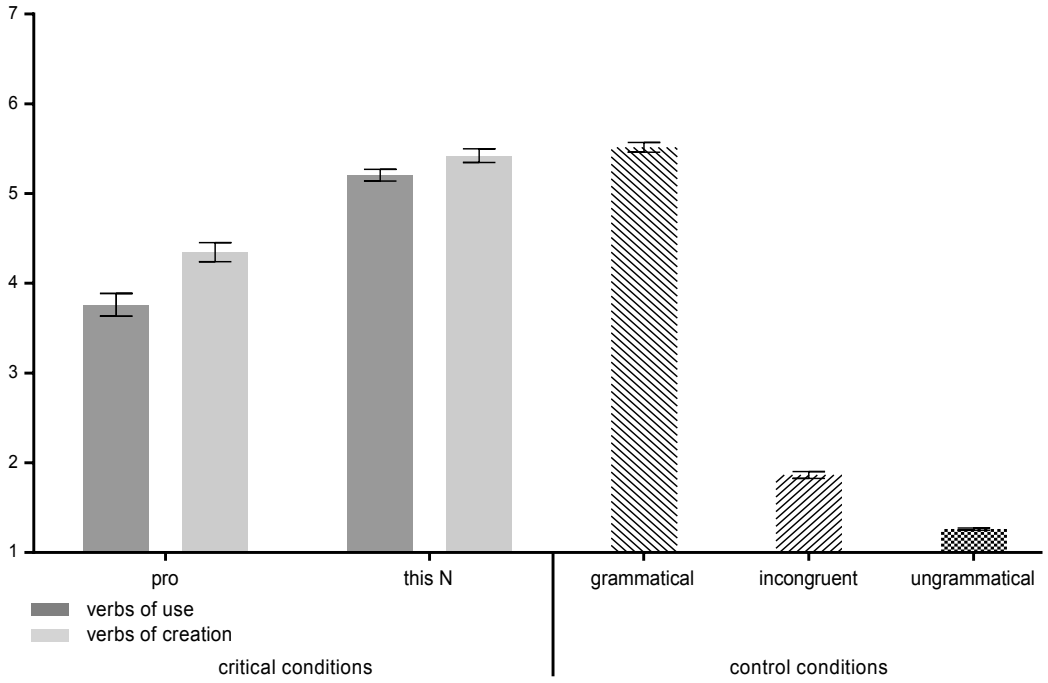
Abbreviations: BN = bare noun, CRE = creation verb, DEM_N = demonstrative noun, NULL = null pronoun, GC = grammatical control condition USE = usage verb

4.5.4.3 Analysis and results

Similarly to Main Study 1, I performed data analysis using linear mixed-effects models (LMEM) in R, with the score as outcome variable and with anaphoric expression and verb type as predictors. To account for subject and item variability, I incorporated them as random intercepts in the analysis.

The results of the study are presented in Figure 7, revealing a significant main effect of verb type $b = 1.26$, $SE = 0.18$, $t = 6.86$ and of anaphoric expression $b = 0.40$, $SE = 0.13$, $t = 2.51$.

Figure 7. Main Study 2: Anaphoric uptake of inanimate bare objects in contexts with different verb types.



Bars on the left side show mean acceptability judgments for anaphoric uptake with a covert pronoun (*pro*) and with a demonstrative noun phrase (*this N*) of inanimate bare nouns in two different contexts: contexts with verbs of use and contexts with verbs of creation. Bars on the right side indicate mean acceptability for three types of control conditions: grammatical, incongruent and ungrammatical. Error bars represent standard errors (SE).

As shown in Figure 7, there is no significant interaction of verb type and anaphoric expression (t = -1.16). Detailed statistics are summarized in Table 24.

Table 24. Main Study 2: Results of the LMEM.

Fixed effects	**Estimate**	**Std. Error**	**t-value**
ANAPHOR	1.26	0.18	6.86*
VERB TYPE	0.40	0.16	2.15*
ANAPHOR x VERB TYPE	-0.37	0.32	-1.16

*, |t-value| > 1.96.

The results from Figure 7 suggest that anaphoric reference to a bare noun is more acceptable in contexts with creation verbs than with usage verbs. Additionally,

continuations including demonstrative nouns were consistently rated higher than continuations including covert pronouns.

4.5.5 Discussion

In alignment with Main Study 1, the acceptability judgement task of Main Study 2 support pronominal uptake, contradicting the opacity hypothesis. According to the transparency hypothesis, two expectations were initially set: firstly, no difference was predicted between the critical conditions and grammatical control conditions, and secondly, no difference was expected between the critical condition including covert pronouns and the grammatical controls. However, both expectations were contradicted. In line with the translucency hypothesis, differences were found for the acceptability of critical conditions and grammatical control conditions. Additionally, a difference was observed between the event types. For usage events, continuations including definite descriptions were rated higher than continuations including covert pronouns. However, the reverse pattern was observed for creation events, contrary to the expected outcome. According to the accessibility hypothesis, lower acceptability ratings were expected for critical conditions compared to grammatical controls. This hypothesis aligns with the (a) version of the translucency hypothesis, which was confirmed. Similarly, the predicted lower acceptability ratings for critical conditions including covert pronouns in comparison to the critical conditions including definite descriptions and the grammatical controls were confirmed. However, according to the expectations of the accessibility hypothesis, no difference was anticipated for usage events and creation events, but the results revealed the opposite.

In sum, the aim of this acceptability judgement task was to empirically investigate the interaction of nominal and verbal parameters for the anaphoric potential of bare nouns. The results provide the first evidence supporting the claim that these parameters influence the anaphoric potential of bare nouns in discourse. They not only confirm that bare nouns exhibit properties of discourse translucency, as observed in Main Study 1, but also reveal that, in addition to nominal parameters, verbal parameters influence the anaphoric potential of bare nouns. This observation provides further evidence that translucency encompasses different parameters, both nominal and verbal, including

aspects such as number interpretation and event-dependent anaphoricity. These findings prompt the adjustment of prior DRT approaches concerning the anaphoric potential of bare nouns. This adjustment involves incorporating both nominal and verbal parameters into the structure of the discourse representation, and this is the objective of the upcoming section 4.6.

4.6 Mapping affectedness to accessibility

4.6.1 Motivation

Various proposals have been put forward concerning the contribution of pseudo-incorporated nouns in discourse within the framework of DRT. Two different camps, represented by different approaches using the DRT framework, have emerged in the literature. The first camp, represented by Farkas & de Swart (2003) and Yanovich (2008), asserts that pseudo-incorporated nouns do not introduce discourse referents. Instead, they remain as uninstantiated thematic arguments that can be picked up either through direct reference (using a squiggle operator) or indirectly through abstraction and summation. On the other hand, the second camp, represented by Modarresi (2014) and Krifka & Modarresi (2016), contends that pseudo-incorporated nouns do introduce discourse referents, which are embedded under an existential operator. Consequently, they propose that pronouns referring to pseudo-incorporated nominals are E-type pronouns, which explains why they cannot bind their antecedents.

The theories under discussion involve different assumptions regarding the anaphoric relation between the pseudo-incorporated object and the discourse pronoun. For instance, Farkas & de Swart (2003) claim that the type of the pronoun determines whether it necessitates a discourse referent or a thematic argument as its antecedent. Consequently, according to Farkas & de Swart (2003), the contribution of pseudo-incorporated nouns is claimed to be uniform across different languages. This implies that languages with pseudo-incorporated nouns showing discourse transparency have distinct construction rules for overt and covert pronouns compared to languages where pseudo-incorporated nouns are discourse translucent or discourse opaque. In the case of discourse translucent languages, the assumption is that only covert pronouns have the capability to promote an uninstantiated thematic argument to discourse referential

status. Nevertheless, in the case of discourse transparent languages, Farkas & de Swart (2003) argue that both covert and overt pronouns have the ability to elevate a thematic argument to discourse referential status. Additionally, they posit that the anaphoric relation between an uninstantiated thematic argument and a pronoun is a direct one. More precisely, they suggest that the construction rules for pronouns ensure the binding of the uninstantiated argument to a discourse referent. In general, Farkas & de Swart (2003) present an elegant theory of the anaphoric potential of pseudo-incorporated nouns, which can be applied to other languages. For instance, they provide examples from Chamorro, where double incorporation structures can also be accommodated within their theory. However, it remains unclear how their theory can adequately explain the number neutrality of pseudo-incorporated nouns. Furthermore, their theory of discourse translucency is formulated in terms of covert anaphoric reference to pseudo-incorporated nominals or uninstantiated thematic arguments. Therefore, their framework cannot accommodate languages like Turkish and Persian, where overt anaphoric reference to incorporated nominals is possible but less acceptable than reference to full-fledged arguments. Modarresi's (2014) proposal addresses this aspect by positing that pseudo-incorporated nominals introduce number-neutral discourse referents, contrasting with full-fledged arguments that are more suited for being referenced by overt singular or plural pronouns due to their morphological agreement in number-marking. However, Modarresi's (2014) account does not introduce distinctions concerning binding relations between number-neutral discourse referents and those that are specified for number. Yanovich's (2008) modification proposal addresses this difference by positing that pseudo-incorporated nominals introduce thematic arguments akin to Kamp & Reyle's (1993) duplex conditions, requiring a complex TA-abstraction rule for anaphoric access. Krifka & Modarresi (2016) further modify this proposal, suggesting that pseudo-incorporated nominals introduce discourse referents in a subordinated DRS due to existential closure at the level of the vP. They adopt the duplex condition mechanism, proposing an abstraction and summation rule for number-neutral discourse referents. Abstraction ensures the selection of the discourse referent from two conditions in the DRS, followed by summation, establishing an additional number-neutral discourse referent from the sum of all entities fulfilling the requirements of a particular event embedded

with the referent of the pseudo-incorporated noun. Krifka & Modarresi's (2016) model accommodates the ease with which pseudo-incorporated nouns can be picked up by covert pronouns due to the absence of number specification. Moreover, their proposal accounts for the potential for overt singular or plural anaphoric uptake, as they posit that, depending on world knowledge, the existential condition can be satisfied once or multiple times. However, their proposal falls short in accounting for the Turkish data presented in section 4.5. To tackle this issue, I suggest a modification to their proposal to account for the event-dependent anaphoricity of incorporated nouns in Turkish. This modification will be detailed in the following section.

4.6.2 An affectedness-based account in DRT

The results of the first experiment show that bare nouns in Turkish exhibit properties of discourse translucency. That is, they show properties of discourse transparency, but compared to their full-fledged arguments they show reduced transparency, which is indicated by the fact that anaphoric uptake of bare nouns is less acceptable than anaphoric uptake of regular indefinites. The results of the second experiment suggest that the anaphoric potential of bare nouns is determined by the event type. In particular, the data illustrates that bare nouns in creation events received higher acceptability ratings than bare nouns in usage events. Assuming that the theme participant of bare objects in creation events is more affected than the theme participant of bare objects in usage events (as evidenced by Norming Study 2b), these findings suggest that affectedness determines the anaphoric potential of bare nouns. As previously mentioned, existing theories in the literature fail to explain this variability. Therefore, I propose a modification to Krifka & Modarresi's (2016) account, specifically addressing the event-dependent anaphoricity.

In my assumption, affectedness is considered as an event property that is transferred to the theme participant of the bare object in the event. More precisely, affectedness is viewed as a degree of change along a scale that can be measured in the result state of the theme participant. Consider the examples in (305).

(305) a. Ahmet read the book until the end.
λ*e*∃*s* [*read*′ (**ahmet**, *s*, **book**, *e*) ∧ *result*′(**book**, *s*, **end**, *e*)]

b. Ahmet wrote the book.
λ*e*∃*s* [*write′* (**ahmet**, *s*, **0**, *e*) ∧ *result′*(**book**, *s*, **1**, *e*)]

Adopting the notation of Beavers (2011), I assume that the first conjunct indicates the type of the event and its participants in the source state, while the second indicates the participants' final state on the scale. Thus, a scale is understood as a directed path leading from a source state to a result state of the participant. With regard to (305a), (ahmet, *s*, book, *e*) represents the source state of the event whereas (book, *s*, end, *e*) represents the results state. The quantity of the theme is maintained through the unique quantity of the book and the boundedness of the scale is ensured through the explicit boundedness that the book was read until the end. Likewise, in (305b), the quantity of the theme is specified through its creation and the boundedness of the scale through its completed creation. However, in incorporation structures, such as in (306), both the quantity of theme and the boundedness of the scale are underdetermined, rendering the entire event atelic. However, with regard to the anaphoric uptake of the bare noun in (306b), I argue that the quantity of the theme *letter* is determined insofar as it was written until the third page and the boundedness of the scale is satisfied through the completion of the creation of the letter. Nevertheless, the boundedness of the scale in (306a) could be argued to be left open since the event of reading does not require its object participant to be read all the way to the end.

(306) a. Ahmet mektup oku-du. *pro* Üç sayfa-ydı.
Ahmet letter read-PST pro three pages-P.COP
'Ahmet did letter-reading at the office yesterday. It was three pages long.'

b. Ahmet mektup yaz-dı. *pro* Üç sayfa-ydı.
Ahmet letter write-PST pro three pages-P.COP
'Ahmet did letter-writing at the office yesterday. It was three pages long.'

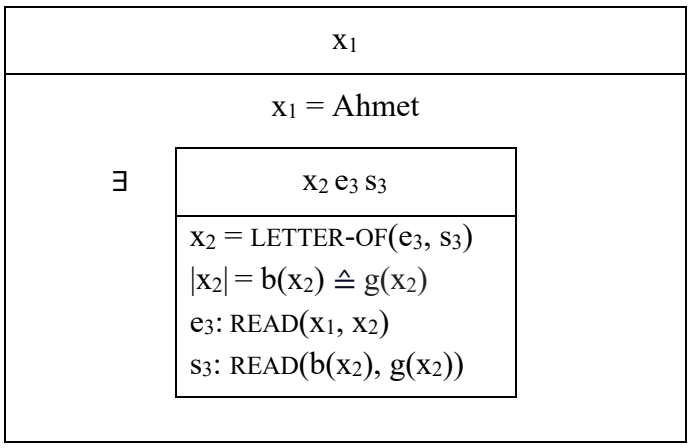
With regard to the DRT analysis, I omit this aspect for simplicity, since the main concern of the modification pertains to the event-dependent anaphoric potential of bare nouns.

Adopting Krifka's (1998) Movement Relation, I assume that each part of a theme *x* in an event *e* corresponds to a part of the scale *s* and vice versa. I posit that both creation events and usage events entail a scale, but that the scale differs with respect to the

change of *x* in each sub-event on the scale. In particular, I claim that an object *x* in each usage sub-event stays constant; that is, the sub-events do not differ with regard to the object's transition on the scale. However, an object *x* in each creation sub-event changes from sub-event to sub-event; hence, the object's transition on the scale is accompanied by a higher degree of growing change. Following Krifka & Modarresi's (2016) account, I assume that there is a Davidsonian event argument that undergoes existential closure. Additionally, I suggest that there is a scale argument. Consider the sentence in (307) and the corresponding discourse representation structure in (308).

(307) Ahmet mektup oku-du.
Ahmet letter read-PST
'Ahmet did letter-reading'

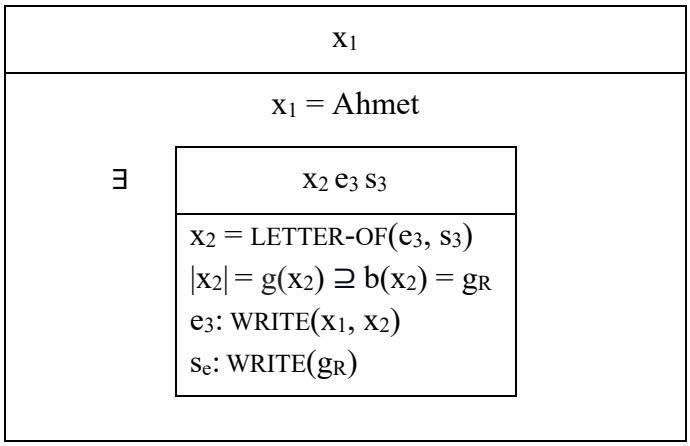
(308) Final DRS for (307)



The example in (307) illustrates a usage event of book-reading. In contrast to Krifka & Modarresi (2016), I suggest the conditions x_2 = LETTER-OF(e_3, s_3) and $|x_2| = b(x_2) \triangleq g(x_2)$. These conditions imply that for the discourse referent *letter* x_2 in the subordinated DRS, it holds that $b(x_2)$ is the union set of $g(x_2)$. Additionally, s_3: READ($b(x_2)$, $g(x_2)$) ensures that the theme participant, represented by its source state $b(x_2)$ and its final state $g(x_2)$, is mapped onto the scale *s*. The condition $|x_2| = b(x_2) \triangleq g(x_2)$ explains that theme participants in usage events do not undergo change, since $b(x_2) \triangleq g(x_2)$ and no difference of $b(x_2)$ and $g(x_2)$ is entailed on the scale s_3: READ($b(x_2)$, $g(x_2)$). However, for creation events, I assume that the theme participant undergoes some kind of change. Consider the example in (309) and its DRS in (310).

(309) Ahmet mektup yaz-dı.
Ahmet letter write-PST
'Ahmet did letter-writing

(310) Final DRS for (309)

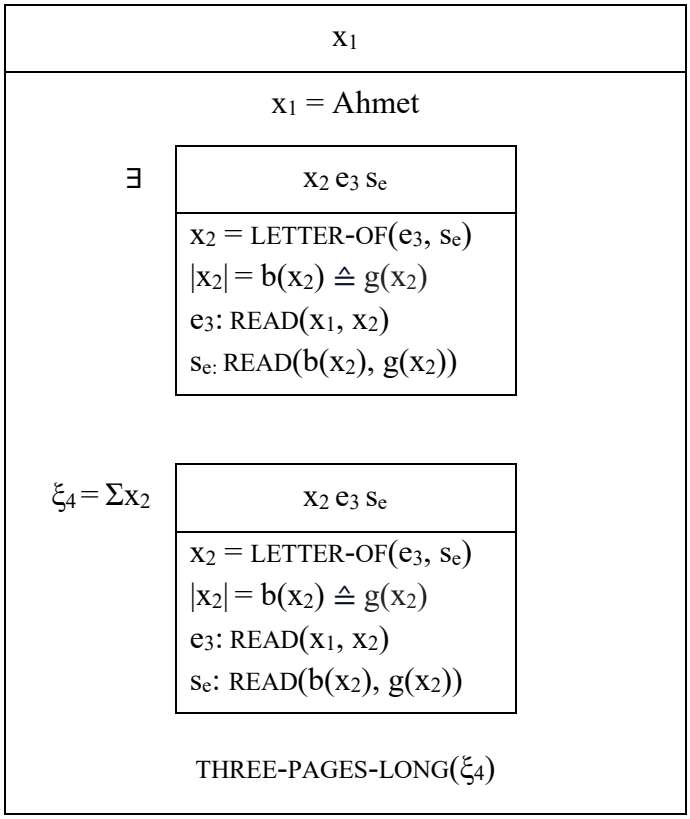


As illustrated in (310), I propose the conditions x_2 = LETTER-OF(e_3, s_3) and $|x_2| = b(x_2) \subseteq g(x_2)$. These conditions imply that for the discourse referent x_2 in the subordinated DRS, it holds that $g(x_2)$ is a superset of $b(x_2)$, implying that $b(x_2)$ is a subset of $g(x_2)$ and not vice versa. This condition explains that the theme participant undergoes change, since $b(x_2)$ and $g(x_2)$ are not identical, suggesting that the final state of x_2 is different from its source state. In other words, the letter changes its state in the course of the creation process, thereby creating a new discourse referent s_e: WRITE(g_R).

With respect to the discourse translucency of bare nouns in usage events and creation events, I claim that abstraction ensures that in creation events, the discourse referent is the result argument on the scale, whereas in usage events, it is chosen out of any sub-event arguments. Thus, when summation applies, a new discourse referent is created from the sum of all entities on the scale for which it holds that it is a *letter* that *Ahmet read* and that it was three pages long. Consider the final DRS in (312) for (311).

(311) Ahmet mektup oku-du. *pro* Üç sayfa-ydı.
Ahmet letter read-PST pro three pages-P.COP
'Ahmet did letter-reading at the office yesterday. It was three pages long.'

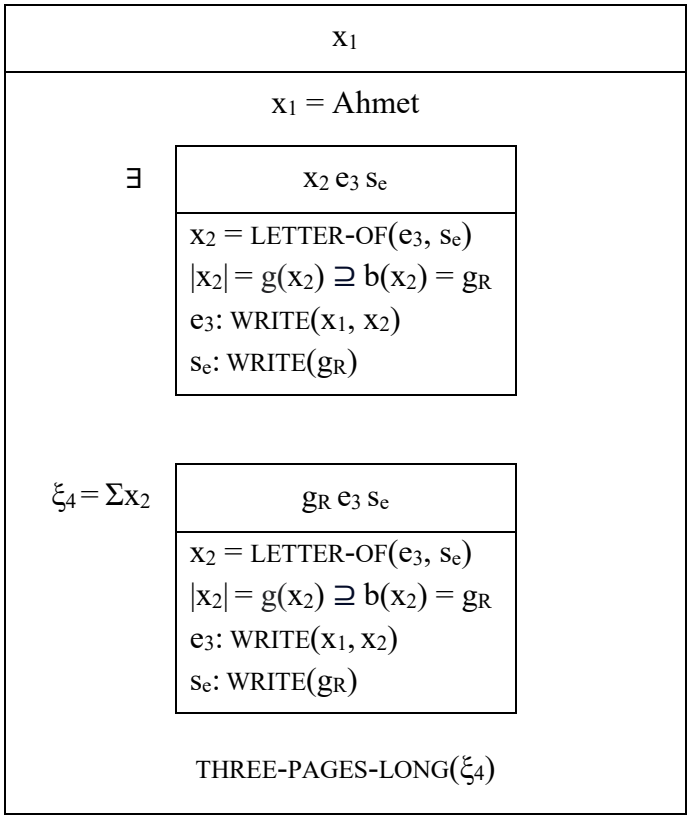
(312) Final DRS for (311)



In usage events, the condition $|x_2| = b(x_2) \triangleq g(x_2)$ expresses that x_2 could be any letter related to the event e_3 on the s_3. However, out of $|x_2| = b(x_2) \triangleq g(x_2)$ $|x_2| = 1$ is selected, due to the singularity of the bare noun. Nevertheless, number neutrality can be achieved from the existential condition which allows for more than one application. In contrast, for creation events (as in (313)), the condition $|x_2| = g(x_2) \supseteq b(x_2) = g_R$, shown in (314), implies that x_2 is the result argument, which is the unique letter related to e_3 on s_3. Consequently, summation applies to the result theme on the scale, implying that it is located on the latest stage on the scale due to its creation in the course of the event. This ensures that themes in creation events are more suitable for subsequent anaphoric uptake due to their change property.

(313) Ahmet mektup yaz-dı. *pro* Üç sayfa-ydı.
Ahmet letter write-PST pro three pages-P.COP
'Ahmet did letter-writing at the office yesterday. It was three pages long.'

(314) Final DRS for (313)



In conclusion, the suggested analysis accounts for different degrees of affectedness of bare nouns in terms of change as a transition on a scale where it is measured. The anaphoric potential of the bare noun corresponds to the change of the theme on the scale, where, in the case of creation events, abstraction applies to result themes for which summation introduces a new result argument, and, in the case of usage events, abstraction and summation apply to any arguments, either to the theme of the source state or of the result state.

5 General conclusion

5.1 Findings of the dissertation

In this dissertation, I investigated the discourse-semantic properties of bare nouns, focusing on nominal and verbal parameters that influence the anaphoric potential of bare nouns in Turkish. The aim was to bring empirical evidence to the discussion on the anaphoric potential of bare nouns in Turkish, a topic that has been debated in the literature on noun incorporation, where claims range from discourse opacity to discourse transparency without sufficient empirical support. In the following, I summarize the key observations made throughout this work.

To begin the discussion on noun incorporation, in chapter 2, I outlined the distinction between true incorporation and pseudo-incorporation, emphasizing morpho-syntactic properties related to nominal structure and syntactic position. The debate surrounding whether true incorporation falls under morphology or syntax, as a derivational process or as a result of syntactic movement, was explored. Simultaneously, a comparison was drawn between true incorporation and pseudo-incorporation, revealing similar semantic analyses. The primary objective was to illustrate that both types share key semantic properties, such as narrow scope behavior, number neutrality, reduced discourse transparency and name-worthiness. Building on these insights, I utilized these facts as a foundation for delving into the analyses of Turkish bare nouns within the existing literature on noun incorporation. I conducted a thorough literature review, examining various perspectives that categorize Turkish bare nouns under the true incorporation account, the pseudo-incorporation account or the adhesion account. This exploration aimed to provide a comprehensive overview of the diverse viewpoints within the scholarly discourse on the incorporation of bare nouns in Turkish. Subsequently, I advanced the analysis by examining various constructions where bare nouns are employed. I argued that bare nouns, when paired with regular verbs such as *book read*, should be distinguished from bare nouns involved in idiom formation and bare nouns in combination with true light verbs and vague action verbs. This differentiation was based on the application of specific tests designed to classify distinct noun-verb combinations. The goal was to highlight the need for a separate

treatment of bare nouns in conjunction with regular verbs, emphasizing their unique linguistic characteristics compared to instances where bare nouns contribute to idiom formation. Finally, building upon these tests, I proposed an incorporation strictness scale, outlined in (315). On this scale, "strict" signifies that the bare noun and the verb have a tight bond, leading to a strict adherence to the properties of true incorporation. Conversely, "liberal" implies a looser bond between the noun and the verb, enabling them to pass the tests proposed in the literature.

(315) [strict] IDIOMS > TLVS > VAVS > RVS [liberal]

In chapter 3, the focus shifted to the anaphoric potential of bare nouns when combined with regular verbs, and their analysis in the discourse semantics literature. Within this context, I argued that, in the realm of noun incorporation, accessibility and discourse transparency are distinct notions that lead to different predictions concerning the anaphoric potential of bare nouns or incorporated nouns. I delved into a review of the main proposals addressing this topic within the framework of Discourse Representation Theory. As a result of this examination, I formulated several hypotheses, as depicted in (316).

(316) a. The discourse opacity hypothesis
Bare nouns do not allow anaphoric uptake.

b. The discourse transparency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora to the same extent as their indefinite counterparts.

c. The discourse translucency hypothesis
Bare nouns allow anaphoric uptake through overt and covert anaphora, albeit not to the same extent as their indefinite counterparts.

d. The discourse accessibility hypothesis
Bare nouns allow anaphoric uptake only through low accessibility-marking expressions, such as definite descriptions.

These hypotheses subsequently served as main predictions for the empirical investigation into the anaphoric potential of bare nouns in Turkish. The investigation comprised two norming studies: the first examined the number interpretation of bare

nouns, and the second assessed the acceptability of the noun-verb combinations. Additionally, as the main study, an acceptability judgement task was conducted to examine the anaphoric potential. In this study, I used both the singular and plural forms for pronouns and for definite nouns in subsequent contexts. The results unveiled two key findings. Firstly, bare nouns exhibit a contextual preference for singular interpretations. Secondly, the study demonstrated that these bare nouns are less acceptable with subsequent pronominal uptake compared to their caseless indefinite counterparts. This provides evidence that they display properties of discourse translucency, challenging previous assumptions in the literature.

Finally, in chapter 4, I investigated the interplay between nominal and verbal parameters, specifically focusing on their impact on the anaphoric potential of bare nouns. This investigation involved a detailed examination of the event structure associated with noun-verb combinations. Additionally, I delved into the topic of affectedness to scrutinize the verbal parameters of event participants. In the light of this, I investigated three event types, encompassing usage, creation and destruction events. The analysis revealed that these predicates differ in the semantic interpretation of their indefinite objects. Specifically, verbs of use and verbs of destruction permit a presuppositional reading for their indefinite objects. However, the existential reading is only possible for complements of verbs of use. In contrast, verbs of destruction permit an existential interpretation only in habitual contexts that allow an interpretation with iterated actions. I further demonstrated that the verb types do not conform to the affectedness diagnostics proposed in the literature, and as a result, they do not fit into Beavers' (2011) degrees of affectedness. Building on this observation, I proceeded to empirically examine the degrees of affectedness in a norming study. The study unveiled that participants of destruction events were perceived as the most affected, whereas participants of usage events were considered the least affected, with participants of creation events falling in between. This observation prompted the formulation of the affectedness hypothesis, as illustrated in (317).

(317) The affectedness hypothesis

The anaphoric potential of a bare noun depends on the affectedness of the corresponding theme in the event. The more affected a theme participant is in an event, the more suitable it is for subsequent anaphoric uptake.

Moreover, in additional norming studies, I examined both the number interpretation and the acceptability of the noun-verb combinations. Regarding the former, the results indicated a preference for singular interpretations, while, concerning the latter, it was observed that bare nouns in contexts with verbs of destruction received low acceptability ratings. The unacceptability of bare nouns in combination with destruction verbs was explained by the observed fact that destruction verbs trigger a presuppositional reading for their object complements, manifesting the requirement for accusative case marking of the object in Turkish. Given this insight, I decided to investigate only verbs of use and verbs of creation in the main study. In order to examine the translucency hypothesis more thoroughly, I utilized covert pronouns in addition to demonstrative noun phrases in order to examine the anaphoric potential of bare nouns. The results confirmed the affectedness hypothesis. The subsequent anaphoric uptake of bare nouns in creation events received higher acceptability ratings than in usage events. Under the assumption that in creation events the theme participant is more affected than in usage events, this result provides evidence that the anaphoric potential of bare nouns in Turkish depends on the affectedness of the theme participant. This finding is noteworthy as it introduces a novel parameter for the anaphoric potential of bare nouns that has not been considered before. Therefore, I proposed a modification to Krifka & Modarresi's (2016) DRT account of the anaphoric potential of bare nouns. I argued that affectedness is an event property that is transferred to the theme participant in an event. Furthermore, I posited that affectedness represents a degree of change along a scale that can be measured in the result state of theme participant. Expanding on this, I proposed that, in addition to an event argument, there exists a scale argument that is anchored to the event, distinguishing the source state and the final state of the theme participant. For usage events I argued that the source state and the final state of the theme participant remain unchanged. Conversely, for creation events, I assumed that the final state represents the affected theme participant, thereby introducing a "discourse referent of result" for

it. In other words, abstraction ensures that in creation events, the antecedent represents the result argument on the scale, whereas in usage events, the antecedent is selected out of any sub-event arguments without specifying for the source state or the result state. On the one hand, this modification accounts for the difference between usage events and creation events; on the other hand, it explains why, in creation events, the theme participant is more affected and consequently more suitable for subsequent anaphoric uptake.

In conclusion, this investigation offers an original contribution to the much-debated issue of the anaphoric potential of incorporated nouns. It provides a first in-depth investigation of how, alongside nominal parameters, verbal parameters influence the anaphoric potential of bare nouns in discourse. Integrating nominal and verbal aspects paves the way for further investigations into other verbal parameters, such as aspectual properties of events.

5.2 Suggestions for further research

Let me end this dissertation by pointing out several directions for future research.

The results provided within this thesis could be further substantiated through a series of additional studies. Firstly, a forced-choice task could provide further evidence to support the results of the main studies. Taking inspiration from Scholten &Aguilar-Guevara (2010), who investigated the discourse potential of bare nouns, weak definites and regular indefinites, a forced-choice task could be employed. Participants could be asked to choose between a pronoun and a definite noun as a subsequent anaphoric device for experiment 1, or to choose between a null pronoun and a demonstrative noun for experiment 2. Secondly, another promising study to strengthen the findings could involve a story completion task. In this task, participants could be asked to complete discourse prompts containing various types of antecedents, such as bare nouns and regular indefinites in object position.

Building on Law & Syrett's (2017) research, a self-paced reading experiment could be carried out in order to assess the ease of anaphoric uptake of bare nouns in comparison to regular indefinites. In Law & Syrett's study, the stimuli incorporated contexts where a singular or plural overt pronoun, or a covert pronoun, appeared in subject position

promptly following the object bare noun antecedent from the preceding context sentence. These context sentences were biased towards either a singular, plural or neutral interpretation concerning the bare noun. Conducting a comparable experiment on Turkish has the potential to yield further insights into the processing of bare nouns. As previously highlighted, there is a need for a closer examination of verbal parameters, particularly aspectual properties, concerning the anaphoric potential of bare nouns. Aksan (2007), who discussed examples like the ones in (318), argues that the pronominal uptake of bare nouns is only possible in telic contexts, as opposed to atelic contexts.

(318) a. Ahmet 10 dakika-da arkadaş-ın-a **mektup$_i$** yaz-dı
Ahmet 10 minute-LOC friend-POSS.3SG-DAT letter write-PST
ve **on-u$_i$** yolla-dı.
and it-ACC send-PST
'Ahmet wrote a **letter$_i$** to his friend in ten minutes and he sent **it$_i$**.'

b. Ahmet 10 dakika boyunca **mektup$_i$** yaz-dı ve
Ahmet 10 minute long letter write-PST and
***on-u$_i$** yolla-dı.
it-ACC send-PST
'Ahmet was involved in the activity of **letter$_i$**-writing for ten minutes and he sent **it$_i$**.'

A comprehensive investigation could provide empirical evidence regarding the extent to which aspectual properties influence the ease of anaphoric uptake.

Another area in need of further research is the anaphoric potential of incorporated subjects. While some linguists claim that Turkish exhibits subject incorporation (Kornfilt, 2003; Kuribayashi, 1990; Öztürk, 2005a; among others), there are opposing views, as not all scholars support this perspective (Haig, 1998). As discussed in chapter 2, the debate persists regarding the analysis of bare objects as incorporated or not, and the same uncertainty exists concerning subjects. For instance, Kuribayashi (2016), in his work on subject incorporation, carried out a speed accuracy trade-off experiment, comparing canonical order with the scrambled order (for subject-incorporated sentences). His conclusion from this investigation suggests that not all of the conditions tested can unequivocally be considered as instances of subject

incorporation in Turkish. However, the existing literature lacks information regarding the anaphoric potential of incorporated subjects. Investigating this aspect is certainly worthwhile, and contexts akin to those exemplified in (319) and (320) could be examined in such a study.

(319) a. Nurten-ı **arı$_i$** sok-tu. **On-u$_i$** kov-du-k.
Nurten-ACC bee sting-PST it-ACC chase-PST-1PL
'Nurten got **bee$_i$**-stung. We chased **it$_i$** away.'

b. Nurten-ı **arı$_i$** sok-tu. ?[**pro İğne-sin-i**]$_i$
Nurten-ACC bee sting-PST pro needle-POSS.3SG-ACC
zor çıkar-dı-k.
difficult take.out-PST-1PL
'Nurten got **bee$_i$**-stung. We took **?its$_i$** dart out with difficulty.'

(320) a. Ağaç-ta **kuş$_i$** ötü-yor. ?**On-u$_i$** dün de duy-muş-t-um.
tree-LOC bird sing-PROG it-ACC yesterday too hear-PPT-PST-1PL
'There is **bird$_i$**-singing in the tree. I heard ?**it$_i$** yesterday, too.'

b. Ağaç-ta **kuş$_i$** ötü-yor. ?[**pro$_i$ Ses-in-i**]$_i$
tree-LOC bird sing-PROG pro voice-POSS.3SG-ACC
daha önce de duy-muş-t-um.
before too hear-PPT-PST-1SG
'There is **bird$_i$**-singing in the tree. I had heard ?**its$_i$** voice before, too.'

Investigating various verb types in this context could offer insights into whether the agent properties of the incorporated subject have an impact on the anaphoric potential. Finally, perhaps the most crucial avenue of research that remains unexplored is, as highlighted in chapter 2, the need for further investigation into the distinction between bare nouns in light verb constructions and idioms versus bare nouns in conjunction with regular verbs.

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Appendices

A Items for Main Study 1

No.	Context sentence	Target sentence
1	*Enis bu Ramazan'da çocuk giydirdi.* 'Enis did child-clothing this Ramadan.'	**a)** *Onu çok sevdindirdi.* 'He made him/her happy.' **b)** *Onları çok sevdindirdi.* 'He made them happy.' **c)** *Çocuğu çok sevdindirdi.* 'He made the child happy.' **d)** *Çocukları çok sevdindirdi.* 'He made the children happy.'
2	*Tolga bugün palyaço gibi giyinerek çocuk eğlendirdi.* 'Tolga did child-entertaining today by dressing like a clown.'	**a)** *Onu çok şımarttı.* 'He spoiled him/her a lot.' **b)** *Onları çok şımarttı.* 'He spoiled them a lot.' **c)** *Çocuğu çok şımarttı.* 'He spoiled the child a lot.' **d)** *Çocukları çok şımarttı.* 'He spoiled the children a lot.'
3	*Samet bugün yurtta çocuk sevindirdi.* 'Samet did child-enjoying at the home today.'	**a)** *Onu çok mutlu etti.* 'He made him/her very happy.' **b)** *Onları çok mutlu etti.* 'He made them very happy.' **c)** *Çocuğu çok mutlu etti.* 'He made the child very happy.' **d)** *Çocukları çok mutlu etti.* 'He made the children very happy.'
4	*Dilara geçen hafta evde bebek emzirdi.* 'Dilara did baby-breast-feeding at home last week.'	**a)** *Onu sonra uyuttu.* 'She then put him/her to sleep.' **b)** *Onları sonra uyuttu.* 'She then put them to sleep.' **c)** *Bebği sonra uyuttu.* 'She then put the baby to sleep.' **d)** *Bebekleri sonra uyuttu.* 'She then put them to sleep.'

No.	Context sentence	Target sentence
5	*Ebru dün kreşte bebek baktı.* 'Ebru did baby-sitting at the nursery yesterday.'	**a)** *Onu çok sevdi.* 'She liked him/her very much.' **b)** *Onları çok sevdi.* 'She liked them very much.' **c)** *Çocuğu çok sevdi.* 'She liked the child very much.' **d)** *Çocukları çok sevdi.* 'She liked the children very much.'
6	*Melisa dün evde bebek ağlattı.* 'Melisa did baby-making-cry at home yesterday.'	**a)** *Onu susturmaya çalıştı.* 'She tried to quiet him/her down.' **b)** *Onları susturmaya çalıştı.* 'She tried to quiet them down.' **c)** *Bebeği susturmaya çalıştı.* 'She tried to quiet the baby down.' **d)** *Bebekleri susturmaya çalıştı..* 'She tried to quiet the babies down.'
7	*Alev dün huzur evinde hasta besledi.* 'Alev did patient-nursing at the nursing home yesterday.'	**a)** *Onu doyurdu.* 'She fed him/her.' **b)** *Onları doyurdu.* 'She fed them.' **c)** *Hastayı doyurdu.* 'She fed the patient.' **d)** *Hastaları doyurdu.* 'She fed the patients.'
8	*Fethiye dün yaşlı bakım evinde hasta baktı.* 'Fethiye did patient-taking-care at the elderly care center yesterday.'	**a)** *Onu çok destekledi.* 'She supported him/her a lot.' **b)** *Onları çok destekledi.* 'She supported them a lot.' **c)** *Hastayı çok destekledi.* 'She supported the patient a lot.' **d)** *Hastalarai çok destekledi.* 'She supported the patients a lot.'

No.	Context sentence	Target sentence
9	*Betül geçen hafta bitkisel ilaçlarla hasta iyileştirdi.* 'Betül did patient-healing with herbal medicine last week.'	**a)** *Onu çok mutlu etti.* 'She made him/her very happy.' **b)** *Onları çok mutlu etti.* 'She made them very happy.' **c)** *Hastayı çok mutlu etti.* 'She made the patient very happy.' **d)** *Hastaları çok mutlu etti.* 'She made the patients very happy.'
10	*Volkan dün evine misafir çağırdı.* 'Volkan did guest-inviting to his home yesterday.'	**a)** *Onu eğlendirdi.* 'He entertained him/her.' **b)** *Onları eğlendirdi.* 'He entertained them.' **c)** *Misafiri eğlendirdi.* 'He entertained the guest.' **d)** *Misafirleri eğlendirdi.* 'He entertained the guests.'
11	*Nilberk hafta sonu evinde hazırlık yapıp misafir ağırladı.* 'Nilberk did guest-hosting at her home after making preparations over the weekend.'	**a)** *Onu memnun etti.* 'She pleased him/her.' **b)** *Onları memnun etti.* 'She pleased them.' **c)** *Misafiri memnun etti.* 'She pleased the guest.' **d)** *Misafirleri memnun etti.* 'She pleased the guests.'
12	*Nilhan dün sinirli olduğu için misafir azarladı.* 'Nilhan did guest-offending yesterday because she was angry.'	**a)** *Onu çok incitti.* 'She hurt him/her deeply.' **b)** *Onları çok incitti.* 'She hurt them deeply.' **c)** *Misafiri çok incitti.* 'She hurt the guest deeply.' **d)** *Misafirleri çok incitti.* 'She hurt the guests deeply.'

No.	Context sentence	Target sentence
13	*Cem geçen hafta eğitim kampında asker eğitti.* 'Cem did soldier-training at the training camp last week.'	**a)** *Onu taktir etti.* 'He appreciated him/her.' **b)** *Onları taktir etti.* 'He appreciated them.' **c)** *Askeri taktir etti.* 'He appreciated the soldier.' **d)** *Askerleri taktir etti.* 'He appreciated the soldiers.'
14	*Mustafa geçen hafta eğitim kampında asker yaraladı.* 'Mustafa did soldier-hurting at the training camp last week.'	**a)** *Onu acil servise götürdü.* 'He took him/her to the emergency ward.' **b)** *Onları acil servise götürdü.* 'He took them to the emergency ward.' **c)** *Askeri acil servise götürdü.* 'He took the soldier to the emergency ward.' **d)** *Askerleri acil servise götürdü.* 'He took the soldiers to the emergency ward.'
15	*Musa dün karargahtan geçerken asker selamladı.* 'Musa did soldier-saluting when passing the barracks yesterday.'	**a)** *Onu çok taktir etti.* 'He highly appreciated him/her.' **b)** *Onları çok taktir etti.* 'He highly appreciated them.' **c)** *Askeri çok taktir etti.* 'He highly appreciated the soldier.' **d)** *Askerleri çok taktir etti.* 'He highly appreciated the soldiers.'
16	*Nagihan bugün çocuk kaybolduğu için dadı azarladı.* 'Nagihan did nanny-rebuking today because the child was lost.'	**a)** *Onu suçladı.* 'She accused him/her.' **b)** *Onları suçladı.* 'She accused them.' **c)** *Dadıyı suçladı.* 'She accused the nanny.' **d)** *Dadıları suçladı.* 'She accused the nannies.'

No.	Context sentence	Target sentence
17	*Aylin dün iş yerinde dadı bekledi.* 'Aylin did nanny-waiting at work yesterday.'	**a)** *Onu ofise çağırdı.* 'She called her to the office.' **b)** *Onları ofise çağırdı.* 'She called them to the office.' **c)** *Dadıyı ofise çağırdı.* 'She called the nanny to the office. **d)** *Dadıları ofise çağırdı.* 'She called the nannies to the office.'
18	*Dilek önümüzdeki hafta için dadı aradı.* 'Dilek did nanny-searching for next week.'	**a)** *Onu tam zamanlı çalıştıracak.* 'She will hire her full-time.' **b)** *Onları tam zamanlı çalıştıracak.* 'She will hire them full-time.' **c)** *Dadıyı tam zamanlı çalıştıracak.* 'She will hire the nanny full-time.' **d)** *Dadıları tam zamanlı çalıştıracak.* 'She will hire the nannies full time.'
19	*Eren dün iyilik olsun diye sokakta adam doyurdu.* 'Eren did man-feeding at the street out of kindness yesterday.'	**a)** *Onu restorana çağırdı.* 'He called him to the restaurant.' **b)** *Onları restorana çağırdı.* 'He called them to the restaurant.' **c)** *Adamı restorana çağırdı.* 'He called the man to the restaurant.' **d)** *Adamları restorana çağırdı.* 'He called the men to the restaurant.'
20	*Murat geçen hafta şehir merkezinde adam vurdu.* 'Murat did man-shooting in the city center last week.'	**a)** *Onu göğsünden yaraladı.* 'He wounded him in the chest.' **b)** *Onları göğsünden yaraladı.* 'He wounded them in the chest.' **c)** *Adamı göğsünden yaraladı.* 'He wounded the man in the chest.' **d)** *Adamları göğsünden yaraladı.* 'He wounded the men in the chest.'

No.	Context sentence	Target sentence
21	*Mehmet dün soygun sırasında adam öldürdü.* 'Mehmet did man-killing during the robbery yesterday.'	**a)** *Onu ambulans alıp götürdü.* 'The ambulance took him away.' **b)** *Onları ambulans alıp götürdü.* 'The ambulance took them away.' **c)** *Adamı ambulans alıp götürdü.* 'The ambulance took the man away.' **d)** *Adamları ambulans alıp götürdü.* 'The ambulance took the men away.'
22	*Nilgün bugün dershanede öğrenci çalıştırdı.* 'Nilgün did student-coaching in the private lessons today.'	**a)** *Onu sınıfta bekletti.* 'She kept him/her waiting in the class.' **b)** *Onları sınıfta bekletti.* 'She kept them waiting in the class.' **c)** *Öğrenciyi sınıfta bekletti.* 'She kept the student waiting in the class.' **d)** *Öğrencileri sınıfta bekletti.* 'She kept the students waiting in the class.'
23	*Çağla bugün sınıfta öğrenci ödüllendirdi.* 'Çağla did student-rewarding in the classroom today.'	**a)** *Onu kantine götürdü.* 'She took him/her to the cafeteria.' **b)** *Onları kantine götürdü.* 'She took them to the cafeteria.' **c)** *Öğrenciyi kantine götürdü.* 'She took the student to the cafeteria.' **d)** *Öğrencileri kantine götürdü.* 'She took the students to the cafeteria.'
24	*Sibel bugün ingilizce dersinde öğrenci dövdü.* 'Sibel did student-beating in the English lesson today.'	**a)** *Onu rencide etti.* 'She offended him/her.' **b)** *Onları rencide etti.* 'She offended them.' **c)** *Öğrenciyi rencide etti.* 'She offended the student.' **d)** *Öğrencileri rencide etti.* 'She offended the students.'

No.	Context sentence	Target sentence
25	*Emre geçen hafta bankada hırsız gördü.* 'Emre did thief-seeing at the bank last week.'	**a)** *Onu şikayet etti.* 'He reported him/her.' **b)** *Onları şikayet etti.* 'He reported them.' **c)** *Hırsızı şikayet etti.* 'He reported the thief.' **d)** *Hırsızları şikayet etti.* 'He reported the thieves.'
26	*Hüseyin dün Taksim meydanında hırsız yakaladı.* 'Hüseyin did thief-catching at Taksim Square yesterday.'	**a)** *Onu rezil etti.* 'He embarrassed him/her.' **b)** *Onları rezil etti.* 'He embarrassed them.' **c)** *Hırsızı rezil etti.* 'He embarrassed the thief.' **d)** *Hırsızları rezil etti.* 'He embarrassed the thieves.'
27	*Ümit geçen hafta mahkemede hırsız cezalandırdı.* 'Ümit did thief-punishing in the court last week.'	**a)** *Onu hapise attırdı.* 'He had him/her imprisoned.' **b)** *Onları hapise attırdı.* 'He had them imprisoned.' **c)** *Hırsızı hapise attırdı.* 'He had the thief imprisoned.' **d)** *Hırsızları hapise attırdı.* 'He had the thieves imprisoned.'
28	*Fadime bugün orman yangını çıktığı için itfaiyeci çağırdı.* 'Fadime did fireman-calling because a forest broke out today.'	**a)** *Onu ormanda bekledi.* 'She waited for him/her in the forest.' **b)** *Onları ormanda bekledi.* 'She waited for them in the forest.' **c)** *İtfaiyeciyi ormanda bekledi.* 'She waited for the fireman in the forest.' **d)** *İtfaiyecileri ormanda bekledi.* 'She waited for the firemen in the forest.'

No.	Context sentence	Target sentence
29	*Leyla fabrikasında geçen yıl itfaiyeci çalıştırdı.* 'Leyla did fireman-employing in her factory last year.'	**a)** *Onu çok yordu.* 'She tired him out a lot.' **b)** *Onları çok yordu.* 'She tired them out a lot.' **c)** *İtfaiyeciyi çok yordu.* 'She tired the fireman out a lot.' **d)** *İtfaiyecileri çok yordu.* 'She tired the firemen out a lot.'
30	*Neslihan dün yangın çıktığını sandığı için itfaiyeci aradı.* 'Neslihan did fireman-calling because she thought there was fire yesterday.'	**a)** *Onu telefona çağırdı.* 'She called him on the phone.' **b)** *Onları telefona çağırdı.* 'She called them on the phone.' **c)** *İtfaiyeciyi telefona çağırdı.* 'She called the fireman on the phone.' **d)** *İtfaiyecileri telefona çağırdı.* 'She called the firemen on the phone.'
31	*Tuncay dün şehir merkezinde suçlu aradı.* 'Tuncay did criminal-searching in the city center yesterday.'	**a)** *Onu bulduğunda tutukladı.* 'When he found him/her, he arrested him/her.' **b)** *Onları bulduğunda tutukladı.* 'When he found them, he arrested them.' **c)** *Suçluyu bulduğunda tutukladı.* 'When he found the criminal, he arrested him/her.' **d)** *Suçluları bulduğunda tutukladı.* 'When he found the criminals, he arrested them.'
32	*Ozan dün emniyet müdürlüğünde suçlu dövdü.* 'Ozan did criminal-beating at the police department yesterday.'	**a)** *Onu yaraladı.* 'He injured him/her.' **b)** *Onları yaraladı.* 'He injured them.' **c)** *Suçluyu yaraladı.* 'He injured the culprit.' **d)** *Suçluları yaraladı.* 'He injured the culprits.'

No.	Context sentence	Target sentence
33	*Ufuk geçen yıl bir psikolog olarak suçlu gözledi.* 'Ufuk did criminal-observing as a psychologist last year.'	**a)** *Onu şikayet etti.* 'He reported him/her.' **b)** *Onları şikayet etti.* 'He reported them.' **c)** *Suçluyu şikayet etti.* 'He reported the criminals.' **d)** *Suçluları şikayet etti.* 'He reported the criminals.'
34	*Onur geçen yil iş yerinde doktor çalıştırdı.* 'Onur did doctor-employing at his work last year.'	**a)** *Onu bıktırdı.* 'He tired him/her out.' **b)** *Onları bıktırdı.* 'He tired them out.' **c)** *Doktoru bıktırdı.* 'He tired the doctor out.' **d)** *Doktorları bıktırdı.* 'He tired the doctors out.'
35	*Ali dün hastane kafeteryasında doktor gördü.* 'Ali did doctor-seeing in the hospital cafeteria yesterday.'	**a)** *Onu selamladı.* 'He greeted him/her.' **b)** *Onları selamladı.* 'He greeted them.' **c)** *Doktoru selamladı.* 'He greeted the doctor.' **d)** *Doktorları selamladı.* 'He greeted the doctors.'
36	*Burhan dün mahallede doktor aradı.* 'Burhan did doctor-searching in the neighborhood yesterday.'	**a)** *Onu çok beğendi.* 'He liked him/her a lot.' **b)** *Onları çok beğendi.* 'He liked them a lot.' **c)** *Doktoru çok beğendi.* 'He liked the doctor a lot.' **d)** *Doktorları çok beğendi.* 'He liked the doctors a lot.'

B Items for Main Study 2

No.	Context sentence	Target sentence
1	*Gönül geçen gün ofiste mektup okudu.* 'Gönül did letter-reading at the office yesterday.'	**a)** *Üç sayfaydı.* 'It was three pages long.'
2	*Sami geçen gün çalışma odasında mektup yazdı.* 'Sami did letter-writing in his work room yesterday.	**b)** *Bu mektup üç sayfaydı.* 'This letter was three pages long.'
3	*Yunus geçen hafta dergide makale yayınladı.* 'Yunus did article-publishing in the journal last week.'	**a)** *Yenilikçiydi.* 'It was innovative.'
4	*Fatma geçen hafta üniversitede makale yazdı.* 'Fatma did article-writing at the university last week.'	**b)** *Bu makale yenilikçiydi.* 'This article was innovative.'
5	*Selçuk bugün koridorda etek astı.* 'Selçuk did skirt-hanging in the corridor today.'	**a)** *Kıpkırmızıydı.* 'It was bright red.'
6	*Zeynep bugün evde etek dikti.* 'Zeynep did skirt-sewing today.'	**b)** *Bu etek kıpkırmızıydı.* 'This skirt bright red.'
7	*İsmail dün okulda bere taktı.* 'Ismail did beanie-wearing at the school yesterday.'	**a)** *Masmaviydi.* 'It was navy blue.
8	*Ayten dün evde bere ördü.* 'Ayten did beanie-knitting yesterday.'	**b)** *Bu bere masmaviydi.* 'This beanie was navy blue.'

No.	Context sentence	Target sentence
9	*Mehmet geçen akşam butikte kazak katladı.* 'Mehmet did pullover-folding at the boutique yesterday evening.'	**a)** *Rengarenkti.* 'It was colorful.'
10	*Gülseren geçen akşam arkadaşında kazak ördü.* 'Gülseren did pullover-knitting yesterday evening.'	**b)** *Bu kazak rengarenkti.* 'This pullover was colorful.'
11	*İbrahim bugün mağazada elbise astı.* Ibrahim did dress-hanging at the store today.'	**a)** *Kareliydi.* 'It was plaid.'
12	*Leyla bugün terzi dükkanında elbise dikti.* 'Leyla did dress-sewing at the tailor's shop today.'	**b)** *Bu elbise kareliydi.* 'This dress was plaid.'
13	*Aylin dün sabah müzede heykel temizledi.* 'Aylin did sculpture-cleaning in the museum yesterday morning.'	**a)** *Siyah mermerdendi.* 'It was made of black marble.'
14	*Musa dün sabah iş yerinde heykel yonttu.* 'Musa did sculpture-forming at work yesterday morning.'	**b)** *Bu heykel siyah mermerdendi.* 'This sculpture was made of black marble.'
15	*Ömer geçen hafta halıcıda halı süpürdü.* 'Ömer did carpet-sweeping at the carpet shop last week.'	**a)** *Desenliydi.* 'It was patterned.'
16	*Tarife geçen hafta atölyede halı dokudu.* 'Tarife did carpet-weaving in the workshop last week.'	**b)** *Bu halı desenliydi.* 'This carpet was patterned.'
17	*Bahar bu sabah mutfakta bıçak biledi.* 'Bahar did knife-sharpening this morning.'	**a)** *Paslanmaz çeliktendi.* 'It was made of stainless steel.'
18	*Selim bu sabah dökümhanede bıçak döktü.* 'Selim did knife-forging at the foundry this morning.'	**b)** *Bu bıçak paslanmaz çeliktendi.* 'This knife was made of stainless steel.'

No.	Context sentence	Target sentence
19	*Güner geçen hafta nikah salonunda yüzük taktı.* 'Güner did ring-putting at the wedding hall last week.'	**a)** *Gümüştü.* 'It was made of silver.'
20	*Ceyda geçen hafta fabrikada yüzük işledi.* 'Ceyda did ring-producing at the factory last week.'	**b)** *Bu yüzük gümüştü.* 'This ring was made of silver.'
21	*Nurşen geçen hafta kuyumcuda bilezik denedi.* 'Nurşen did bracelet-trying at the jeweler last week.'	**a)** *Sarı altındandı.* 'It was made of yellow gold.'
22	*Celal geçen hafta atölyede bilezik işledi.* 'Celal did bracelet-producing in the workshop last week.'	**b)** *Bu bilezik sari altındandı.* 'This bracelet was made of yellow gold.'
23	*Kadriye dün yatak odasında dolap düzenledi.* 'Kadriye did wardrobe-organizing in her bedroom yesterday.'	**a)** *Çift kapaklıydı.* 'It had double doors.'
24	*Sami dün mutfakta dolap kurdu.* 'Sami did cupboard-building in the kitchen yesterday.'	**b)** *Bu dolap çift kapaklıydı.* 'This wardrobe/cupboard had double doors.'