

FULLER
THEOLOGICAL SEMINARY

School of Intercultural Studies

**Doctor of Philosophy
Dissertation Approval Sheet**

This dissertation entitled

**TOPICALITY AND FUNCTIONAL VOICE IN HEBREW AND MORONENE,
WITH APPLICATION TO TRANSLATION**

written by

T. David Andersen

and submitted in partial fulfillment of the
requirements for the degree of

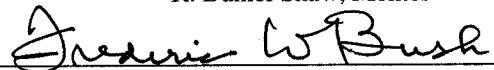
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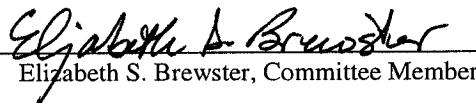
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Date December 2006



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By

T. David Andersen

A Dissertation Presented to the
Faculty of the School of Intercultural Studies
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December 2006

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ABSTRACT

Andersen, T. David

2006 "Topicality and Functional Voice in Hebrew and Moronene, with Application to Translation." Fuller Theological Seminary, School of Intercultural Studies. Ph.D. in Intercultural Studies. 346 pp.

This dissertation aims to show that an analysis of Biblical Hebrew clause types in terms of topicality and functional voice will make a contribution to the task of translating Hebrew into other languages. Hebrew has only two syntactic voice categories. But many other languages, including Austronesian languages, have a richer system of voice distinctions, with perhaps four main voices. It will be helpful to translators to clarify whether the topicality patterns behind such voice distinctions are signaled by Hebrew syntax.

The analysis is carried out on a Hebrew corpus of 1917 semantically transitive clauses, as well as 640 clauses from Moronene, an Austronesian language of Sulawesi, Indonesia. These are categorized into clause types based on features including verb conjugation, constituent order, and object marking. For each clause, the topicality of the actor and undergoer is quantified by the variables anaphoric continuity and topic persistence. After undergoing principal component analysis, common clause types are plotted, clustered, and classified in terms of functional voice categories.

For Hebrew narrative and directive discourse, infrequent and common clause types are grouped to form amalgamated clause types based on (1) type of object marking, (2) constituent order, (3) verb conjugation. Their topicality patterns are described and classified.

Subsequently, common Hebrew narrative clause types are matched with Moronene narrative clause types having similar functional voice categorization. Biblical portions translated into Moronene are examined to see to what extent particular Hebrew clause types have been translated by matching Moronene clause types. Non-matching and rare clause types found in the Moronene translation were evaluated for naturalness, and some of them were revised.

Some conclusions are:

- Although Hebrew has only two syntactic voice categories, its clause types form a large set of functional voice categories, including antipassive, active, semi-active, inverse, passive, low topicality active, and low topicality passive.
- Moronene clause types form a similar set of functional voice categories.
- The topicality patterns of *qatal* match those of *yiqtol*, and those of *wayyiqtol* match those of *weqatal*.
- Comparison of source language functional voice categories with those of the target language can increase the naturalness of a translation.

Mentor: R. Daniel Shaw

350 words

DEDICATION

To Francis I. Andersen

ACKNOWLEDGEMENTS

I want to thank my mentor, Dan Shaw, for his patience, encouragement, and concern. This dissertation has been a long journey, and at several points it required sharp changes of direction to reach the destination. Dan was an excellent navigator to turn to for advice at those crucial junctures.

I want to thank the other members of my committee: Frederic Bush for his enthusiasm and encouragement, and Betty-Sue Brewster, whose LAMP method of language acquisition inspired me to keep walking around the village talking with lots of people when I was learning Moronene. I want to thank my other tutors: Ronald Langacker, Charles Grimes, Francis Andersen, Thomas Payne, and Cynthia Miller. All of them gave valuable feedback and suggestions. I want to thank my outside reader Christo van der Merwe for his input, advice, and encouragement. I want to thank the dean of the School of Intercultural Studies, Betsy Glanville, for her repeated help with the practicalities of distance learning over many years. I thank the SIS research librarian, Oksana Bevz, who read through the whole manuscript with great attention to detail, finding numerous errors.

I thank the friendly and helpful librarians at McAlister Library at Fuller and the Graduate Institute of Applied Linguistics library in Dallas. With their help I was able to access the worlds of Hebrew and Austronesian scholarship from faraway Kendari.

I want to thank those who have helped me with my study of Hebrew, especially my father, Francis I. Andersen, Mr. Barnea at UC Berkeley, Mr. Hallam at the University of Melbourne, and Howard Peskett at the Discipleship Training Centre.

I want to thank the many many Moronene people who have helped me learn their fascinating language. Thanks to those who welcomed me and my family to stay in their homes, which was the ideal environment to hear Moronene spoken: Sudin and Sese in Pusu'ea; Amon Manguntu and Tinano Jee, as well as Saridi and Wa'e in Taubonto; Arsalam and Tinano Deo in Toburi; Luther and Tinano Rose, Wenas, and Soro Manguntu in Kasipute; Gima and Tinano Lis in Rarowatu; Narson and Liana in Kendari. Thanks to those who told me Moronene stories and gave me texts: Wede, Ndasi, Simon Karel, Anton, Arsalam, Dengi, Estelita, Hasan, Heber, Heru, Jasman, Marii, Narson, Ndoke, Nursalim, Ramli, Rela, Rusman, Saenuddin, Sudin, Syarmin R., Taincodo, Tipu, and Yusuf Waate. Thanks to Sultan Wudhawie, Agus Poli, and Iwan, who gave a lot of input into the lexicon. Thanks to many others who taught me Moronene words and sentences: Silfen Periks, Nusa, Etu, Rekson, Aa, Ali, Andayana, Alex, Alwan, Anton, Arara, Aras, Aswad, Azis, Baharuddin, Bastiaan, Bendi, Dadi S. Tomy, Darson, Dasi, Dawondu, Deo, Dirhan, Dirman, Diro, Do'a, Eka, Hada, Haidi, Hale, Halipu, Hati, Heles, Herices, Herman, Hudin, Huse, Ibrahim, Irawati, Jasman, Jemi, Jus, Kalibu (Mincu), Kamlin, Karya, Kasdin, Latief, Limo, Ludin, Lukman, Lutu, Mata, Mius, Mode (Ruth), Mustamin, Namang, Narati, Nasrun, Ndina, Nego, Nelson, Nepo, Oti, Rango, Roni, Ruben, Paima, Paua, Rahman, Ramang, Rango, Rina, Rode, Rudar, Rusdianto, Rustam, Rusu, Rusumaa, Sabo, Saharuddin, M. Sainuddin, Saleh Samrut, Samsuddin, Sardi, Sardin, Sarfin John, Sarif, Sarman, Sihi, Syahrun, Syarmin R., Sony, Suadi, Sudima,

Sudirman, Suhadi, Suri, Syukur, Thayeb, Tungge, Uda, Udin, Umbalo, Wastin, Yaso, Yeti, Yoksan, Yudas, Yuliana, Yusuf. Thanks to Yustina Manukalo, Waris Pribadi, and Indah Pribadi, who helped type up the lexicon and texts.

I want to thank the scholars who did important and high-quality research which provides the basis for my dissertation. Among those whose work I found especially helpful are: (1) On Hebrew: Francis Andersen, Dean Forbes, Randall Buth, Robert Longacre, John Cook, Sebastiaan Floor, Andrew Fox, Jean-Marc Heimerdinger, Cynthia Miller, Basil Rebera, and Christo van der Merwe. (2) On Austronesian languages: Suree Andersen, Ann Cooreman, Nikolaus Himmelmann, David Mead, Phil Quick, Malcolm Ross, and Fay Wouk. (3) On linguistic theory: Talmy Givón, Kathleen Callow, Joseph Grimes, Knud Lambrecht, and Mildred Larson.

I want to thank Dean Forbes for introducing me to the R statistics program, and Marie South for unstinted assistance with statistics, above and beyond the call of duty.

I want to thank the organizations which enabled me to work and study in the Moronene region of Southeast Sulawesi: Hasanuddin University, the Department of Education and Culture, the Department of Social Affairs, the Department of Home Affairs, the government of Southeast Sulawesi, the governments of Buton district and Bombana district, the governments of Rumbia subdistrict, Rarowatu subdistrict, and Poleang Timur subdistrict.

I want to thank my colleagues in the Summer Institute of Linguistics who provided encouragement, advice, and direction: Ron Snell, Wyn Laidig, Jim Swartzentruber, Larry Jones, Greg Gammon, Mark Taber, René van den Berg, Scott Youngman, David Mead, Phil Quick, Chip Sanders, and Joel Garrison.

I want to thank those who gave financial support, especially Mickey Brussow, Rolando González, and others who administered the SIL International's Corporation Academic Scholarship Fund.

I want to thank many friends in Australia, Thailand, the USA, and elsewhere who have given support, prayers, encouragement, communication, and many other types of help so that we could work and do research in Indonesia, as well as study in the USA.

I thank my family, especially my father, Francis Andersen, whose example and encouragement has always inspired me by his application of linguistics to biblical languages, by his painstaking scientific approach to language, his perseverance, and his appreciation and encouragement of other scholars. Thanks to my mother, Lois Andersen, as well as to John, Deborah, Sean, Vivienne, and Erin, for the good times we had together in Pasadena, and for so much else.

I give heartfelt thanks to my wife, Suree, and daughters Lalita and Tiria. Suree has been patient and encouraging over many years, urging me to focus and get it finished. She and the girls have usually been by my side as we have travelled to many places in the process of working on this Ph.D. They have been uncomplaining about the hundreds of hours I have spent in front of the computer, and the times I have left them behind as I went off to villages or libraries in search of more information. This dissertation is their achievement as well as mine.

Above all, thanks be to God!

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LIST OF ABBREVIATIONS

A	Actor
ABS	Absolutive
AC	Anaphoric continuity
Act.	Active
ADV	Adverbial
AF	Action focus
AGT	Agent
Anaph.	Anaphoric
Anti.	Antipassive
APPL	Applicative
ART	Article
Aux	Auxiliary
avg	Average
BEN	Benefactive
BH	Biblical Hebrew
CAUS	Causative
CL	Clause
CMS	Commiserative
Coh	Cohortative
COMP	Complement

COMPL	Complementizer
Cont.	Continuity
CTR	Contra-expectation
DEF	Definite
Dev.	Deviation
Dif.	Difference
Diff	Different
DO	Direct object
e	Exclusive
EBH	Early Biblical Hebrew
et	וְ/וְ-
Func.	Functional
FUT	Future
GE	Genitive
i	Inclusive
IMPV	Imperative
IN	Initial
InfA	Infinitive absolute
INT	Intransitive
Inv.	Inverse
INST	Instrumental
IV	Inverse
KITLV	Koninklijk Instituut voor Taal-Lande en Volkenkunde
KJV	King James Version

L	Left
LG	Ligature
LOC	Locative
m	Masculine
Med.	Medium
n	Number
NASB	New American Standard Bible
NEG	Negative
NF	Nonfinite
NIV	New International Version
NOM	Nominative
nomin.	Nominal
NP	Noun phrase
NT	New Testament
O	Object
OBJ	Object
ORD	Ordinal
O12	First or second person object
O2	Second object
p	Plural
Pas	Passive
PAT	Patient
Pers.	Persistence
PC	Principal component

PCA	Principal component analysis
PI	Person indicator
PL	Plural
PN	Proper noun
POS	Possessive
prep	Preposition
PRF	Perfective
pro	Pronominal
R	Right
RD	Referential distance
RE	Realis
Reactiv.	Reactivated
REC	Reciprocal
RED	Reduplication
REL	Relativizer
RES	Resultative
RRD	Raw referential distance
RV	Revised
S	Subject
s	Singular
STV	Stative
SUB	Subordinate
SUBJ	Subject
S12	First or second person subject

Tab.	Table
TCA	Topic-comment articulation
TOP	Topic
TP	Topic persistence
U	Undergoer
Und.	Undergoer
UV	Undergoer voice
UVV	Undergoer voice verb
V	Verb
vs	versus
V. Low	Very Low
w.	with
1	1 st person
2	2 nd person
3	3 rd person

INTRODUCTION

In this introductory chapter, I will present the research problem in terms of how it relates to some unsolved problems in the study of Biblical Hebrew. I will state briefly the purpose, goal, and significance of this study, the central research issue, the research questions, and other related information.

Explanation of Syntactic Variants

In every language, there are many different ways of saying the same thing. For one particular event in the real world, there are many different choices of clauses to describe it. Even if we disregard possible different choices of vocabulary, there are many purely syntactic choices that give rise to a variety of clauses that mean virtually the same thing. Such clauses have the same truth conditions, the same propositional semantics, but there are other aspects of meaning in which they differ.

Much research has been devoted to analyzing what aspects of meaning are coded by alternative clause types that have the same truth conditions. One approach to such questions is that of discourse pragmatics.¹ In the words of Knud Lambrecht, “discourse pragmatics is concerned with the question of why one and the same meaning may be expressed by two or more sentence forms” (1994:5). Such differences may be used by the author to send signals to the receptor to aid him or her in drawing appropriate inferences concerning the author’s intent. In Biblical Hebrew, such clause variants can be caused by a number of syntactic factors including choice of verb conjugation, choice

¹ Another very different approach is that of transformational grammar (Chomsky 1957).

of word order, and different ways of coding the subject and object. A brief selection of the explanations for these choices that have been put forward in the literature is presented below.

Explanations of Variant Verb Forms

Much effort has been devoted to explaining the difference between the *wayyiqtol* and *qatal* verb forms in Hebrew. In some contexts, they seem to have distinct meanings, but in other contexts, their meanings seem to overlap, as each of them can be translated as past tense. Similar efforts have been made to clarify the difference between *yiqtol* and *weqatal*, both of which can often be translated as future tense. A number of different approaches have been taken to attempt to clarify the semantic or pragmatic difference between the two pairs of forms and what they may signal concerning the author's intention.

Tense, Aspect, and Modality

Many scholars have used concepts of tense or aspect to explain the difference. Some maintain that the difference between the two pairs of forms is primarily an aspect distinction (Driver 1892; Endo 1996:296, 320-322; Eskhult 1990; Isaksson 1987).

Other scholars maintain that each form conveys a combination of tense and aspectual meanings (Rogland 2003:8-14) or a combination of tense, aspect, and modality (Cook 2001; Gentry 1998:39; Waltke and O'Connor 1990:476-562; Warren 1998:64-100).

Foreground versus Background

Robert Longacre maintains that *wayyiqtol* is used for foreground in narrative, whereas *qatal* is used for background (1989:65-82). Similarly, in predictive discourse, *weqatal* is used for foreground and *yiqtol* is used for background (1989:106-107).

A number of other scholars have adopted this view, for example, Alviero Niccacci (1990; 1997). But some have objected that Longacre's classification is too clear-cut, since *qatal* can be used for both foreground and background (Bailey and Levinsohn 1992:200-204; Heimerdinger 1999:221-240). John Cook (2004) presents evidence supporting the claim that *wayyiqtol* is semantically marked as foreground, but with regard to *weqatal* he claims, "its utilization for backgrounded clauses...alongside its appearance in foregrounded expressions precludes an identification of foregrounding as a discourse-pragmatic property of the form" (2004:269).

Continuity versus Discontinuity

According to Talmy Givón, in Early Biblical Hebrew *wayyiqtol* is used with the function of topic continuity, whereas *qatal* is used for topic-shifting (1977:198-218).² According to Randall Buth (1992), a key distinction in the Hebrew verbal system is that *wayyiqtol* signals thematic continuity, whereas *qatal* signals discontinuity. Some researchers express a similar idea in terms of paragraph boundaries, namely that *qatal* is used to signal paragraph onset or paragraph close, both of which are points of discontinuity in the text (e.g. Heller 2004).

Tight Linkage versus Loose Linkage

According to Harald Baayen (1997), a key distinction in the Hebrew verbal system is that *wayyiqtol* signals tight linkage, whereas *qatal* signals loose linkage. Tight

² Givón uses the term IMPERFECT for *wayyiqtol* and PERFECT for *qatal*.

linkage means that the new information in a clause “is relevant to the currently most salient knowledge in the common ground established by the participants in a communicative event” (1997:249). Loose linkage indicates that new information “is not intended to be tightly linked to the current topic” (1997:249).

Explanations of Variant Word Orders

Different suggestions have been made to explain variant word orders. Much of the attention has been on the function of clauses with fronted nominal subjects or other fronted constituents (e.g. X-*qatal*), in contrast to those with postverbal subjects.

Topicalization and Focus

Katsuomi Shimasaki claims that the fronted position signals focus (2002:42).³ Others claim that fronting has two possible functions: to signal either topicalization or focus (Bailey and Levinsohn 1992:188; Buth 1990:15-16; Floor 2004:187; van der Merwe, Naudé, and Kroeze 1999:345-347).

Foreground versus Background

According to Buth, “The characteristics of Foreground and Background in narrative directly affect the parameters of word order” (1990:10). In particular, he claims that “vav hahipuk [i.e. *wayyiqtol*] clauses and VS order mark the Foreground...in Biblical narrative” (1990:12). His complementary claim is that “clauses where a non-verb begins a narrative clause...mark the clause category of Background” (1990:12). The more traditional category of “circumstantial clause,” which also involves the insertion of a clause-level constituent before the verb, is described by Francis Andersen as a clause

³ Shimasaki’s definition of focus differs significantly from those of the other scholars cited. See Holmstedt (2003) for a critique of Shimasaki’s approach.

which “interrupts the sequence of events, and generally reports an event contemporaneous, concomitant, or ‘circumstantial’ to the main stream” (1974:77). This can be regarded as a type of background clause.

Explanations of Variant Coding of Subjects

The clause subject can be coded as a noun or noun phrase, as a free pronoun, or by the affixation of the verb. A number of suggestions have been made with regard to possible functions of some of these alternatives.

Continuity versus Discontinuity

Some scholars suggest that nominal coding of the subject can mark discourse discontinuity. In the words of L. J. de Regt, “overspecifications of previously-mentioned participants...mark the shift to a new paragraph” (1999:59).

Contrast

Some scholars suggest that coding of the subject by an independent pronoun can signal contrast or antithesis (de Regt 1999:57-58; Waltke and O'Connor 1990:295).

Explanations of Variant Coding of Objects

Objects can be unmarked, marked with the particle נִשׁוּׁן / נִשׁוּׁן, or suffixed on the verb. The main effort of scholars has been to try to explain the factors determining the occurrence of נִשׁוּׁן.

Definite versus Indefinite

It is observed that indefinite nouns do not occur with the particle **兮**, whereas with definite nouns, “**兮** is very common, but seldom necessary” (Jouon and Muraoka 1991:445; cf. Waltke and O’Connor 1990:162).

Individuation and Affectedness

According to Randall Garr, “the grammatical definiteness of the object does not fully account for *ʔet*...Rather, *ʔet* is sensitive to the individuation of the object” (1991:119n3). Besides this “*ʔet* may also signal the extent to which the object is affected” (1991:124).

Prose versus Poetry

The frequency of occurrence of definite nominal objects without **兮** is explained in relation to genre; the more poetic a text is, the lower the frequency of **兮** (Andersen and Forbes 1983).

Emphasis

It is suggested that objects marked with **兮** have more emphasis than those that are unmarked (Muraoka 1985:146-158; Waltke and O’Connor 1990:178).

Disambiguation

According to Michael Malessa, **兮** is used relatively frequently in clauses which have nominal subjects with VSO order. He suggests that its function in such contexts is to indicate and distinguish between the syntactic functions of subject and object (2000:153).

Investigating Topicality as an Explanation

I have based the present study on the assumption that for most syntactic variants, no one factor determines the choice. Each variant will exemplify a complicated combination of semantic and discourse-pragmatic features. In the present study, I will investigate one feature that has not received much attention thus far, namely the relative topicality of clause referents. Any results discovered are not intended to diminish the validity of all the insights listed above, but rather to complement them.

In the present study, I assume that one particular discourse function of clauses is to help indicate relative topicality of the referents found in that clause. One particular syntactic feature that signals relative topicality of the actor and undergoer of a clause is voice. I will use an approach to voice that is broader than the traditional distinction between active and passive voice, but will also include antipassive and inverse voices.⁴ I will not limit the investigation to syntactic or morphological voice, but will utilize the concept of functional voice. This entails recognizing that certain topicality patterns are prototypically associated with each of the syntactic voices, and other clause types with similar topicality profiles can be categorized as belonging to the respective functional voice.

I hope to show that an analysis of the functions of Biblical Hebrew clause types in terms of topicality and functional voice will be of benefit in relation to the challenges faced in translating Biblical Hebrew into a wide variety of languages. Hebrew has relatively few morphological distinctions coding tense and aspect. This presents difficulties to those endeavoring to translate from Hebrew into languages with a rich system of tense and aspect distinctions, such as are found in many European languages. This is one reason scholars speaking those languages have done a great deal of research attempting to clarify how such distinctions are coded in Hebrew syntax.

⁴ See definitions of these voices on p. 73.

In a similar way, Hebrew has only two voice categories that are coded by the verb morphology. But many other languages, such as many Austronesian languages, have a richer system of voice distinctions, with perhaps four main voices. It will be helpful to those translating from Hebrew into such languages to clarify whether or not the topicality patterns behind such voice distinctions are signaled by Hebrew syntax.

In order to lay the groundwork for the possible contribution of this approach to translation, the present study applies the research methodology not only to Biblical Hebrew, but also to Moronene, an Austronesian language spoken in Southeast Sulawesi, Indonesia.

Purpose of Study

The purpose of this study is to use measures of topicality to test various hypotheses about the functions of clause types in Biblical Hebrew and Moronene as well as to propose new hypotheses arising from the analysis.

Goal of Study

The goal is to identify factors relating to topicality and functional voice that help determine the choice between different clause types in Biblical Hebrew and Moronene, and hence give a better understanding of which Moronene clause types may be appropriate equivalents for which Hebrew clause types in translation.

Significance of Study

The results of this study will have applications to the development of linguistic theory in relation to discourse analysis. It will also have practical applications in relation to translation theory, and the task of Bible translation. Furthermore, I hope that ongoing research based on the theoretical framework and methodology presented in this

dissertation will lead to a better understanding of how topicality and functional voice influence clause structure in source and target languages, and thereby improve the quality of translations.

Central Research Issue

The problem to be addressed in this dissertation is the classification of Biblical Hebrew and Moronene clause types in terms of topicality patterns and functional voice categories.

Research Questions⁵

1. What is the relative topicality of the core arguments of Biblical Hebrew semantically transitive clause types, as measured by referential distance and topic persistence?
2. How do semantically transitive clause types in Hebrew cluster statistically in terms of topicality patterns and functional voice categories?
3. How do features of constituent order, object marking, and verb conjugation correlate with topicality patterns in Hebrew?
4. What is the relative topicality of the core arguments of Moronene semantically transitive clause types, as measured by referential distance and topic persistence?
5. How do semantically transitive clause types in Moronene cluster statistically in terms of topicality patterns and functional voice categories?
6. How does an understanding of Hebrew and Moronene topicality patterns affect translation from Hebrew to Moronene?

⁵ See the glossary for explanations of some of the terms used in the research questions.

Scope and Delimitations

In this dissertation, I limit the analysis of Biblical Hebrew to two discourse types, narrative and directive discourse. For each of these I have selected from the Hebrew Bible a reasonably extensive corpus for analysis. Narrative has two subtypes, narrative prose and narrative poetry. The narrative prose corpus I analyzed comprises Exodus 1-19, 1 Samuel 16-31, and Ruth. The narrative poetry corpus I analyzed comprises Psalms 77, 78, 105, 106, 107, Exodus 15:1-18 (Song of Moses and Miriam), Deuteronomy 32 (Song of Moses), Judges 5 (Song of Deborah), 2 Samuel 22, and Habakkuk 3.

The directive discourse corpus I analyzed comprises selections from the books of Genesis, Exodus, Leviticus, Numbers, Joshua, Judges, Ruth, 1 & 2 Samuel, 1 & 2 Kings. Based on criteria of genre and minimum length, I identify sixty-one separate directive speech units in these books (see Appendix A).

I restrict the analysis of Moronene to narrative prose and poetry. The corpus consists of two poetic narrative texts and four prose folk tales.

I focused the analysis on semantically or syntactically transitive clauses. Some parts of the analysis are restricted to more frequently occurring clause types, those occurring at least nine or ten times in the corpus.

My main line of investigation in this dissertation is defined by the central research issue and research questions above. This investigation will involve detailed statistical analysis of Hebrew clause types in narrative and directive discourse, and somewhat less detailed statistical analysis of Moronene clause types in narrative. In addition to this, at a number of points in the dissertation I will include supplementary investigations of issues that arise out of the results of the main investigation. These supplementary investigations are sometimes motivated by the need to explore further some results that are difficult to explain, or else to apply some results to the issues that have been discussed in the work of other scholars. These supplementary investigations are meant to illustrate some relevant

applications of the present study to various issues. As such, they are not as detailed or comprehensive in scope as the main investigation.

Summary of Dissertation

This dissertation is divided into four parts. Part I deals with the theoretical framework. In Chapter 1, I review the literature most relevant to the investigation of topicality in Biblical Hebrew. In Chapter 2, I outline the methodology used in the research, focusing on how the methodology is applied to Biblical Hebrew narrative and directive discourse. I present several hypotheses relating to the adequacy of the theoretical categories used.

Part II consists of the analysis of Hebrew clause types. In Chapter 3, I analyze the topicality patterns of frequently occurring Hebrew clause types by using principal component analysis. I present the results in charts, which show how clause types with similar topicality patterns cluster together. For each cluster of clause types, the statistics showing the topicality patterns are presented and discussed. This is done separately for clause types found in the narrative corpus and those found in the directive discourse corpus.

In Chapters 4, 5, and 6, I analyze topicality patterns of Hebrew clause types by using a slightly different approach. Instead of restricting the analysis to clause types occurring ten times or more, as was done in Chapter 3, I group together both frequent and infrequent clause types sharing particular syntactic features to form amalgamated clause types. For each amalgamated clause type, I present and discuss the statistics showing the topicality patterns. In Chapter 4, the amalgamated clause types are based on different ways of marking the object. In Chapter 5, the amalgamated clause types are based on different constituent orders, combined with the feature of whether the subject and object is nominal or pronominal. I also present a supplementary discussion of the function of

subject fronting and object fronting. In Chapter 6, the amalgamated clause types are based on the verb conjugation, combined with the feature of whether the verb is morphologically active or passive.

Part III consists of the analysis of Moronene clause types. In Chapter 7, I give a brief introduction to Moronene syntax, and discuss various suggestions in the literature as to how to analyze voice and topicality in Moronene. In Chapter 8, I spell out adjustments to the methodology needed to make it appropriate for Moronene clause types. Then in Chapter 9, I apply the procedures used in Chapter 3 to frequently occurring Moronene clause types. I analyze the clause types using principal component analysis, I generate a chart showing clusters of clause types, and I present and discuss the statistics showing the topicality patterns for each cluster.

In Part IV, I compare the results of the separate analyses of Hebrew and Moronene. In Chapter 10, I match the clause type clusters identified for Hebrew in Chapter 3 with those identified for Moronene in Chapter 9. For each Hebrew clause type cluster, I identify the Moronene clause types that are most similar to it in their topicality patterns. These are given the label “matching clause types.” Other Moronene clause types are referred to as “non-matching clause types.” A comparison is then made of a Biblical Hebrew text and its translation into Moronene to see to what extent particular Hebrew clause types are translated by Moronene matching clause types. This comparison is used to identify clauses already translated into Moronene that may need revision. In Chapter 11, I describe how Moronene translators were asked to evaluate the naturalness of clauses in which non-matching clause types and rare clause types were used in the Moronene translation. Those that were felt to be unnatural were revised. I discuss various categories of clauses that needed to be revised and those that were not revised.

In the Conclusion, I summarize the results of the analysis of Hebrew in Part II, the analysis of Moronene in Part III, and the comparison of Hebrew and Moronene in Part IV. In addition, I present a number of suggestions for further research.

PART I

THEORETICAL FRAMEWORK

In Part I, I present the theoretical framework for the present research. Chapter 1 reviews the literature most relevant to the investigation of topicality in Biblical Hebrew. In Chapter 2, I lay out the methodology used in the dissertation, focusing on how the methodology is applied to a classification of clause types in terms of topicality and functional voice in Biblical Hebrew narrative and directive discourse. I present several hypotheses relating to the adequacy of the theoretical categories I have adopted.

CHAPTER 1

APPROACHES TO TOPIC IN BIBLICAL HEBREW

In this chapter I will briefly introduce the concepts of topic and topicality. The main focus will be to review previous research that has applied these concepts to Biblical Hebrew.

Approaches to Topic

There are three common approaches to topic and topicality in the linguistic literature. The first is concerned with clause or sentence topic. This involves the identification of one or more entities or expressions as the topic of a clause or sentence. Some representatives of this approach include Knud Lambrecht (1994) and Sebastiaan Floor (2004).

A second approach is concerned with the discourse topicality of referents. Topicality in this sense is understood in terms of frequency of mention. A referent of high topicality is one that is mentioned very frequently with minimal gaps between one mention and the next. A referent of low topicality is one that is mentioned infrequently, with large gaps between each mention. The highest topicality would be if a referent were mentioned in every single clause over a particular stretch of discourse. The lowest topicality would be if a referent were mentioned only once in the discourse. Some representatives of this approach include Russell Tomlin (1986) and Talmy Givón (1983, 1994b).

A third approach focuses on discourse topic. This involves the identification of one or more topics, often expressed as propositions, in relation to a larger stretch of discourse. Some representatives of this approach include Gillian Brown and George Yule (1983:68-124) and Kathleen Callow (1998:217-228). This third approach is not as relevant to the present study as the first two approaches.¹

Topicality of Referents in Biblical Hebrew

In the following sections, I will review a number of studies that have investigated discourse topicality of referents in Biblical Hebrew. I will also evaluate the appropriateness of each approach as a model to be adapted in the present research.

Heimerdinger on Topical Importance

Jean-Marc Heimerdinger (1999) studies topic in ancient Hebrew narratives, along with a parallel interest in focus and foregrounding. His main concern with regard to topic is to determine the relative topical importance of topical elements in a story. He uses two main techniques to discern this. First is the identification of a story title. Heimerdinger states, “The ‘title’ establishes the participants mentioned as the topical participants and the action as the topical action....At discourse level a discourse topic which refers to specific topical entities must be identified” (1999:106).

The second technique involves the computation of cumulative referential density, which involves counting the number of mentions of topical entities in each paragraph. This method is adopted from Tomlin (1986:42-44). Heimerdinger describes the method as follows:

¹ For a survey of various approaches to topic in relation to the analysis of topic in Biblical Hebrew, see Floor (2004:20-72).

The text is divided into paragraph units and the topical entities are identified in each clause. For every clause, the number of references to the entity at a given point of the paragraph is worked out. This number is divided by the number of clauses up to that point in the paragraph. A ranking of each topical entity in each clause is established as well as a global ranking of all the entities (1999:108).

The results of the counts are presented in cumulative frequency tables. In addition, he gives tables listing the syntactic realization of the topic entities, how many times each one is realized as subject, object, or adjunct.

Heimerdinger illustrates his approach by an analysis of Genesis 22. Some of his conclusions are as follows:

A main topical participant will persist throughout the story and will be found mostly in the grammatical function of S, which corresponds to the main topic having the case role of agent. The repeated occurrence of an entity in a clause with a DO or A [adjunct] function indicates that the entity is a secondary topical entity, either a secondary participant or a prop....

When a predication merges the main topical participant and another topical entity into one centre of attention, the main topical participant increases in topicality. This is usually happening in transitive clauses with the main topical participants as Actor and the other topical entity as Undergoer (1999:126).

If Heimerdinger's method were applied to investigate the questions relevant to the present research, a number of problems would arise. Heimerdinger does not spell out a procedure for identifying titles in stories, nor does he spell out a clear procedure for identifying paragraph boundaries. He acknowledges that the "identification of paragraphs may present difficulties in some written stories" (1999:108). It happens that the text he chose to analyze, Genesis 22, has a clear title and clear paragraph boundaries. Application of the method to larger stretches of discourse without clear guidelines would likely result in arbitrary or inconsistent analytical decisions.

Another problem with the method relates to the units used for quantifying topicality. The present dissertation is concerned with the relationship between topicality

and clause types, whereas Heimerdinger's method measures topicality at paragraph level. The cumulative frequency measures for clauses are likely to pattern differently depending on whether a clause is near the beginning or end of a paragraph. This factor would complicate the analysis.

Fox on Coding of Participants

Andrew Fox (1983) represents a quantified study of topicality in Biblical Hebrew focused on the coding of participants by various nominal and pronominal syntactic devices. He assumes that "these devices hierarchize along a continuity/predictability scale"² as set out below:

MOST CONTINUOUS

- zero anaphora
- unstressed/clitic pronouns (verb agreement)
- independent/stressed pronouns
- R-dislocated DEF-NP
- DEF-NP
- L-dislocated DEF-NP
- passivized (subject) NP
- Y-movement
- indefinite NP
- cleft/focused/contrasted NP

LEAST CONTINUOUS (1983:219).

Fox uses three measures of topicality: (1) referential distance, which is defined as: "The distance, in number of clauses, between the last *prior* mention of a referent in the register and the current appearance that is being counted." (2) decay (persistence), which is defined as: "The length of the unbroken chain, in terms of number of clauses, through which the referent remains an argument of the clause *after* the instance being counted." (3) potential interference, defined as: "The "presence vs. absence of other referents in the

² In this and all other quotations, the italics are original.

immediately preceding discourse, if they are referents that are compatible with the predicate in terms of selectional restrictions" (1983:220).

Fox's research is quite relevant to the questions addressed in the present dissertation. His focus, however, is slightly different: he is focusing on the nominal/pronominal coding of topical entities, whereas I am focusing on clause types as a whole, in which the nominal/pronominal coding is only one element.

Fox's paper has many tables and graphs giving the values of these variables for each of the devices on the continuity scale. It would be difficult to summarize his findings as a whole. Since his referential distance variable is defined the same way as in the present study, it is the most useful basis of comparison. Because the way he defines his syntactic devices is quite different from the way I have defined my clause types, most of our measures are not comparable. Some similar devices are defined differently. For example, Fox's zero anaphora of direct object (1983:229) is equivalent to my implicit undergoer clauses (see Chapter 4), but he excludes unidentifiable undergoers and this affects the results. Fox identifies fronting of objects with Y-movement (contrastive topicalization), stating, "the OV word-order for objects in EBH is always a contrastive, localized referential device, and thus fully equivalent with Y-movement" (1983:226). This ought to be equivalent to my OV clauses (see Chapter 5), but the actual example he gives of OV word order is as follows:

*me-'eleh nifridu 'iyey hagoyim...[Gen. 10:5]
from-those split-they islands-of the-gentiles
and from those islands of the gentiles separated* (1983:226).

The fronted constituent in this clause is not an object but rather a prepositional phrase. This suggests that Fox may be defining so-called OV word order to include the fronting of other non-subject constituents besides objects. Such constituents may well have different patterns than objects. This means that our results are not comparable for this device.

Fox based his analysis on the clauses in Genesis 1-41, which is predominantly narrative. In Chapters 4 and 5, some of Fox's results are compared with the results of the present methodology applied to Biblical Hebrew narrative.

Givón on Clause Types

Talmy Givón is the originator of the methodology used in the present study and in a number of works he has applied the concepts involved to Hebrew. In Givón (1977), he investigated SV versus VS clauses in different parts of the Hebrew Bible. He showed that SV syntax is associated with topic-shift. He calculated the percentages of various clause types that were used for continuity functions (no change of topic) and various other functions such as topic-shift. Some of the results he found in relation to the anterior use of the perfect (*qatal* in my terminology) are summarized in Table 1.

TABLE 1
**FUNCTIONS OF ANTERIOR PERFECT IN GENESIS AND
2 KINGS**
(Adapted from Givón 1977:206, 214)

Function	Genesis		2 Kings	
	Score	% of ANTERIOR	Score	% of ANTERIOR
ANTERIOR alone	-	-	17	9.8%
TOP-shift-SUBJ	40	27.2%	66	38.4%
TOP-shift-OBJ	38	25.6%	16	9.2%
RELATIVE CL.	38	25.6%	49	28.5%
ADV-CL/V-COMP	24	16.2%	20	11.6%
WH-QUESTIONS	9	6.6%	4	2.5%
total ANTERIOR	149	100%	172	100%

The high proportion of perfect verbs used for topic-shift is in sharp contrast with the functions of imperfect (*wayyiqtol* in my terminology). He found that *wayyiqtol* was

not used for topic shift, but rather a high proportion of use was for the continuity function (79% in Genesis and 82.6% in 2 Kings (Givón 1977:204,214)).

In later works Givón suggests (1994a:18-19, 1995:88-89) that the object-fronting clause in Early Biblical Hebrew is a typical word-order inverse construction. He explains:

As in all other object-topicalizing clauses in the language, the subject in this clause is post-posed, precipitating the characteristic **OVS order** of the inverse. The variant word-order never occurs in the unmarked preterit clause, the most common direct-active clause type in narrative. Word-order in preterit clauses is invariably **VS(O)** (1994a:18, emphasis original).

Givón uses the term “proximate,” which is associated with syntactic inverses, to explain the contrast between these constructions. In the preterit VSO clause, he states that “the subject-agent is topical (‘proximate’)” (1994a:19). In contrast to this, “In the perfect-marked active-direct clause with a topical (‘proximate’) agent/subject, the unmarked word-order is SVO. The OVS-ordered inverse now contrasts with that unmarked order” (1994a:19). He makes an additional observation with regard to the four examples he cites: “Characteristically, the SVO-ordered active-direct...is **paragraph initial**, while all the topic-switching OV(S) inverses...are **paragraph medial**” (1994a:19, emphasis original).

Givón (1994b) represents a collection of studies of various languages using measures of referential distance and topic persistence to classify different clause types using functional voice categories (these concepts are explained in detail in Chapter 2). Because Givón (1994b) represents a tested methodology focusing on measuring topicality in relation to clause types, it represents the approach that best suits the needs of the present study. A detailed description of how Givón’s methodology has been adapted to the present research is given in Chapter 2.

Myhill and Xing on Patient Fronting

John Myhill and Zhiqun Xing (1993) take issue with Sun and Givón's (1985) interpretation of Fox's (1983) results with regard to object fronting in Hebrew. Besides reinterpreting Fox's results, they also examine object-fronting clauses in Genesis. They make the following claim:

It is also not the case that Patient verb constructions...can generally be characterized as "a mere localized topic-switching device, commonly bringing back into the register a topic that was mentioned only 2-3 clauses before," as Fox claims. Our own count of all 116 OV constructions in Genesis show that the objects have an average RD of 12.45; Sun and Givón's RD figure of 2.50...is based on only six tokens (1993:32).

In contrast to Sun and Givón's claim that Patient verb constructions in Hebrew are always contrastive, Myhill and Xing state, "HALF of the Hebrew Patient-verb constructions do not have a 'contrastive/emphatic' function by any reasonable understanding of this term" (1993:33). With regard to topicality, Myhill and Xing claim that,

topicality, as measured by RD, is not relevant to the position of the object in Hebrew. A text count of the entire book of Genesis found that preverbal objects have an average RD of 12.45 (N=116), while postverbal objects have an average RD of 12.46 (N=1094) (1993:44).

Myhill and Xing claim that the function of patient fronting in Hebrew is to move the verb into second position. In Chapter 5, I will discuss how the results of my study relate to the conflicting claims of these scholars.

Sentence Topic and Focus

A number of scholars have analyzed Biblical Hebrew in terms of clause or sentence topic. A number of theoretical approaches have been used. Randall Buth uses the theoretical framework of functional grammar. Others have adopted Lambrecht's theory of information structure in relation to topic and focus.

Buth on Contextualization Constituents

Randall Buth defines topic as “a constituent that is marked in order to serve as a frame of reference for relating a clause to its context” (1993:3). In the Hebrew examples he cites, the marking is signaled by the fronting of a clause constituent to clause-initial position before the verb. He prefers to use the term “Contextualizing Constituent,” because “many fronted Subjects are not really expressing the topicality of that constituent but relate to the overall clause structure and the time relation of the clause to its context” (1993:11).

Buth suggests a number of functions of such marking of a constituent as contextualizing. First is “a Discontinuity in action or structure of the story” (1993:7). This may occur at the beginning of an episode, or where there is an event outside the sequential main-line of the story. In Buth’s words, it “is related to non-sequentiality and Backgrounding” (1993:11).

Another function he calls “Comparative Topics,” in which “Topic marking breaks-up the time continuity of the story as well as the Topic continuity and has contrastive Focus in addition” (Buth 1993:8). He gives Genesis 4:3-5 as an example. I cite part of the passage below.

And the LORD had regard for Abel
and for his offering;
but for Cain and for his offering
He had no regard (Gen. 4b-5a, NASB)

וַיְנִשְׁעֵן יְהֹוָה אֶל־חَبֵל וְאֶל־מְנַחָּתוֹ
וְאֶל־קַיּוֹן וְאֶל־מְנַחָּתוֹ לֹא שָׁעַת

Buth analyzes the fronted constituent **וְאֶל־קַיּוֹן וְאֶל־מְנַחָּתוֹ** in verse 5a as Contextualizing Constituent/Focus. He states, “Because such comparisons usually imply some kind of contrast, I assume that there is usually a portmanteau with Focus function” (1993:9).

A third function he calls “Dramatic Pause,” in which Contextualization structures, implying non-sequentiality, occur in contexts in which “the semantics of the events make

it clear that positive temporal progression is taking place" (Buth 1993:12). He gives Genesis 19:23-25 and Esther 7:6-10 as examples. Buth claims that the "mis-match of form and function becomes reasonable when we consider that this point in the story may have been a dramatic climax for the author....this is a 'slow motion' technique for dramatic effect" (1993:12).

Buth is aware of the problems caused by using the label "topic" for a grammatical structure that has multiple functions, not all of which signal topicality. In order to clear up possible conceptual and terminological confusion, one needs to have clear definitions for all the theoretical concepts involved. These are provided by the theoretical framework of Lambrecht.

Lambrecht's Definitions

A couple of scholars have applied Knud Lambrecht's analysis of topic and focus at sentence level to Biblical Hebrew. I will not give a detailed description of Lambrecht's theory,³ but will simply present his definitions of important information-structure concepts that I will adopt in this dissertation. Lambrecht gives the following definition of topic:

A referent is interpreted as the topic of a proposition if in a given discourse the proposition is construed as being about this referent, i.e. as expressing information which is relevant to and which increases the addressee's knowledge of this referent (1994:131).

Lambrecht carefully distinguishes between the above definition, which relates to a proposition, and the way such a topic is coded in a clause. For the latter he uses the term "topic expression," which he defines as follows: "A constituent is a topic expression if the proposition expressed by the clause with which it is associated is pragmatically construed as being about the referent of this constituent" (1994:131).

³ See Floor (2004:31-39) for a summary of Lambrecht (1994).

One of the conditions that must be fulfilled in order for a referent to be eligible as a topic is that it must be “a matter of standing current interest or concern” (Strawson 1964:97 as quoted in Lambrecht 1994:119). This is related to the activation status of referents. Lambrecht (1994:94) distinguishes three activation states for referents or concepts in discourse and cites the definitions of Chafe :

An active concept is one that is currently lit up, a concept in a person's focus of consciousness. A semi-active concept is one that is in a person's peripheral consciousness, a concept of which a person has a background awareness, but which is not being directly focused on. An inactive concept is one that is currently in a person's long-term memory, neither focally nor peripherally active (Chafe 1987:25).

In Lambrecht's analysis of information structure, the concept of focus is complementary to that of topic. Focus is defined as “the semantic component of a pragmatically structured proposition whereby the assertion differs from the presupposition” (1994:213). The focus is made up of focal elements, which are defined as follows: “A semantic element which is part of the focus component of a pragmatically structured proposition will be said to be IN FOCUS or FOCAL” (1994:214). The focal elements are realized in a sentence in the focus domain, which is defined as: “The syntactic domain in a sentence which expresses the focus component of the pragmatically structured proposition” (1994:214).

This definition of focus depends on the concepts “assertion” and “presupposition,” which Lambrecht defines as follows: The pragmatic presupposition is: “The set of propositions lexicogrammatically evoked in a sentence which the speaker assumes the hearer already knows or is ready to take for granted at the time the sentence is uttered.” The pragmatic assertion is: “The proposition expressed by a sentence which the hearer is expected to know or take for granted as a result of hearing the sentence uttered” (1994:52).

Lambrecht defines three focus structures, which differ in terms of their focus domain. (1) Predicate-focus structure is a sentence form “in which the predicate is the focus and in which the subject (plus any other topical elements) is in the presupposition.” (2) Argument-focus structure is a sentence form “in which the focus identifies the missing argument in a presupposed open proposition.” (3) Sentence-focus structure is a sentence form “in which the focus extends over both the subject and the predicate (minus any topical non-subject elements)” (1994:222).

Van der Merwe on Topic and Focus

In a number of articles (1999a, 1999b), Christo van der Merwe promotes the use of Lambrecht’s theoretical approach in analyzing topic and focus in Biblical Hebrew. He gives the following assessment of Lambrecht’s work:

The referents of his pragmatic labels are formulated primarily on the basis of his theory about what takes place during the interchange of information between human interlocutors....In the process he also uses the concepts “topic” and “focus,” since he believes they represent categories of information structure that are applicable across languages....his definitions provide criteria that can be verified more effectively intersubjectively (1999b:179).

Van der Merwe’s main concern is to use Lambrecht’s categories to analyze the function of fronted constituents in Biblical Hebrew clauses. He states his hypothesis as follows:

Fronting is a grammatical signal in BH that reflects the judgement of speakers concerning the cognitive environment of their addressees....[I]t may be interpreted as follows:

- (1) a fronted non-verbal entity is *established as entering a topic relation* with the proposition conveyed by the utterance;
- (2) the fronted non-verbal entity, or an aspect of it, is *in a focus relationship with the rest of the proposition*, i.e. it represents that element whose presence makes the proposition into an assertion

- (3) whenever neither of the above-mentioned relationships is realised, one may expect a type of circumstantial clause that conveys one or other type of background or temporal information (1999a:297).

Van der Merwe (1999b:184) used some of Lambrecht's categories to analyze fronted constituents in Deuteronomy 31 and 32. He classified 77 percent of the fronted constituents in Deuteronomy 31 and 44 percent of those in Deuteronomy 32 as being in a focus relationship with the rest of the proposition, and subdivided them between argument focus and sentence focus. The remaining clauses fell into the categories of "Comparing," "Clearly define poetic pattern," and "Uncertain." The "Comparing" category involves the case where "discourse active entities are compared, contrasted or listed" (1999b:183). Presumably the fronted constituent is a topic expression, since it is discourse active. I will interact with van der Merwe's hypothesis below in Chapter 5.

Floor on Primary and Secondary Topics

Sebastiaan Floor (2004) develops his analysis of topic from the theory expounded in Lambrecht (1994). Floor develops a comprehensive classification of various types of topics and focus structures for Biblical Hebrew. He defines four types of clause-level topic: primary topic, secondary topic, tail topic, and topic frame.

Floor sets forth several heuristic criteria for identifying a primary topic:

1. Primary topic is identifiable,...
2. A primary topic is a referent that has been made discourse active.⁴
3. A primary topic remains active,...[it] is in a chain of at least one occurrence after being activated...

⁴ If one is basing one's understanding of topic on Lambrecht, as Floor is, this criterion is too restrictive. After stating that discourse-active referents are preferred topics, Lambrecht (1994:166) continues, "Less easily interpretable but still acceptable and indeed frequently occurring topic expressions are those with ACCESSIBLE referents." Hence the above criterion ought to be modified to read: "discourse active or accessible/semi-active."

4. Subjects are not always primary topics. Sometimes subjects are part of an all-focus sentence,...
5. A primary topic...is pragmatically more salient than the secondary topic...
6. Primary topics are not always the semantic agent in transitive clauses. In passives, for example, the subject is the primary topic, as the undergoer of the predication (2004:79-80).

Primary topics in Biblical Hebrew have two subtypes. An unmarked word-order primary topic is exemplified by “Pronominal reference to the primary topic, expressed in the verb affix” (Floor 2004:80). It can also be exemplified by “relexicalisation of the subject noun, after the verb, in other words, a VS word-order” (2004:81). Marked word-order primary topic involves the topic being fronted before the verb, or dislocated (2004:83).

Floor sets forth the following heuristic criteria for identifying a secondary topic:

1. Secondary topics are always cognitively identifiable.
2. Secondary topics are always discourse active,...⁵
3. Secondary topics are always part of the comment in topic-comment sentence articulations.
4. Secondary topics tend to be objects and indirect objects within the predication of transitive verbs.
5. Not all objects are secondary topics....[O]bjects that identify or activate discourse-new participants, and also indefinite objects, are not secondary topics.
6. Secondary topics must be accompanied by a primary topic (2004:89-90).

Floor clarifies:

The question can be raised as to whether secondary topics are really topical, because...a secondary topic...is part of the focus structure of the sentence...secondary topics are indeed topical, because they display the

⁵ Following Lambrecht, this ought to be: discourse active or accessible/semi-active.

following topical properties: activation..., information enrichment (the asserted information adds something new to the knowledge of secondary topic referent in the mind of the addressee), and important (even primary participants) in a discourse (2004:89).

Floor's term "tail topic" corresponds to Lambrecht's term "antitopic." Lambrecht describes this as "a lexical topic NP is positioned AT THE END of the clause containing information about the topic referent" (1994:202). In addition, "it has already been referred to in unaccented pronominal form inside the clause which expresses the proposition about the referent" (1994:203).

Floor describes "topic frame" as "a presupposed, topical referent that sets a frame for another topic, normally primary topic....[T]opic frames can be of two types of relationship with the subsequent primary topic: either whole to part, or general to specific" (2004:95).

Floor's clear system of classification of various types of topics is very helpful for establishing a consistent conceptual framework for the analysis of clause topics and I will adapt it and use it at relevant points in this dissertation.

Bailey and Levinsohn on Topicalization

Nicholas Bailey and Stephen Levinsohn (1992) discuss the function of preverbal elements in Hebrew narrative. They claim that,

the positioning of elements before the verb in independent clauses in the Hebrew narrative of Genesis inherently communicates only that the element concerned has been **topicalized** or is in **Focus**....[T]he fronting of an element does **not** specify that the information concerned is backgrounded...or that it is circumstantial, contrastive, antithetical, or chiastic (1992:179, emphasis original).

Their understanding of topicalization is based on a "topic-comment articulation (TCA) constraint" as enunciated by Paul Werth: "semantic material is deployed...so as to

respect the order: Anaphoric-Nonanaphoric" (Werth 1984:220 as quoted in Bailey and Levinsohn 1992:189).

For Bailey and Levinsohn, topicalization can include cases where the fronted element is a new participant. They cite the example of Genesis 3:1a:

Even clauses like 3:1a...in which the fronted element *the snake* has not been identified earlier as a distinct participant, obey the TCA constraint. Because the clause consists of the comment (*was crafty above every beast of the field which YHWH had made*) about the topic (*the snake*), the topic precedes the comment in any case" (1992:192).

This differs from the definitions of topic enunciated by Lambrecht and Floor. Under their approach, Genesis 3:1a would not be classified as topic-comment articulation, but rather as a sentence-focus structure in which the subject is not a topic expression. Bailey and Levinsohn's definition of topic is more inclusive than the one that I will adopt in this dissertation.

Bailey and Levinsohn also claim that "topicalization always indicates a discontinuity in the storyline" (1992:205). Since such fronting of clause constituents can only occur with *qatal*, rather than with *wayyiqtol*, this claim is related to Buth's claim (1992) that *qatal* signals discontinuity. I will touch on this further in Chapter 6.

Reconciling the Approaches

In the present study, I will base most of the analysis on Givón's approach. But in discussing the implications of the results, I will attempt to relate Givón's concept of referent topicality to Lambrecht and Floor's concepts of sentence topic and focus. One problem to be faced in such an endeavor is that Givón and Lambrecht have different definitions of topic. As Lambrecht states:

my notion of topic differs from that of Givón and other linguists (cf. e.g. Givón 1983), who often use the term "topic" to refer to any "participant" in a discourse and who do not draw a principled distinction between

topical and non-topical participants, a distinction which is essential in my own approach (1994:117).

To overcome this problem, I will use the terms “topic” and “having topic status” to refer to Lambrecht’s concept of sentence topic, and the terms “topical” and “topicality” to refer to the discourse topicality of referents as defined by Givón. The term “topic persistence,” however, is used for one of the variables that measure topicality. Lambrecht’s concept of topic is an either/or distinction: either a certain referent is a sentence topic, and a certain constituent is a topic expression, or else it is not. Givón’s concept of topicality is scalar. It can be applied both to referents which function as topic and to those that do not. The expectation is that referents that have topic status will have higher topicality than referents that do not have topic status. One way of understanding this measure of scalar topicality is that it measures the degree to which referents are “a matter of standing current interest or concern” (Strawson 1964:97 as quoted in Lambrecht 1994:119), and hence eligible to become sentence topic.

CHAPTER 2

METHODOLOGY

In the previous chapter, I presented various approaches to topicality in Hebrew. The approach which I have adopted as the basis for the present research is that of Givón (1983, 1994b). The methodology used in this dissertation is based on the methodology found in Givón (1994b), but differs from it in significant respects. In the following sections, I describe and explain the methodology, drawing attention to the places where it differs from Givón's methodology.

Quantitative Measures of Topicality

The two quantitative measures used in Givón (1994b) to investigate topicality are referential distance and topic persistence. These are measured for the agent and patient of each transitive clause.

Referential distance measures the anaphoric gap of the referent. In order to calculate it, one counts backwards through the preceding text from the present occurrence of the referent, clause by clause, until one encounters another clause in which the referent occurs. Referential distance is the distance, as measured in clauses, between the two occurrences of the referent. It can be described as a measure of anaphoric continuity, that is, it measures to what extent a referent has continuity with previous clauses. The minimum score is one, which indicates that the referent was mentioned in the previous clause. In theory, the maximum score could be quite large, depending on how many previous clauses there are in the text. I will refer to this potentially large number as the raw referential distance. If the referent does not occur in the preceding text at all,

because it is a new referent, then one might think the referential distance score should be even larger, perhaps infinity. But as Givón defines referential distance, the maximum possible score is twenty, which is assigned to a referent that occurs twenty or more clauses previously, as well as to a referent that appears for the first time. Givón makes the following remarks with regard to the choice of the value twenty as the upper limit of the referential distance variable:

Since it is impossible to deal adequately with infinity, and since there are grounds for suspecting that the erasable, *short-term* file is the crucial psychological correlate of this measurement, one must impose a maximal integer on topics whose referential gap exceeds certain range. In this study I have chosen to impose that arbitrary upper bounds [sic.] at 20 *clauses* to the left (1983:13).

One problem with the referential distance variable as defined by Givón is that it does not distinguish between reactivated referents, which occurred more than twenty clauses previously, and new referents. This problem will be discussed further below.

Topic persistence measures “the number of times the referent recurs within the next ten clauses following its present occurrence” (Givón 1994a:10). It can be described as a measure of cataphoric importance, that is, it measures how important a referent will be in the following clauses. The minimum score is zero, which means the referent is not mentioned again in the next ten clauses. The maximum is ten, but any score above three is regarded as high.

It is always a challenge to successfully present statistical results in a way that communicates clearly to the reader, so that the underlying pattern can be perceived in the maze of figures. In presenting topicality patterns in terms of referential distance and topic persistence, there is an added complication that the two variables have opposite polarity. That is, a high value for topic persistence indicates high topicality, whereas a high value for referential distance indicates low topicality.

In an effort to make the two measures more commensurate, I will introduce another variable called anaphoric continuity, which represents the transformation of the referential distance variable into a variable of reverse polarity, so that high values of anaphoric continuity correlate with high topicality. The values are set so it has an identical range to topic persistence (0-10). It has twenty-one possible values. It is based on the formula $AC = 10.5 - RD/2$.¹

TABLE 2
ANAPHORIC CONTINUITY

Raw Referential Distance	Anaphoric Continuity	Degree of continuity/topicality
1	10	high
2	9.5	medium
3	9	medium
4	8.5	low
5	8	low
6	7.5	low
7	7	low
8	6.5	low
9	6	low
10	5.5	low
11	5	low
12	4.5	low
13	4	low
14	3.5	low
15	3	low
16	2.5	low
17	2	low
18	1.5	low
19	1	low
>19 (reactivated referent)	0.5	very low
20 (new referent)	0	very low

¹ Thanks to Marie South for helping me devise this formula.

The anaphoric continuity variable also addresses the problem with the referential distance variable mentioned above, namely, that it does not distinguish between reactivated referents and new referents. It may, however, be useful to distinguish these to see if certain clause types tend to be used more with one than the other. Hence these two categories are given different values in the anaphoric continuity variable. A referent with a raw referential distance of twenty or more will be assigned an anaphoric continuity value of 0.5, whereas a new referent will be assigned zero.

While the referential distance scores are used in the initial analysis of clauses, it is the anaphoric continuity values that are used in the statistical analysis. I will also calculate mean referential distance scores so as to be able to compare my results with those of other scholars (Fox 1983; Myhill and Xing 1993) who have applied referential distance measures to Biblical Hebrew.

Selection of Clauses for Analysis

In the following sections, I will discuss the criteria for selection of clauses for the analysis of Hebrew. I will delay discussion of Moronene clauses until Chapters 7 and 8, where the relevant grammatical features of Moronene syntax will be presented.

If one had the time and resources to do a comprehensive study of the relationship between topicality and various clause features in Biblical Hebrew, the following methodology would be suitable: The topicality measures would be calculated for all the participants of every clause in the Hebrew Bible. Then a large number of syntactic features of the clauses would be defined as variables, and the values of these variables would be coded for each clause. Finally, a variety of powerful statistical techniques would be used to find the degree to which each feature or particular combinations of features correlated with various topicality patterns.

Such a comprehensive approach is far beyond the scope of the present study. To make the research task manageable, one needs to choose a limited sample of clauses to analyze. In the words of Cynthia Miller, “The goal in delimiting the corpus for a linguistic study is to arrive at a body of data which is representative, reasonably extensive, and relatively homogeneous” (1996:19). Besides this, one needs to choose a limited set of syntactic features of clauses, which will become the variables to be investigated.

There are two main bases for making these choices. First, one can make educated guesses as to which selection is more likely to give interesting and consistent results. Among other things, this entails trying to reduce the effect of confounding variables. Secondly, one would want to have some continuity with similar research done in other languages.

With regard to the selection of a corpus of clauses to analyze, there are a number of potential confounding variables, the effect of which I want to reduce. It may well be that the dynamics of topicality patterns are different in different genres. There is, therefore, an advantage in analyzing clauses from one genre at a time. For Hebrew, I have analyzed two discourse genres, narrative and directive discourse. The data for each discourse genre will be analyzed separately. For Moronene, the clause corpus is restricted to narrative.

It may be that there were changes in topicality patterns due to the diachronic development of Hebrew. In fact, Givón (1977) uses a diachronic analysis of topicality patterns to prove this very point. For this reason, I will not analyze clauses from biblical books regarded as post-exilic.

With regard to continuity with previous research, in the methodology found in Givón (1994b), the analysis was restricted to prototypical semantically transitive clauses. These can be defined as nonstative clauses with a volitional potent agent and an affected

patient. Some syntactically intransitive clauses may be included, such as those that encode the affected patient as the subject of a passive verb, or as an oblique object governed by a preposition.

There is no theoretical reason why such an analysis could not be done for participants of all intransitive clauses, including equative clauses. However, an attractive aspect of analyzing semantically transitive clauses is that one can analyze the topicality patterns in terms of the relative topicality of the actor and the undergoer. Since that is one goal of the present research, I will only analyze semantically transitive clauses.

Types of Transitive Clauses Selected

One reason for the restriction to prototypical semantically transitive clauses relates to one of the goals of the methodology in Givón (1994b), namely to make valid cross-language comparisons. Hence it was important that the clause selection done for each language used similar criteria. This would not be achieved by simply analyzing all transitive verbs, since languages differ considerably as to what type of processes appear in syntactically transitive clauses. To ensure semantic similarity of the clauses across languages, the studies included in Givón (1994b) used a narrow definition of semantically transitive verbs. As a result, only a relatively small number of the clauses in any text met the criteria, and the sample size was relatively small.

In the present study, I will include a broader range of transitive clauses than those included in Givón (1994b). I will include all syntactically transitive clauses that have a pronominal or nominal object, regardless of the case role of the subject or object. Since I am not restricting my analysis to subjects that have the case role of agent or to objects that have the case role of patient, I will use the macrorole terms actor and undergoer as defined by William Foley and Robert Van Valin. They define actor as “the argument of a predicate which expresses the participant which performs, effects, instigates, or controls

the situation denoted by the predicate,” and the undergoer as “the argument which expresses the participant which does not perform, initiate, or control any situation but rather is affected by it in some way” (1984:29). I will include syntactically transitive clauses with nonvolitional nonpotent actors or non-affected undergoers, including those with experiencer subjects, such as verbs of perception (for example, “see,” “hear”), verbs of cognition, such as “know,” and verbs of emotion, such as “love.”

Another aspect of the approach of the papers in Givón (1994b), is that they define a limited number of clause types for which it is predicted that functional voice distinctions will be particularly relevant. They divide the corpus of semantically transitive clauses into three to five clause types. Some papers define the clause types based primarily on verb morphology. For example, Thomas Payne restricts his quantitative study of voice alternation in Cebuano to “environments for which the alternation...is a true discourse pragmatic option,” namely the alternation between actor-focus and goal-focus clauses “in independent, declarative clauses in the perfective aspect” (1994:320). Others define them according to the constituent order of subject and object. The success of such investigations depends on making a good initial prediction as to what clause features will correlate with functional voice categories.

In my paper “Discourse Functions of Clause Types in Hebrew Narrative Poetry” (D. Andersen 1998), I did a preliminary investigation of three Hebrew clause types. However, my initial predictions as to what clause features to investigate were not so successful. One clause type was defined based on verb morphology, namely the presence of a morphologically passive verb. But the sample size was too small to get a clear result. One clause type was based on constituent order, namely a clause with a fronted object. This was predicted by Givón to be an inverse voice in Biblical Hebrew. The results, however, did not support the prediction. The final clause type was the remainder, which did not fall into either of the other categories.

After the failure of the initial prediction, I defined another clause type based on the presence of an object suffix on the verb. This did show some correlation with inverse functional voice.

The results of this preliminary study were unsatisfactory. There was a lack of consistency in defining the clause types. It seemed that constituent order might be related to functional voice categories, but only one particular constituent order was investigated, namely OV(S). All the other categories such as SV, SVO, VSO, and VOS were lumped together in one category, rather than being investigated separately to see what contrasts there might be. Again, in relation to how the object was encoded, one particular category was isolated, namely verbs with object suffixes. The other three ways of encoding an object in Biblical Hebrew were not investigated separately.

Since it is not yet clear exactly what clause features in Biblical Hebrew might correlate with functional voice categories, I do not make a prediction in the present investigation. Rather I define a relatively large number of clause types using a large number of features. After the initial investigation, doubtless some of these features will be found to be irrelevant to topicality patterns. At that point, clause types that are only differentiated based on the irrelevant features could be lumped together. In this way, it is hoped to identify which clause features are most significant in terms of correlating with different topicality patterns.

One of the disadvantages of defining many clause types is that the number of occurrences of any type is likely to be small. If, however, the sample size of a particular clause type is too small, Givón's methodology will not give meaningful results, since it is based on percentages. It is important, therefore, to increase the sample size as much as possible. Since my aim is to make a systematic comprehensive study, one way of increasing sample size is to place fewer restrictions on the type of transitive clause to be investigated.

The studies of various languages found in Givón's work (1994b) restrict their sample of clauses in various ways. Linda Forrest (1994) excludes clauses occurring in quotations or conversations, whereas I include these, since virtually all directive discourse in Biblical Hebrew are embedded quotations. Most studies restrict the sample to clauses with third person arguments. I, however, will include clauses with first and second-person arguments. This is necessary since so many clauses in directive discourse have second person subjects. Some studies (Jacobs 1994 on Squamish, Hidalgo 1994 on Spanish, Kwak 1994 on Korean) restrict the sample to main clauses, but others make no such restriction. I will follow the majority of studies and include subordinate and embedded clauses.

Even though I am including a larger range of transitive clause types than many other studies, there are some transitive clauses I exclude, namely infinitival clauses, participial clauses, relative clauses, and clauses taking clause complements as objects rather than nominal direct objects. However, I will include clauses where the infinitive absolute is functioning as a main verb. Theoretically, beyond the need for delimitation, there is no reason why such clause types could not be included. I have chosen to exclude them in order to reduce the number of variables needed in defining the clause types, and to reduce the length of this dissertation. My decision to exclude these particular clause types, rather than others, was based on two considerations. The first was frequency: participial clauses, for example, are relatively rare. Therefore it is difficult to get enough of them to be able to analyze them separately. The second consideration is that these clause types are likely to have significantly different topicality patterns than the finite transitive clauses that are included. Relative clauses differ significantly in terms of referential distance, since the relativized constituent almost always has a referential distance of one, since it occurs in the matrix clause the relative clause is modifying. Infinitival clauses differ in that they rarely have explicit subjects.

Types of Intransitive Clauses Selected

Semantically transitive clauses also include two types of syntactically intransitive clauses that have underlying actors and undergoers: passive clauses in which the actor may be oblique or deleted, and intransitive clauses with an actor subject but in which the undergoer is either oblique (governed by a preposition) or else deleted. For both of these it is not straightforward to distinguish between intransitive clauses that are semantically transitive and those that are not.

Passive clauses in Hebrew are signaled by the verb morphology. But not all morphologically passive verbs have an underlying agent. Some verbs in the passive *niph'al* stem formation fall into the category of semantically intransitive verbs. One example is נִשְׁבַּע “to swear.” A clear criterion is needed to distinguish between morphological passives that are semantically transitive and those that are not. I will use the criterion of lexical passivity. A passive stem formation is defined as lexically passive if there exists a corresponding active stem formation with the same root, with essentially the same propositional semantics, differing only in the reversal of subject case roles, in that the subject of the passive stem formation corresponds to the object of the active stem formation. For example, the *niph'al* passive stem נִכּוֹעַ “be humbled, subdued” corresponds to the *hiph'il* active stem הִכּוֹעַ “humble, subdue.” Normally *niph'al* is regarded as corresponding to the *qal* active stem, and in this case there is no attested *qal* for this root. But in terms of my definition, that is irrelevant; it is sufficient that there is a corresponding *hiph'il* stem.² An example of this approach to classifying Biblical Hebrew *niph'al* stem formations can be found in the dissertation of Belinda Bicknell (1984:108-115). A drawback to this definition of lexical passivity is that some passive stems will be eliminated from the study because of gaps in attestation. Even though a corresponding

² This contrasts to the view of Creason (1995:388) that *niph'al* always corresponds to *qal*.

active stem existed in the spoken language, it happens not to be attested in the biblical texts. The elimination of this data is the price paid for using an objective definition.

A similar problem arises in identifying semantically transitive intransitive clauses with oblique undergoers. How do we decide if the nominal constituent governed by a preposition is an indirect object with case role of recipient or goal, or an oblique undergoer? I will use the criterion of lexical transitivity,³ which is defined as follows: A verb stem formation is lexically transitive if it is attested as occurring with a direct object. If a lexically transitive verb occurs with a nominal constituent governed by a preposition with the same case role as the attested direct object, it is counted as semantically transitive. This applies even to verbs with experiencer subjects, in which case the object may have the case role of stimulus rather than patient. An example of this would be the following two clauses with the verb שָׁמַע “listen,” the first of which has a direct object, the second with an oblique object:

and-how 3ms-listen[yiqtol]-1s Pharaoh
 ‘why would Pharaoh listen to me,’ (Ex. 6:12c, NIV)

and-how 3ms-listen[yiqtol] to-1s Pharaoh
 ‘why would Pharaoh listen to me?’ (Ex. 6:30c, NIV)

וְאִיךְ יִשְׁמַענִי פְּרֻשָּׁה

וְאִיךְ יִשְׁמַע אֲלֵי פְּרֻשָּׁה

I can summarize my criteria for clauses to be included in the analysis of Hebrew as follows: All syntactically transitive finite clauses are included except relative clauses and those that take a clause as object. Syntactically intransitive passive clauses are included if the stem formation is lexically passive. Syntactically intransitive active clauses are included if the stem formation is lexically transitive.

³ I am indebted to Payne (1994:323-326) for this concept, which I have defined differently for Hebrew than he has for Cebuano.

Features Defining Clause Types

As mentioned above, I will make a systematic investigation of a large number of clause types, to identify which clause features may be associated with particular functional voice categories. It is important to define clearly the clause types to be investigated.

What features of the clause are likely to be associated with functional and syntactic voice distinctions? The most obvious are morphological voice distinctions in the verb. In Hebrew, these are expressed by seven verbal stem formations (the Hebrew term is *binyan*). Three of these, *qal*, *pi'el*, and *hiph'il*, are active; three others, *niph'al*, *pu'al*, and *hoph'al*, are passive, and one, *hithpa'el*, is reflexive.

However, these morphological distinctions are not adequate to give a comprehensive description of voice in Hebrew. There are two reasons for this. First, there are many verb forms for which the morphological voice does not match the syntactic voice of the clause. This is particularly true of the *niph'al* stem formation, which is often best analyzed as intransitive or middle voice, rather than the passive voice of a transitive verb.⁴ A second reason is that one should not expect an exact match between syntactic voice and functional voice. Such a match is impossible for Hebrew, since there is no morphological category for antipassive or inverse voice. But it may well be that there are certain clause types in Hebrew which are used as a functional antipassive or inverse. In that case, there might be other clause features, such as word order, or the presence of certain grammatical particles, which could be signals of such voices.

If we want to develop a battery of clause types to investigate functional voice, the question is, what additional clause features besides morphological voice should be included to differentiate the clause types? One way to get an idea of what features could be included is to look at studies of functional voice in other languages. A survey of the

⁴ This is why Creason (1995:367) argues that *niph'al* should not be considered as passive.

languages studied in Talmy Givón (1994b), Fay Wouk (2002), and Phil Quick (2002, 2003, 2005) suggests the following features as being possible indicators of functional voice categories: object suffixes (Squamish, Northwest Sahaptin),⁵ oblique objects and agents (Bella Coola, Squamish),⁶ case markers (Pendau),⁷ word order of subject and object (Modern Greek, Korean, Maasai),⁸ word order of agent and patient (Cebuano, Karao, Sasak),⁹ distinctions between imperfective, perfective, and perfect aspect (Modern Greek).¹⁰

Nominal Constituents

Because I will be measuring the topicality profile of the actor and undergoer in various clause types, it is important to include those nominal clause constituents that tend to correspond to the actor and undergoer. Word order of such nominal constituents is often a feature defining functional voice categories.

It is somewhat problematic what abbreviations to use to identify the nominal constituents. If I wanted to be completely consistent in accord with the terminology used in this dissertation, I could identify all the nominal clause constituents as A (actor) and U (undergoer). However, with regard to the purpose of clear communication with the reader, for syntactically active clauses it seems advantageous to use the syntactical function of the nominal constituents rather than the macrorole. For example, if there is a

⁵ Jacobs (1994:125-126), Rude (1994:103-105).

⁶ Forrest (1994:151-153), Jacobs (1994:130-132).

⁷ Quick (2002, 2003, 2005).

⁸ Roland (1994:238, 244-245), Kwak (1994:266-271), Payne, Hamaya and Jacobs (1994:286-287, 305-310).

⁹ Payne (1994:336-337, 340-346), Brainard (1994:372-374), Wouk (2002:296-298).

¹⁰ Roland (1994:238-242).

clause type symbolized as **qatal,S,O**, this is more immediately comprehensible than **qatal,A,U**. In Hebrew syntactically active clauses, the actor is always the subject, and the undergoer is always the object. Hence I shall use S to symbolize the presence of a nominal subject (including free pronouns) in addition to the obligatory morphological subject marking. The obligatory subject marking in the verb morphology is not coded as S. In syntactically active clauses, S represents the nominal actor subject, and O represents the undergoer object. A free pronoun as subject is symbolized by S_{pro}, whereas a pronominal object, whether free or bound, is symbolized as O_{pro}.

In passive clauses, one might symbolize the undergoer subject as S, but there is a complication in Hebrew that some undergoers in passive clauses are marked with **תְּ**/**–תְּ**, and their status as the subject of the clause is a matter of scholarly debate.¹¹ It is beyond the scope of this dissertation to enter into that debate. I will accordingly leave the subject status of the undergoer in such clauses as an open question. It is thus more appropriate for me to use the abbreviation U for the undergoer in syntactically passive clauses.

I will also record the presence of an oblique actor, symbolized as A. Bicknell addresses the question of how to distinguish prepositional phrases designating the actor/agent in Hebrew passives, from other formally identical prepositional phrases designating the instrument or means (1984:42-56). In identifying the actor, I will use her criterion that “agents are identified as possible subjects in analogous actives” (1984:71).

The coding of object will distinguish the different ways objects can be marked in Biblical Hebrew. Objects may be suffixed to the verb, marked with the direct object marker **תְּ**/**–תְּ**, unmarked, or else governed through a preposition (oblique).

I will use the following codes to distinguish between these different nominal clause constituents:

¹¹ See discussion in Saydon (1964) and Zewi (1999).

A	Actor (in passive clauses)
O	Unmarked nominal object
O2	Second object of ditransitive verbs
-Opro	Suffixed object
etO	Object with direct object marker תְּ / תָּ
etOpro	Pronominal object with direct object marker תְּ
etU	Undergoer with direct object marker תָּ (in passive clauses)
prepO	Object governed by preposition
prepOpro	Pronominal object governed by preposition
S	Subject actor (in active clauses)
Spro	Free pronoun subject actor (in active clauses)
U	Undergoer (in passive clauses)
Upro	Free pronoun undergoer (in passive clauses)

Distinctions in Verb Morphology

I mentioned above that aspectual distinctions can play a role in differentiating functional voice categories. This suggests that it would be advisable to include in the definition of clause types the verb conjugations, which embody the basic morphological tense/aspect/mood distinctions in the Biblical Hebrew verbal system, in addition to the morphological voice distinction between active and passive. When the tense/aspect/mood distinctions are combined with the voice distinctions, we end up with the following conjugations (with traditional labels in parentheses):

1. *wayyiqtol* (Waw-consecutive with Imperfect)
2. *qatal* (Perfect)
3. *weqatal* (Waw-consecutive with Perfect)
4. *yiqtol* (Imperfect or Preterit or Jussive [*yiqtol* short form])
5. *yiqtol-Coh* (Cohortative)
6. *wayyiqtol-Pas* (Passive waw-consecutive with Imperfect)
7. *qatal-Pas* (Passive Perfect)

8. *weqatal*-Pas (Passive waw-consecutive with Perfect)

9. *yiqtol*-Pas (Passive Imperfect or Preterit)

These categories do not include the distinctions between the stem formations (*binyanim*). The three active stem formations are grouped together in the first six categories, which are syntactically active, and the three passive stem formations are grouped together in the passive categories. The reflexive *hithpa'el* stem formation is not included, because it is regarded as semantically intransitive. Participles are not included because I have decided to exclude them from the analysis, as mentioned earlier.

The morphological category of jussive (short form of *yiqtol*) is problematic, since it is only morphologically distinctive from *yiqtol* (long form) in a small minority of verbs. Since the number of morphologically distinct jussives is very small, there are insufficient numbers to investigate it as a separate category using the present methodology. Many of the *yiqtol* forms in directive texts are used with jussive force. Rather than exclude the morphologically jussive forms, I have decided to merge them with the *yiqtol* forms for the purposes of defining clause types, since I judge it unlikely that this morphological distinction is strongly related to the topicality of actor and undergoer. This possibility could be investigated in a more comprehensive study.

Person

Another clause feature that needs consideration is the person of the subject and object. Payne remarks,

In the case of first and second person referents, they are in some sense always “on stage” (or “activated” or “topical” whatever terminology you prefer) since in a conversation we are always conscious of the people we are speaking with. Their topicality does NOT depend on number of times they are mentioned in the text (2005:15).

The implication of this is that topicality patterns are likely to be different for clauses with first or second person subjects and objects, as compared to those with third person.¹² Therefore, it is advisable to investigate each set of clauses separately. For this reason, I separate each clause type into four subdivisions as follows:

1. First/second person subject and third person object
2. First/second person subject and first/second person object
3. Third person subject and object
4. Third person subject and first/second person object

Combining the Features

Each clause type is symbolized by a combination of the abbreviations for the nominal constituents and the designations of the verb conjugations as listed above. I use bold print for clause type names. Thus *yiqtol* refers to the verb conjugation in general, whereas **yiqtol** refers to a clause type with *yiqtol* that has no nominal subject and an implicit object. The following are some examples of clause type names and their meanings:

- **weqatal,prepOpro:** Clause type with *weqatal* and pronominal object governed by a preposition.
- **Spro,yiqtol,O:** Clause type with free pronoun subject, *yiqtol*, and unmarked nominal object.
- **qatal-Opro,S:** Clause type with *qatal*, suffixed object, and nominal subject.
- **U,yiqtol-Pas,prepA:** Clause type with nominal undergoer subject, passive *yiqtol*, and nominal actor governed by a preposition.

¹² For a discussion of the relative topicality of first and second person pronouns versus third person pronouns, see Cooreman (1987:93-102).

There are a number of other clause features that are not included in the definition of clause types, there being no clear evidence from other languages suggesting that such features interrelate with topicality. These include: presence or absence of conjunctions, negation, indirect objects, and adverbial constituents. Including these features would cause the number of clause types to increase significantly, and reduce the sample size of each clause type.

One implication of not considering conjunctions, negators, and adverbial constituents in the determination of clause types is that the clause type classification I use in this study does not indicate whether or not the verb is initial in the clause. For example, both of the following clauses are classified as **yiqtol,O**, even though one has a verb initial constituent and the other does not.

‘in all your dwellings you shall eat
unleavened bread’
(Ex. 12:20b, NASB)

בְּכָל מַשְׁבָּתֵיכֶם תִּאֲכִלְיָ מְצֻחָה

‘let him accept an offering’
(1 Sa. 26:19c, KJV)

יְרַח מִנְחָה

This means that the results of this study are not directly comparable with the research of other scholars for whom verb-initial clauses and non-verb-initial clauses (*X-qatal* and *X-yiqtol*) are basic categories of analysis.¹³ But in many cases, a general comparison still could be made. For example, it turns out that almost all the **yiqtol,O**, **yiqtol,etO**, and **yiqtol-Opro** clauses do have a constituent before the verb. Of the 141 such clauses in the corpus, only seven have the verb in initial position. Another ten have an initial w-conjunction, while the rest have initial negators, other conjunctions, or other adverbial constituents. Similarly, out of thirty **qatal,O**, **qatal,etO**, and **qatal-Opro** clauses in the corpus, only two have the verb in initial position.

¹³ Such scholars include Niccacci (1990, 1997), Sailhamer (1990), den Exter Blokland (1995), Talstra (1997) and others.

Determining Clause Units for Counting Purposes

Thus far, I have been discussing which clauses should be analyzed with regard to topicality. Another related question is how the boundaries of the clauses should be defined with respect to counting the next ten clauses for the purposes of topic persistence, or the last twenty or more for the purposes of referential distance. I will use the term clause unit to refer to clauses as used for such counting purposes. I will define a clause unit as a main clause plus certain other types of clauses (mostly subordinate clauses) embedded in or juxtaposed with it. I have included the following types of clauses in the same clause unit as the main clause they modify:

- Relative clauses
- Nominalized clauses that are governed by a preposition, including the direct object marker **וְאַת־אָתָּה**
- Preposed temporal clauses with the verb **וַיְהִי** “and it was” or **וְהִי** “(and) it will be”
- Infinitival clauses
- Participles functioning as nominal elements

Other subordinate clauses besides those mentioned above are counted as separate clause units. Gapped clauses lacking the verb, which are parallel to clauses with a verb, are counted as separate clauses for measuring purposes. For example:

Clause Unit 1:

‘He gave their crops to the grass-hopper’
(Ps. 78:46a, NIV)

וַיִּתְּנ֣וּ לְחַסְיֵל יְבוּלָם

Clause Unit 2:

‘their produce to the locust,’
(Ps. 78:46b, NIV)

וַיִּנְעֶלֶם לְאַרְבָּה

Verbless equative clauses consisting of a nominal subject and nominal predicate are counted as clauses for measuring purposes whether they are main clauses or

subordinate clauses. Non-clausal sentence fragments, which occur as a conversational turn in a dialogue, are also counted as separate clause units for counting purposes.

The rationale for these decisions is as follows. The reason for including relative clauses in the same clause unit as the matrix clause they are attached to is that relative clauses function on the phrase level rather than the clause level. They are typically a part of a noun phrase. This is also the case of nominalized clauses that are governed by a preposition. It is also often the case that a relative clause is located in the middle of another clause. If it were counted as a separate clause unit, it would cause the matrix clause in which it was located to become a discontinuous clause unit, with another clause unit in the middle of it. This would complicate the counting procedure. An example of such a clause with a relative clause in the middle is:

וְהַמְטָה [אֲשֶׁר־נָחַפְדָ לְנֵחֶשׁ תִּקְחֶה בְּיָדֶךָ
 ‘and the rod [which was turned to a serpent] shalt thou take in thine hand’
 (Ex. 7:15de, KJV)

The exception to this is when there is more than one relative clause juxtaposed in a chain. In this case, the first relative clause is counted as the same clause unit as the matrix clause, whereas each successive relative clause is counted as a separate clause unit. This is done to avoid excessively large clause units. Such constructions of successive relative clauses are sometimes used as a covert method to tell a story or give an extended description. Hence it is appropriate that each one be a separate clause unit. An example:

Clause Unit 1:

זָכַר לְעוֹלָם בְּרִיתְךָ דְּבָר'[צִוָּה לְאֶלְף דֹּור]
 ‘He hath remembered his covenant for ever, the word [which he commanded to a thousand generations]’
 (Ps. 105:8ab, KJV)

Clause Unit 2:

אֲשֶׁר כָּרָת אֶת־אֶבְרָהָם וְשָׁבְועָתָו לִישְׁחַק
 ‘Which covenant he made with Abraham, and his oath unto Isaac’
 (Ps. 105:9, KJV)

Note that clauses nominalized by רֹאשׁ which function as the subject or object of a clause, or as some other clause-level constituent, are not relative clauses, and are counted as a separate clause unit just like other subordinate clauses that function at clause level.

The reason I have included the preposed temporal clauses in the same clause unit as the following main clause they modify is that such clauses usually only convey temporal information without any referents being mentioned. If I counted them as separate clause units, it would mean that whenever such a clause occurred, the topic continuity of every referent would be interrupted in the count. This seems to be counter-intuitive to the dynamics of discourse continuity. According to van der Merwe, Naudé, and Kroeze, such adjuncts of time are a “*type of dislocated construction...used to provide the temporal point of orientation of the subsequent event(s)*” (1999:339). Therefore, it is better if such clauses are not separate clause units. An example is:

וַיְהִי מִמְּחֹרֶת וַיֵּשֶׁב מֹשֶׁה לִשְׁפֹּט אֶת-הָעָם
 ‘And it came to pass on the morrow, that Moses sat to judge the people’
 (Ex. 18:13a, KJV)

Infinitival clauses are not counted as separate clause units. This is because infinitival clauses exhibit a lesser degree of independence from the main clause as compared to other subordinate clauses. This is the case even when there is more than one dependent infinitival clause, for example:

אֲלֹתְּפִנְעִילִי לְעֹזֶב לְשִׁיבָה מְאַחֲרִיךְ
 ‘Don't urge me to leave you or to turn back from you.’
 (Ruth 1:16b, NIV)

In this policy I follow Gildea (1994:208-211). In his study of Carib, only subordinate clauses that can control arguments independently of the main clause were counted as separate clauses. Infinitival clauses generally have the same subject as the main clause on which they are dependent.

Participles that function as nominal elements in a clause, even if they govern objects, are not counted as separate clause units. For example (participle in bold):

'He caused them to be pitied
by all **who held them captive**'
(Ps. 106:46, NIV)

וַיְתִּן אֹתָם לַרְחָמִים לְפָנֵי כָל־שׁוֹבִיכֶם

Other subordinate clauses besides those mentioned above are all counted as separate clause units. Verbless equative clauses consisting of a nominal subject and nominal predicate are counted as clauses for measuring purposes whether they are main clauses or subordinate clauses. An example as a main clause:

The LORD is a man of war
(Ex. 15:3a, KJV)

יְהוָה אֱלֹהִים מֶלֶךְ מַלחֲמָה

An example of a verbless clause functioning as a subordinate complement clause:

Clause unit 1:
'For he remembered'
(Ps. 78:39a, KJV)

וַיִּזְכַּר

Clause unit 2:
'that they were but flesh'
(Ps. 78:39b, KJV)

כִּי־בָּשָׂר הָمָה

Sentence fragments which are not clauses that occur as a conversational turn in a dialogue are also counted as separate clause units for counting purposes. For example, clause unit 3 below:

Clause unit 1:
'Comest thou peaceably?'
(1 Sa. 16:4f, KJV)

שְׁלָמָם בָּוָאָךְ

Clause unit 2:
'And he said,'
(1 Sa. 16:5a, KJV)

וַיֹּאמֶר

Clause unit 3:
'Peaceably'
(1 Sa. 16:5b, KJV)

שְׁלָמָם

Clause unit 4:

'I am come to sacrifice unto the LORD'
(1 Sa. 16:5c, KJV)

לִזְבַּח לִיְדָעָה בְּאֶתְּנִי

Identifying Clause Referents

Once I have demarcated all the clause units that I will use for calculating topicality values, I need to identify what referents occur in each clause unit. There are a number of gray areas for which guidelines are needed, so that referent identification can be done consistently from one clause to the next. I discuss these below.

Plural referents

Plural referents that are never broken down into singular referents are counted as one referent. If a plural referent consists of three or more referents, it will always be counted as a separate referent. Later if the singular referents are mentioned, they are counted as new referents. For example, the referents in 1 Samuel 17:13 are identified as follows:

TABLE 3
REFERENTS OF 1 SAMUEL 17:13

Clause unit	KJV	Referents
17:13a	And the three eldest sons of Jesse went	Jesse, 3-sons
17:13b	and followed Saul to the battle:	3-sons, Saul
17:13c	and the names of his three sons that went to the battle were Eliab the firstborn, and next unto him Abinadab, and the third Shammah	3-sons, Eliab, Abinadab, Shammah

If a plural referent consists of two referents, both of which are mentioned individually in the narrative, then they are counted as if they were an occurrence of the singular referents they consist of. A separate plural referent is not set up. For example, the referents in Ruth 1:4 are identified as follows:

TABLE 4
REFERENTS OF RUTH 1:4

Clause unit	KJV	Referents
1:4a	And they took them wives of the women of Moab;	Mahlon, Kilion, Ruth, Orpah
1:4b	the name of the one was Orpah	Orpah
1:4c	and the name of the other Ruth:	Ruth

Similarly, if a first person or second person plural pronoun is used in a particular clause, it includes either the speaker or addressee of the discourse, hence that speaker or addressee will be counted as a referent occurring in that clause.

Omitted referents

Whenever I can identify from context an omitted actor or undergoer referent in a clause (zero anaphora), I count the referent as occurring in that clause. Implicit referents in other case roles are not counted as occurring. Unidentifiable actors and undergoers are counted as new referents with zero topic persistence.

Synonyms

When synonyms are used to refer to the same referent, I count it as the same referent. This often occurs in poetic parallelism in the narrative poetry texts.

Identifying Genre of Clauses

This research is restricted to two discourse genres: narrative and directive discourse. It is necessary to spell out the criteria used for determining which clauses are classified as belonging to these particular genres.

Narrative

Narrative is the more easily understood discourse genre, and it is relatively unproblematic to identify narrative clauses. A narrative text is one that tells a story, that is a succession of causally connected events. Robert Longacre analyzes narrative as a discourse genre characterized by agent orientation and contingent succession (1996:10). This means that the actions of agents are important in narrative, and that narrative events are causally contingent on previous events, and succeed each other in chronological order.

Narrative clauses can be classified as foreground and background. Foreground clauses portray the sequential events of the story. Background clauses convey other types of information. With regard to evaluating the foreground and background status of clauses, Joseph Grimes posits the major categories of background material as being setting (time and place), explanatory information, collateral (non-actual events), and evaluation (1975:51-70). Although many background clauses do not portray causally connected events, they are still regarded as being an integral part of the narrative.

Quoted speech found with a narrative falls into a different category. It is best regarded as a separate discourse embedded within the narrative. This embedded speech may belong to a wide variety of genres. For example, it could be directive discourse. In fact, all the directive discourses analyzed in this dissertation comprise quoted speeches embedded in narrative. Other genres found in the embedded quotations of the Hebrew narrative corpus used in this dissertation include expository discourse, descriptive

discourse, commissive discourse, promises, confessions, and other types. None of these are included in the analysis of narrative clause types.

Quoted speech may also be an embedded narrative, a story told by one of the characters in the main story. Based on genre considerations alone, it would be appropriate to analyze clauses in such embedded narratives together with the clauses in the main narrative framework. But in the present study, such embedded narratives are excluded from the analysis on the basis of length. For reasons which are discussed in the following section, I have set a minimum length of fifteen clauses for an embedded quotation which is to be included in the analysis. It happens that none of the embedded narrative discourses found within the main narrative corpus attain a length of fifteen clauses, therefore they are all excluded from the analysis.

If one wants to measure topicality patterns in narrative using referential distance and topic persistence, it cannot be assumed that the patterns will be the same for the embedded genres. There are two problems which must be considered. First, there may be some degree of discontinuity of referents between the narrative framework and the embedded speeches. That is, the speeches may differ from the narrative framework with regard to topic and referents. Whenever there is a transition from one discourse genre to another there may (or may not) be some discontinuity.

Second, the topicality patterns within extended sections of different genres may not be the same. In narrative discourse, there are often several participants interacting on the stage at the same time, with attention shifting from one to another. In directive discourse, however, attention may tend to stay focused on one participant, the one being directed. These differences might possibly affect the way certain clause types are used for various functional voices.

One way of eliminating possible effects of heterogeneous genres in a text would be to restrict one's analysis to uninterrupted sections of one homogeneous genre. For

measuring topic persistence of narrative, one might require that the ten clauses after the clause to be analyzed all be of narrative genre. To measure referential distance, one might require that the twenty previous clauses all be of narrative genre. But such a strict requirement for homogeneous genre would end up in drastically reducing the sample.

This is especially the case for biblical narratives, in which conversations are frequent.

On the other hand, if there is a relatively high degree of integration with respect to topicality between the narrative framework and the reported speech, this would provide some support for a methodology of not differentiating between the two in topicality counts. One scholar who has addressed the question of cohesion between narrative and dialogue in Biblical Hebrew narrative is Basil Rebera (1981), in his study of the book of Ruth, which is part of my narrative corpus. He states, “Another feature of the dialogue structure...was the apparent repetition of elements of narration in dialogue and elements of dialogue in subsequent units of dialogue” (1981:93). He clarifies further, “When the dialogues are assembled apart from the narration, the impression is that the story contained in the narration is duplicated in dialogue” (1981:94). The implication of this for the present study is that it indicates that the topics of the dialogue and the narrative tend to be the same, thus providing some support for the integration of the two subgenres in the calculation of topicality counts.

Even though I have argued that there is considerable continuity between the surrounding narrative and an embedded quotation, one cannot deny that mixing genres in the topicality counts does introduce a confounding variable to the methodology. But I would argue that even if that confounding variable is there, the impact is likely to be small. It is unlikely to have much influence in those cases where there is strong continuity between the quote and the surrounding narrative. The effect will be mainly felt from the minority of cases where the quote is quite discontinuous from the surrounding narrative in terms of participants. But this small effect is unlikely to be

significant in comparison to the large majority of clauses analyzed found in uninterrupted narrative or places of narrative-quote continuity. Givón's method focuses on interpreting the dominant pattern of a particular clause type. It accepts that there will always be exceptions. If some of these exceptions are caused by the confounding variable of discontinuities caused by direct quotes, it will have little impact on the overall analysis.

Based on these considerations, I will calculate the topicality measures based on the entire text sample. Any narrative clause will be analyzed for topicality regardless of what the genres of the previous and following clauses are. Clauses at the very beginning and end of texts will be analyzed as well. In such cases, the anaphoric continuity value of the referents in the first clause will be that of a new referent, and the topic persistence of referents in the last clause will be zero.

The choice of selections to be included in the narrative corpus was based on several considerations. My goal was to have a corpus of more than nine hundred transitive clauses. Since I desired to have a wide range of clause types within the corpus, I chose selections from both narrative prose and narrative poetry, since the latter includes some clause types rare in prose (for example, clauses with preterite *yiqtol*). Since narrative poetry selections in the Hebrew Bible are limited in number, most of them have been included in the narrative corpus, namely: Psalms 78:9-72, 105:8-45, 106:7-46, 107:3-42, Exodus 15:4-18 (Song of Moses and Miriam), Deuteronomy 32:8-26 (Song of Moses), Judges 5:4-29 (Song of Deborah), 2 Samuel 22:5-46, Habakkuk 3:3-16. In all of these poetic passages, the initial verses of the poem are not of narrative genre, and hence are not included in the corpus. There are 331 semantically transitive clauses in these passages.

The remaining clauses needed are taken from narrative prose. To reduce complications of possible diachronic changes in topicality patterns, post-exilic narrative prose was not included. For the narrative prose corpus, I selected several long passages

of extended narrative, namely Exodus 1:1-20:1, 1 Samuel 16 - 31 (the story of David), and Ruth. There are 660 semantically transitive clauses in these passages. The total number of semantically transitive clauses in the narrative corpus is 991.

Defining Directive Discourse

Directive discourse is harder to define than narrative, because different scholars have differing terminology for the same or similar discourse genres. According to speech act theory, utterances can be characterized as having a particular illocutionary force. Various scholars have propounded a variety of classificational systems for illocutionary acts. Directive utterances are one category found in some of these systems.

John Searle (1976) has five basic types of speech acts: representatives, directives, commissives, expressives, and declarations. Searle's classification is based on three features: illocutionary point, direction of fit between words and world, and expressed sincerity conditions (1976:10). Illocutionary point has to do with the purpose of the utterance. Direction of fit means whether the purpose of the utterance is to get the propositional content to match the world, (e.g. assertions) or to get the world to match the propositional content (e.g. requests) (1976:3). Expressed sincerity conditions relate to the "psychological state expressed in the performance of the illocutionary act" (1976:4).

Searle's second class of illocutionary acts is directives. He describes them thus:

The illocutionary point of these consists in the fact that they are attempts...by the speaker to get the hearer to do something....The direction of fit is world-to-words and the sincerity condition is want (or wish or desire). The propositional content is always that the hearer H does some future action A (1976:11).

Kathleen Callow has a simpler classification system consisting of three main purposes, or imports, of utterances: (1) Informational, (2) Volitional, (3) Expressive (1998:100-125). Under this system, directives are a subcategory of volitional utterances.

Callow defines volitional utterances as follows: “Any utterance is a volitional if it expresses, in and of itself, the speaker’s purposes and plans for instigating action and changing states of affairs” (1998:109). A directive utterance is characterized as follows:

A directive has two underlying conditions: the envisaged activity or state must be desired by the speaker..., and it must be within the power of the hearer...it is of the essence of directives that the utterance itself constitute an attempt by the speaker to get the hearer to bring about the desired situation (1998:110).

It follows that the classification of an utterance or stretch of discourse as directive entails discerning the purpose of the speaker as being that of influencing the hearer to bring about a certain situation.

Directive utterances can be related to the modal category of deontic modality. In the classification system of F. R. Palmer (2001), a basic distinction is made between propositional modality, which is “concerned with the speaker’s attitude to the truth-value or factual status of the proposition,” and event modality, which is “concerned with the speaker’s attitude towards a potential future event” (2001:8). Event modality has two main types, deontic and dynamic. Palmer explains, “deontic modality relates to obligation or permission, emanating from an external source, whereas dynamic modality relates to ability or willingness, which comes from the individual concerned” (2001:9-10). He remarks further, “The most common types of Deontic modality are the ‘directives’, ‘where we try to get others to do things’ (Searle (1983:166))” (Palmer 2001:70). This implies that any utterance which falls into the category of deontic modality can be classified as a directive utterance, although it is quite possible that there will also be directive utterances which do not have deontic modality, since the category is defined by the purpose of the speaker, rather than by the grammatical features of the clause.

With regard to Hebrew, Andy Warren analyzes the verb system into three subsystems, one of which he calls the Deontic modal subsystem. This consists of the verb forms “cohortative, imperative, jussive, *'al-tiqtol'*” (1998:70). According to Warren, the jussive includes *yiqtol-x* clauses, that is long form *yiqtol* in clause initial position.

Longacre presents a different system for the categorization of discourse types. There are two parameters, agent orientation and contingent succession, which distinguish four main discourse types. A third parameter, projection, further subdivides the types:

Narrative (+ agent orientation, + contingent succession)

- + Projection: Prophecy
- Projection: Story

Procedural (- agent orientation, + contingent succession)

- + Projection: How-to-do-it
- Projection: How-it-was-done

Behavioral (+ agent orientation, - contingent succession)

- + Projection: Hortatory, Promissory
- Projection: Eulogy

Expository (- agent orientation, - contingent succession)

- + Projection: Budget Proposal, Futuristic Essay
- Projection: Scientific Paper (1996:10).

Two of these discourse types fall into the category of directives as classified by Searle and Callow, namely hortatory behavioral discourse and how-to-do-it procedural discourse. For both of these, the speaker wants the hearer to do something. Procedural discourse is similar to a subtype of directives labeled by Callow as uncontested

directives. According to Callow, there are two situations in which uncontested directives are used:

In the first, the social situation gives the speaker authority over the hearer, who therefore has no choice but to comply...In the second, the hearer already wants to comply;...the speaker's task is a straightforward one: he simply has to tell the hearer what to do. No further pressures are required....The situation of willing co-operation...usually arises when the person addressed desires to affect future events in some way, but does not know how to do so (1998:110).

This second type of uncontested directive corresponds fairly closely to how-to-do-it procedural discourse as defined by Longacre (1996).

In selecting my corpus, I found Callow's broader definition easier to use than Longacre's system of three parameters. Problems arise in applying these parameters to particular texts for which the values of the parameters do not seem to match the prototypical subtypes. For example, in some texts the speaker wants a specific addressee (+ agent orientation) to carry out a sequence of contingent actions, and explains how to do it. The parameter values would seem to put it in the category of prophecy, but intuitively it ought to be hortatory or procedural. There are also texts that are a mixture of plus and minus contingent succession. But most of these borderline cases clearly fall into the category of directive by Callow's definition.

However, to try to accommodate both perspectives, I will exclude from my corpus texts that seem clearly to fall into the category of procedural discourse. I discern these by the following criteria: (1) there is no specific addressee involved, hence lack of agent orientation; (2) there is a relatively long sequence of actions, hence plus contingent succession; (3) there is a significant amount of information about how to do the desired action.

The excluded texts must fulfill all three criteria. I do include texts that explain to a specific addressee how to do something (e.g. Genesis 6:13b-21; God wants Noah to

make an ark.). I also include texts addressed to nonspecific addressees when the desired actions are not highly sequenced (e.g. Exodus 21:1-23:33; God wants the Israelites to obey his laws; Leviticus 11:2-47; God wants the Israelites not to eat unclean food). Some examples of the excluded procedural texts are: Exodus 25:10-30:38 (how to make the ark, tabernacle, and accessories), Leviticus 1-7 (procedures for offerings), Leviticus 12 (how to be purified after childbirth), Leviticus 13-15 (procedures for purification from skin diseases and bodily discharges).

In identifying directive texts, there is a problem in defining appropriate units. Is “directive” a property of a clause, a sentence, a paragraph, a conversational turn, or a whole discourse? Dieter Wunderlich suggests the following units to deal with speech act sequences: “turn, move, speech act pattern, complex speech unit and discourse type” (1980:293). I will adapt his term “complex speech unit” and refer to the embedded directive texts in my corpus as directive speech units.

In order to evaluate whether a particular speech unit matches Callow’s definition of directives, I have asked the question: Can the main purpose of this speech unit be expressed by a formula of the following form: A desires B to do X? The purposes suggested for all the directive speech units in the corpus are listed in Appendix A.

Selected Features of Hebrew Directive Discourse

The selection of directive discourse as a genre for analysis was dictated by the need to find a textual corpus in Hebrew with large numbers of *yiqtol* and *weqatal* verb forms, to complement the analysis of topicality in narrative, which is dominated by *wayyiqtol* and *qatal* verb forms. In this section, I only discuss a few selected features of Hebrew directive discourse. The features selected are those that directly impinge on my methodology. For a more general description of Hebrew directive or hortatory discourse see Longacre (1989:119-136) or Anna Garber Kampaoré (2004).

Directive Discourse as Embedded Direct Speech

In the Hebrew Bible, virtually all directive texts are found as a quotation embedded in narrative discourse. Even books that consist almost entirely of directive utterances, such as Leviticus, embed the directives in a narrative framework consisting of quotative formulae, such as the following:

Then the LORD spoke to Moses, saying,
Lev. 4:1; 5:14; 6:1, 8, 19, 24 etc. (NASB)

וַיֹּאמֶר יְהוָה אֲלֵיכָם שֵׁלֹא לִאמֶר

Technically speaking, one should say that these directive texts are directive complex speech units embedded in a narrative discourse. Therefore, we need to have some understanding of the characteristics of such embedded quoted discourse. According to Cynthia Miller,

written dialogue reflects oral conversation in its organizational structure into adjacency pairs; written dialogue differs in that the narrator provides a metapragmatic analysis of the dialogue through the ways in which the utterances are represented (1996:234).

Miller remarks:

An interesting device of Hebrew narrative is for a single speaker to have two speeches attributed to him/her, each introduced with a quotative frame. No narrative comment intervenes between the two pair-parts. The time frame or spatial orientation of the narrative is the same, and the participant framework of speaker and addressee is identical in both pair-parts (1996:239).

This feature is relevant to my analysis. When this feature is encountered in a directive text, I will regard both pair-parts as part of the same uninterrupted narrative in terms of calculating topicality measures. An example is 1 Samuel 17:8d-10:¹⁴

“Why do you come out and line up for battle?
Am I not a Philistine,
and are you not the servants of Saul?
Choose a man

לִמְהֹן תִּצְאָה לְעָרֵךְ מִלְחָמָה
כַּלְוֹא אֲנִכִּי הַפְּלִשְׁתִּי
וְאַתֶּם עֲבָדִים לְשָׁאול
בְּרוּלָכֶם אִישׁ

¹⁴ This example, as well as the following one, illustrates how the directive texts in the corpus are divided into clause units.

and have him come down to me.
 If he is able to fight
 and kill me,
 we will become your subjects;
 but if I overcome him
 and kill him,
 you will become our subjects
 and serve us.”
 Then the Philistine said,
 “This day I defy the ranks of Israel! Give me a man
 and let us fight each other.” (NIV)

וירד אליו
 אם יוכל להלחם עמי
 והקנינו
 וחייבנו לךם לעבדים
 ואם אני אוכל לו
 והכיתיו
 והייחם לנו לעבדים
 ועבדיהם אנחנו
 ניאמר הפלשתי
 אני חרבתי את מערקות ישראלי היום הזה
 תנו לי איש
 ונלחמה יחד

Sometimes a direct speech quotation may be embedded within a directive speech unit, which itself is direct speech embedded in narrative. Miller remarks, “Direct speech may be embedded within direct speech for up to three levels of embedding” (1996:227).

An example in a directive text with two levels of embedding is Exodus 7:16:

Then say to him,
 ‘The LORD, the God of the Hebrews, שֶׁלְתָנִי אֱלֹהִיךְ לְאֹמֵר
 has sent me to say to you:
 Let my people go,
 so that they may worship me in the desert.’ (NIV)

ואמրת אליו
 יהוה אלהי העברים שלתני אליך לאמר
 שלח את עמי
 ועבדני במדבר

In the analysis of topicality, the clauses of these quotations within quotations are counted for purposes of calculating referential distance and topic persistence, but are not included within the corpus of clauses to be analyzed.

Components of Directive Discourse

In directive speech units, directive utterances are often accompanied by utterances of other speech types. Anna Garber Kampaoré refers to one type of material accompanying directives as argumentation. She remarks, “Frequently argumentation accompanies directives in the form of separate motive clauses coming before or after the

directives. They may or may not be linked to adjacent sentences by means of a conjunction" (2004:29).

Rifat Sonsino defines such motive clauses as, "a dependent clause or phrase which expresses the motive behind the legal prescription or an incentive for obeying it" (1980:65). He divides them into four categories:

- (1) motive clauses which express God's authority, (2) motive clauses which allude to historical experiences of the people, (3) motive clauses which instill a fear of punishment, (4) motive clauses which promise well-being to the compliant (1980:109).

Longacre presents a more detailed analysis of the clause components of hortatory discourse, as shown in Table 5.

TABLE 5
VERB RANK IN HORTATORY DISCOURSE
 (Longacre 1989:121)

Band 1: Primary line of Exhortation	1.1 Imperative (2p) 1.2 Cohortative (1p) 1.3 Jussive (3p)
Band 2: Secondary Line of Exhortation	2.1 <i>ʔal</i> + jussive 2.2 Modal imperfect
Band 3: Results/ Consequences (Motivation)	3.1. <i>w</i> (consecutive) perfect 3.2 <i>lô ɿpen</i> + imperfect 3.3 (Future) perfect
Band 4: Setting (Problem)	4.1. Perfect (of past events) 4.2. Participles 4.3. Nominal clauses

Longacre refers to bands 1 and 2 as “on the line of exhortation” and bands 3 and 4 as “off the line of exhortation” (1989:123). Garber Kampaoré’s category of argumentation and Sonsino’s motive clauses correspond to Longacre’s Band 3 of results and consequences giving motivation.

These concepts are similar to the concepts of foreground and background material in narrative. Using this terminology, we can classify the directive utterances as foreground and other types of supporting utterances as background.

I follow Longacre’s approach in that I regard the supporting background clauses as being an integral part of the directive discourse. The implication of this is that the clauses selected for analysis include both foreground clauses as well as background clauses.

Selecting the Directive Corpus

I have not included all directive utterances found in the Hebrew Bible in my corpus. The primary constraint imposed by the methodology is that the directive speech unit must have a minimum length. In order to measure topic persistence, ideally there should be at least ten clauses of text after the clause being measured. To measure referential distance, ideally there should be a certain number of clauses before the clause being measured. Hence this methodology works better with long texts rather than short texts. But if one sets a relatively high minimum length for speech units that will be included in the corpus, the size of the corpus will be significantly reduced. Since directive speech units in the Hebrew Bible are embedded quotations within narrative discourse, many tend to be rather short. One needs to balance these two factors against each other.

Based on these considerations, I have set the minimum length for a directive speech unit as ten clauses, with the proviso that the embedded quotation within which the

directive speech unit is found must be at least fifteen clauses. If there are several successive speeches by one speaker on the same occasion, with no one else interrupting, they are counted as one embedded quotation.

The embedded quotation may include immediately previous conversational turns by other speakers. However, it may not include conversational turns by other speakers subsequent to the directive speech unit. The reasoning behind this restriction is as follows. Referential distance is an anaphoric measure, counting backwards across the previous conversation. The hypothesis of the methodology is, if a certain referent has been recently mentioned, whether by the present speaker or his/her interlocutor, that referent is still accessible/semi-active or discourse active, and this status may affect its coding in the clause. Hence it is reasonable to include conversational turns by other speakers in calculating referential distance. But the cognitive status of topic persistence is different. In this case, the hypothesis is that the present speaker has some idea of which referents he/she wants to speak about in the upcoming ten clauses. This anticipated importance or unimportance in the speaker's mind can influence the coding of different referents. But the speaker does not know what referents his/her interlocutor wants to speak about in the following conversational turn. Hence it is reasonable to exclude following conversational turns in the calculation of topic persistence.

Sometimes directive speech units, which themselves are quotations embedded in narrative discourse, have other quotations embedded within them. If these quotations within quotations are of non-directive genre, their clauses are not included in the directive corpus to be analyzed, but the referents in those clauses are counted for purposes of calculating referential distance and topic persistence. Even if the quotation within a quotation is a directive, it is not included in the corpus if it does not fulfill the minimum length requirement.

The reason for this is that there is a lack of symmetry in the relationship between the embedded discourse and the surrounding discourse. We could express it like this: the surrounding discourse is always aware of the embedded discourse, even though the embedded discourse may not be aware of its surroundings. For example, in a narrative, the narrator knows what the characters are going to say, and controls what they are going to say. The same is not true of the characters. If it is a true story, the narration may report exactly what they really said. And those characters had no awareness that their speech was going to end up as the embedded discourse of a narrative. And they didn't know what participants would be mentioned in the narrative before or after their conversation. But the narrator knows what participants are going to be mentioned in the upcoming conversation. Hence it is perfectly possible that that awareness may influence the coding of participants before the conversation, if that is a normal pattern to signal that a particular participant is going to be cataphorically important.

The implication of this is: if one is analyzing the surrounding directive discourse, it is quite reasonable to include an embedded quotation in the topicality counts. What is less justified is to include surrounding discourse in the topicality counts in relation to an analysis of an embedded discourse.

A complete list of the directive speech units I have included in the corpus is found in Appendix A. The total number of semantically transitive clauses in the directive discourse corpus is 926.

Quantitative and Statistical Procedures

In the presentation of results, the anaphoric continuity and topic persistence values for the actor and the undergoer are tallied for various clause types or combinations of clause types. I divide the topic persistence values into categories of low values (0-2) and high values (3-10). As presented earlier in Table 2, I divide anaphoric continuity

values into categories of high (10), medium (9-9.5), low (1-8), and two subcategories of very low: 0.5 (for reactivated referents, when the referential distance is greater than 19), and zero (for new referents). I will present the percentages for the various categories of anaphoric continuity and topic persistence for actor and undergoer in a table for each clause type or group of clause types.

Besides these variables, I have established two further variables, which I will call anaphoric continuity difference and topic persistence difference. Both of these measure the extent to which the actor is more topical than the undergoer in a particular clause. The anaphoric continuity difference equals the anaphoric continuity value for the actor minus the value for the undergoer. For example, if the actor of a clause occurs in the previous clause, its anaphoric continuity value is ten. If the previous mention of the undergoer was four clauses previous, then its anaphoric continuity value is seven. The anaphoric continuity difference for that clause is $10 - 7 = 3$. If the undergoer has a higher anaphoric continuity score than the actor, then the anaphoric continuity difference for that clause will be negative. The maximum value of the anaphoric continuity difference is ten, if the actor is mentioned in the previous clause and the undergoer is a new unidentifiable referent. The minimum value is minus ten, when the opposite case holds.

I have calculated the topic persistence difference in a similar way from the topic persistence scores for actor and undergoer. Its maximum value is ten, if the actor is mentioned ten times in the following ten clauses, and the undergoer is not mentioned at all. Its minimum value is minus ten, if it is the undergoer that has ten mentions and the actor is unmentioned. A value of zero indicates that both actor and undergoer are mentioned the same number of times in the following ten clauses.

I use two methods for grouping together clause types for analysis. First, for each discourse genre, I use principal component analysis to cluster the more frequently occurring basic clause types. This involves calculating a new set of derived variables,

called PCA scores, for each clause. This is done using the statistical package R (R Development Core Team 2004). The mean values of two of the PCA scores are plotted on a graph. Basic clause types which have similar mean values for these PCA scores will cluster together on the graph, indicating that they have similar topicality patterns. I describe this procedure in more detail in Chapter 3.

The second method for grouping clause types defines amalgamated clause types based on one common feature. First, I have defined seven amalgamated clause types based on how the object is marked. These are described in Chapter 4. Second, I have defined various amalgamated clause types based on the constituent order of subject, verb and object as well as on whether the subject and object is a noun or a pronoun. These are described in Chapter 5. Third, I have defined amalgamated clause types based on verb conjugation and syntactic voice. These are described in Chapter 6.

Relating Topicality Patterns to Functional Voice

The purpose of these quantitative procedures is to use the topicality measures of actor and undergoer to classify each clause type in terms of topicality patterns. Givón's system of functional voice enables one to give concise labels to four topicality patterns.

Syntactic Voice

Discourse studies of syntactic voice categories in various languages have discovered characteristic discourse functions for each of them. The most relevant for the purposes of this study are the functions of the voices in signaling the topicality profile of the actor and undergoer of semantically transitive clauses. There are four syntactic voices relevant to the present study: active, passive, antipassive, and inverse. These have been defined in various ways.

David Crystal defines active voice as “referring to a sentence, clause, or verb form where, from a semantic point of view, the grammatical subject is typically the actor, in relation to the verb” (1997:7). He defines passive voice as “referring to a sentence, clause, or verb form where the grammatical subject is typically the recipient or ‘goal’ of the action denoted by the verb” (1997:280). Bernard Comrie suggests three somewhat different criteria in the context of distinguishing passive from ergative:

In terms of these criteria, the prototypical passive turns out to be a construction where the P[atient] is clearly the subject, where the A[gent] is at most minimally integrated into the syntax of its clause, and moreover a construction which is marked in terms of voice (1988:21).

The markedness is characterized by low frequency, formal complexity, restricted productivity, and restricted discourse distribution.

Foley and Van Valin distinguish between two types of passives. A foregrounding passive is one which “permits non-actor arguments to occur as the pivot of a clause.” A backgrounding passive is one in which “the actor may be a peripheral constituent, or it may be removed entirely from the clause” (1984:149). In many cases a passive construction fulfills both functions simultaneously.¹⁵

Antipassive voice is typically found in ergative languages, for which in unmarked transitive clauses the A is coded as ergative and the O as absolute. Ann Cooreman defines the antipassive as a construction in which the A is coded as absolute and “the O (if present) appears in a case other than the absolute. The verb phrase may or may not be explicitly marked as intransitive” (1994:50). R. M. W. Dixon has a somewhat narrower definition of antipassive:

- (a) applies to an underlying transitive clause and forms a derived intransitive;

¹⁵ One example of a backgrounding passive is the frequent use of passive voice in dissertations to remove the author entirely from many clauses in which he or she is the actor. This type of backgrounding passive is deliberately avoided in this dissertation, or in other words, I deliberately avoid this type of backgrounding passive in this dissertation.

- (b) the underlying A NP becomes S of the antipassive;
- (c) the underlying O NP goes into a peripheral function, being marked by a non-core case, preposition, etc; this NP can be omitted...
- (d) there is some explicit formal marking of an antipassive construction (1994:146).

Syntactic inverse voice is found in some Amerindian languages, such as Algonquian and Athabaskan. The canonical syntactic inverse voice can be termed a pronominal inverse since it involves a distinction between different types of third-person pronouns: proximate for more topical referents and obviate for less topical referents. In such a system, inverse voice is when the patient is proximate and the agent is obviate. Active-direct voice is when the agent is proximate and the patient is obviate (Givón 1994a:14-16).

For the purposes of this dissertation, it is desirable to have a symmetrical set of definitions for the four syntactic voices. I propose the following definitions which are based on several features mentioned above.

- Syntactic active voice: A transitive clause type in which the actor is subject/pivot and the undergoer is a core argument.
- Syntactic inverse voice: A transitive clause type in which the undergoer is subject/pivot and the actor is a core argument.
- Syntactic antipassive voice: An intransitive clause type derived from a lexically transitive verb in which the actor is subject/pivot and the undergoer is oblique or omitted.
- Syntactic passive voice: An intransitive clause type derived from a lexically transitive verb in which the undergoer is subject/pivot and the actor is oblique or omitted.

Functional Voice

The application of a cross-linguistic typological functional approach suggests that even languages that do not have all these syntactic voices might have other clause types

which could fulfill the same discourse functions. This leads to the concept of functional voice, which can be defined as follows: Any clause type that has a similar topicality profile as one of the prototypical syntactic voices can be categorized as belonging to that functional voice.

The four functional voices can thus be defined pragmatically in terms of the relative topicality of the agent and patient as shown in Table 6:

TABLE 6

**RELATIVE TOPICALITY OF THE AGENT AND PATIENT
IN THE FOUR MAIN FUNCTIONAL VOICES**
(Givón 1994a:8)

Voice	Relative topicality
active-direct	AGT > PAT
inverse	AGT < PAT
passive	AGT << PAT
antipassive	AGT >> PAT

Givón provides pragmatic definitions for each of the voices. I have adjusted his terminology to that used in this dissertation, referring to actor rather than agent, and undergoer rather than patient.

Active: The actor is more topical than the undergoer, but the undergoer retains considerable topicality.

Antipassive: The actor is more topical than the undergoer, and the undergoer is extremely non-topical ('suppressed', 'demoted').

Inverse: The undergoer is more topical than the actor, but the actor retains considerable topicality.

Passive: The undergoer is more topical than the actor, and the actor is extremely non-topical ('suppressed', 'demoted') (adapted from Givón 1994a:8-9).

Potential Topicality Patterns

There are four defined functional voices, but the possible number of topicality patterns is greater than four. Givón's system assumes that there is only one value for the topicality for the actor and one for the undergoer. But since two variables are used to measure topicality, it is quite possible that the actor may have a high topicality value according to one variable, but a low value according to the other. Such a case would not fit any of the definitions of functional voice. The definitions of functional voice are based on the implicit assumption that the values for referential distance and topic persistence will be congruent. Indeed, this is often the case, but not always.

Even if I limited myself to cases in which the values of the two variables were congruent, there would still be more than four possible patterns. For example, I could group the possible values into three categories, those indicating high, medium, and low topicality. Since topicality is measured for both actor and undergoer, the total possible number of patterns would be three times three, as shown in Table 7. The table indicates where the four functional voices fit in relation to the total possible number of patterns.

TABLE 7
**POSSIBLE TOPICALITY VALUES FOR ACTOR AND
UNDERGOER**

Undergoer Topicality			
Actor Topicality	High	Medium	Low
High		Active Functional Voice	Antipassive Functional Voice
Medium	Inverse Functional Voice		Antipassive Func. Voice?
Low	Passive Functional Voice	Passive Functional Voice?	

Givón's categories do not cover the cases where the topicality of actor and undergoer are about the same. Such a category is posited by Cooreman as an extra category, in addition to the four functional voice categories mentioned above (1983:478-483). According to her analysis of Chamorro, a particular clause type referred to as the “-UM- construction” falls into this category. She remarks, “it seems to be the case that the Agent and Affected Patient in this construction have roughly the same degree of topicality” (1983:478-479).

Neither do Givón's categories clearly cover the case in which the actor has medium topicality and the undergoer has low topicality. This does not fit into the active functional voice category, since the undergoer does not retain considerable topicality. Neither is it a prototypical case of antipassive functional voice, since that usually has the characteristic that the actor is much more topical than the undergoer. But perhaps it could be regarded as a subtype of antipassive functional voice. Similarly, the case in which the actor has low topicality and the undergoer has medium topicality. This might be regarded as a subtype of passive functional voice.

The situation becomes more complicated if one surrenders the assumption that the values for referential distance and topic persistence will match. Table 8 shows the number of possibilities of topicality patterns if the two variables are regarded as independent. I will use anaphoric continuity on the table to represent referential distance, so the two variables have equal polarity. Again, the squares of the grid that fit Givón's definitions of functional voice are marked. Question marks indicate squares that approach Givón's definitions, but are not such a good match.

TABLE 8
**POSSIBLE TOPICALITY PATTERNS FOR ACTOR AND
UNDERGOER**

		Undergoer									
Actor	Anaph. Cont.	High	High	High	Med.	Med.	Med	Low	Low	Low	Low
Anaph Cont.	Topic Pers.	High	Med.	Low	High	Med.	Low	High	Med	Low	Low
High	High				Act.?	Act.			Anti?	Anti.	
High	Med.					Act.?				Anti.	
High	Low										
Med.	High	Inv.?								Anti.	
Med.	Med.	Inv.	Inv.?							Anti?	
Med.	Low										
Low	High										
Low	Med.	Pas. ?									
Low	Low	Pas.	Pas.		Pas.	Pas.?					

What is clear from Table 8 is that Givón's definitions of functional voice only fit a small proportion of the possible topicality patterns that might be found in clauses. There are several possible implications of this. It might well be that most of the potential topicality patterns outside Givón's definitions seldom if ever occur in real language

clauses. If that were the case, Givón's labels might be adequate to describe virtually all the topicality patterns of clause types found in natural languages. But it might well be that one comes across clause types which fall into the categories indicated by the empty squares on Table 8. In this case, one might need to create new labels to describe these topicality patterns, or else expand the definitions of some of Givón's categories to include them as non-prototypical subtypes.

The important point to bear in mind is that Givón's functional voices are merely convenient labels to describe some commonly occurring topicality patterns. They do not constitute a comprehensive classification system of all possible topicality patterns. Givón himself did not intend them to be interpreted that way. He explains:

In defining the main pragmatic voices...one must keep in mind that these are but the most commonly attested prototypes....[M]any more-subtle voice contrasts can be grammaticalized in a particular language, and are in fact documented in at least some languages (1994a:9).

Because of this, when I am analyzing topicality patterns, I will not try too hard to force the results into Givón's categories. But rather I will use Givón's categories as signposts. If the topicality pattern of a particular clause type fits well with one of the functional voice categories, then I will apply that label to it. For those clause types whose patterns do not fit so well, I will try to describe the differences from those functional voice categories which are closest, and perhaps suggest some new labels if necessary.

Analyzing Focus Structure

For the most part, I will base the analysis of topicality patterns on Givón's methodology as discussed above. But for some clause types or clusters, I will also analyze the clauses in terms of Lambrecht's three focus structures. The unmarked structure is predicate focus, and this is by far the most common. In this structure, the

subject is the clause topic, and the predicate is focal. Virtually all clauses in which the subject is pronominal fall into this category.

The second most common structure is sentence focus. In this structure, both the subject and the predicate are focal. One prerequisite for sentence focus is that the subject must be nominal. In order for a subject to be part of the focus, it must be non-active in the discourse, that is, brand-new. Most clauses with subjects classified as new fall into the category of sentence focus. But occasionally there are sentences with new subjects that fall into the category of predicate focus, because the new subject is accessible; it can be inferred from the context.

Argument focus structure is the least common structure. In argument focus, the predicate is presupposed, and only one argument is focal. The most common examples cited in the literature are sentences that are answers to questions. Since question and answer adjacency pairs seldom occur in narrative and directive discourse, argument focus clauses are rare in the corpora investigated here. It can only occur if an event is referred to in two separate clauses, first in a more general way, and subsequently mentioning an argument not mentioned specifically in the first clause.

I will not analyze the focus structure of clause types that do not have nominal subjects, since they can be presumed to be predicate focus. I will analyze some of the clause types and clusters that have nominal subjects, since they can be used for both predicate focus and sentence focus.

Hypotheses to Be Tested

My main purpose in using this methodology is to analyze how topicality is signaled in Hebrew and Moronene clauses, and to apply this understanding to the practical goal of improving the quality of a translation from Hebrew to Moronene. At the same time, I have a theoretical interest in evaluating the adequacy of Givón's functional

voice categories as a means of characterizing semantic features of clause types in relation to topicality. It is of particular interest to evaluate how useful these categories are when applied to a language like Hebrew, which has only two syntactic voice categories. If it turns out that there are many Hebrew clause types which match all four of Givón's functional voice categories, that will be evidence for the adequacy of the theory. I will frame this theoretical question in the form of several hypotheses:

Null Hypothesis

The null hypothesis is that both the anaphoric continuity and topic persistence variables are independent with respect to basic clause types and amalgamated clause types. The null hypothesis will be proved if there is no significant difference between the values of those variables for each specific clause type and their values for the whole sample.

Weak Hypothesis

The weak hypothesis is that anaphoric continuity and topic persistence will differ significantly with respect to certain basic clause types or amalgamated clause types. The weak hypothesis does not predict how many clause types will show significant differences, nor what sort of differences will be found.

Strong Hypothesis

The strong hypothesis is that a majority of basic clause types and amalgamated clause types will have values for anaphoric continuity and topic persistence that closely match the four functional voice categories.

In order to define what is meant by "closely match," I will assign a quantitative value to the expression "retains considerable topicality" in Givón's definitions of active

and inverse functional voices. For this purpose I will define “retains considerable topicality” to mean that the high values of topic persistence and the high and medium values of anaphoric continuity exceed twenty-five percent. The reasoning behind this definition is discussed in D. Andersen (2004:25-28).

I regard this evaluation of Givón’s theory as a supplementary investigation. For this reason, I did not include the above hypotheses in the research questions presented in the Introduction. In the concluding chapter, I will discuss whether or not the hypotheses have been demonstrated.

Conclusion of Part I

In Part I, I reviewed various approaches to topicality in Biblical Hebrew and concluded that there were two approaches which would be the most appropriate and useful for the purpose of establishing a theoretical and methodological framework for the present study. The theoretical framework is provided by Givón’s theory of functional voice, complemented by Floor’s exposition of Lambrecht’s theory of information structure. I base the methodology on that found in Givón (1994b), with various refinements and additions. These include the defining of a number of additional variables, namely anaphoric continuity, topic persistence difference, and anaphoric continuity difference, as well as the use of principal component analysis for the purpose of clustering clause types.

Some of the methodological decisions I made include the following:

- The clauses included in the analysis are: (1) all syntactically transitive finite clauses except relative clauses and those with clauses as object; (2) syntactically intransitive lexically passive clauses; (3) syntactically intransitive active clauses which are lexically transitive.
- Clause types are defined using the features: verb conjugation, constituent order, object marking, and nominal or pronominal status of core arguments.

- Clause units for counting purposes are defined so that some types of subordinate clauses are separate clause units, and others are included in the same clause unit as the main clause they modify.
- Directive discourse is defined using the definition of Callow (1998), but excluding procedural texts as defined by Longacre (1996). The minimum length of a directive discourse speech unit included in the analysis is fifteen clauses.
- Clauses in embedded quotations are excluded from the analysis, but are counted for purposes of calculating referential distance and topic persistence.

PART II

ANALYSIS OF HEBREW CLAUSE TYPES

Part II consists of the analysis of Hebrew clause types. In Chapter 3, I analyze the topicality patterns of frequently occurring Hebrew clause types by using principal component analysis. I present the results in charts, which show how clause types with similar topicality patterns cluster together. For each cluster of clause types, I present and discuss the statistics showing the topicality patterns and classify them according to functional voice categories. I do this separately for clause types found in the narrative corpus and those found in the directive discourse corpus.

In Chapters 4, 5, and 6, I analyze topicality patterns of Hebrew clause types by using a somewhat different approach. I group frequent and infrequent clause types sharing particular syntactic characteristics together to form amalgamated clause types. For each amalgamated clause type, I present and discuss the statistics showing the topicality patterns and classify them according to functional voice categories. In Chapter 4, I discuss amalgamated clause types based on different ways of marking the object. In Chapter 5, I discuss amalgamated clause types based on various constituent orders, combined with the feature of whether the subject and object is nominal or pronominal. I also discuss the functions of subject fronting and object fronting. In Chapter 6, I discuss amalgamated clause types based on the verb conjugation, combined with the feature of whether the verb is morphologically active or passive.

CHAPTER 3

CLUSTERING OF HEBREW CLAUSE TYPES

In this chapter, I apply the methodology described in Chapter 2 to Hebrew clause types. First, I analyze all the semantically transitive clauses in the narrative and directive discourse corpora using principal component analysis. I apply the results to clause types that occur ten or more times in either the narrative or directive discourse corpus. The results are presented in charts, which show how clause types with similar topicality patterns cluster together. For each cluster of clause types, I present and discuss the statistics showing the topicality patterns and classify them according to functional voice categories. I do this separately for clause types found in the narrative corpus and those found in the directive discourse corpus.

Before examining the clustering of the topicality patterns of common Hebrew clause types, I will present the topicality measures for the entire sample of the syntactically or semantically transitive clauses found in the narrative corpus and the directive discourse corpus. There are 991 such clauses in the narrative corpus and 926 in the directive discourse corpus. I calculated these measures, as well as those throughout this dissertation, using the statistical package R (R Development Core Team 2004). The topicality measures are given in Tables 9 and 10.

TABLE 9
**TOPICALITY MEASURES FOR SEMANTICALLY
TRANSITIVE CLAUSES IN NARRATIVE**

n=991

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	62%	34%	High: 3-10	60%	34%
2-3	Med.: 9-9.5	15%	12%			
4-19	Low: 1-8	11%	15%	Low: 0-2	40%	66%
>19 Reactiv.	V. Low: 0.5	2%	6%			
20 New	V. Low: 0	11%	33%			
Standard Deviation	3.35	4.58		Standard Dev.	3.01	2.96
Mean Anaphoric Continuity	8.28	5.48		Mean Topic Pers.	3.85	2.41
Mean Anaphoric Continuity Difference	2.80			Mean Topic Persistence Dif.	1.44	
Mean Referential Distance	4.32	9.71				

TABLE 10
**TOPICALITY MEASURES FOR SEMANTICALLY
TRANSITIVE CLAUSES IN DIRECTIVE DISCOURSE**

n=926

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	65%	34%	High: 3-10	59%	23%
2-3	Med.: 9-9.5	14%	9%			
4-19	Low: 1-8	5%	7%	Low: 0-2	41%	77%
>19 Reactiv.	V. Low: 0.5	0.4%	1%			
20 New	V. Low: 0	16%	49%			
Standard Deviation	3.66	4.81		Standard Dev.	3.22	2.31
Mean Anaphoric Continuity	8.15	4.75		Mean Topic Pers.	4.00	1.58
Mean Anaphoric Continuity Difference	3.40			Mean Topic Persistence Dif.	2.42	
Mean Referential Distance	4.54	11.02				

In this dissertation, I have included large number of tables set out following the pattern of Tables 9 and 10. I will give a fairly detailed explanation of the significance of

each set of figures here, to serve as a guide to aid the reader in the interpretation of all similar tables.

The left hand side of the tables gives various measures of anaphoric continuity. There are two variables used to measure this, referential distance and anaphoric continuity per se. I have divided all the possible values of these two variables into five groups, which are characterized by degree of topicality: high, medium low, or very low. I have divided the very low category in two: reactivated referents and new referents. Both of these are given the same score of twenty according to the referential distance variable, but their scores are differentiated in the anaphoric continuity variable. The first five rows of the third and fourth columns of the table give the percentages of actors and undergoers which fall into each of the five groupings of the variables. An examination of Table 9 shows that in narrative transitive clauses as a whole, actors are much more topical than undergoers, since 62% have high anaphoric continuity, with another 15% having medium continuity, a total of 77%. The equivalent figures for undergoers are: $34\% + 12\% = 46\%$. One can also see that new referents typically occur in the undergoer role, since a third (33%) of undergoers are new referents, whereas only 11% of actors are new referents. A comparison with Table 10 shows the pattern is not very different, except that the tendency for undergoers to be new referents is more pronounced: 49% of undergoers are new referents.

In the final four rows of the left hand side of the table, I give further figures relating to anaphoric continuity. Standard deviation measures the relative spread of the values of the anaphoric continuity variable. For example in Table 10, the relatively high standard deviation for undergoers (4.81) is explained by the fact that most of the values lie at the two extremes of the scale: 34% with value ten, and 49% with value zero. In contrast to this, for actors, more of the values cluster at the high end of the scale, so the standard deviation is lower at 3.66.

Mean anaphoric continuity is directly related to the relative clustering of values as expressed in the percentages in the first five rows. For example, in Table 10 the mean anaphoric continuity for actors is 8.15. This derives from the fact that most of the values are in the range of nine to ten ($65\% + 14\% = 79\%$), but there are 16% with a value of zero, and these cause the mean to drop to the value 8.15. The mean anaphoric continuity for undergoers is 4.75, which is virtually right in the middle of the total possible range of anaphoric continuity. This reflects the fact that about half of the values ($34\% + 9\% = 43\%$) are at the top end of the range, and 49% are at the minimum score of zero.

The mean anaphoric continuity difference is calculated by subtracting the mean anaphoric continuity for undergoers from that for actors. For example, in Table 10: $8.15 - 4.75 = 3.40$. This relatively high value indicates that actors are significantly more topical than undergoers in directive discourse. In Table 9 the mean anaphoric continuity difference is somewhat less at 2.80. This is due to the relatively higher mean anaphoric continuity of undergoers in narrative (5.48), whereas the mean anaphoric continuity of undergoers in directive discourse is less at 4.75. This leads to the important observation that undergoers in narrative are somewhat more topical than undergoers in directive discourse. This is related to my earlier observation that a higher proportion of referents in directive discourse are new referents. Another way of expressing these observations is to say that in narrative, the same undergoer tends to persist longer, and hence be more topical, whereas in directive discourse, there is a quicker turnover of undergoers, with a larger proportion of new referents.

Mean referential distance is calculated in the same way as mean anaphoric continuity, except it is based on the referential distance values. A key difference between the two is that their polarity is different: whereas high values of mean anaphoric continuity indicate high topicality, high values of mean referential distance indicate low

topicality. In Table 9, for example, the mean referential distance for actors of 4.32 indicates higher topicality than the mean referential distance of undergoers of 9.71.

On the right hand side of the tables, I show measures of cataphoric importance, which is measured by the topic persistence variable. I divide the values into two groups, indicating high and low topicality. A comparison of Table 9 and 10 shows that the figures for actors are almost the same: in narrative 60% of actors have high topicality as measured by topic persistence, whereas the figure for directive discourse is 59%. In contrast to this, there is a significant difference in the topic persistence of undergoers in the two genres. In narrative, in Table 9, 66% of undergoers have low topic persistence, whereas in directive discourse in Table 10 the figure is 77%. This difference is also indicated by the mean topic persistence values: the figure for undergoers in Table 9 is 2.41, whereas the figure in Table 10 is lower at 1.58. Another way of expressing this is to say that in narrative, the average undergoer occurs about two and a half times in the following ten clauses, but in directive discourse the average undergoer only occurs about one and a half times. This difference in topicality can also be seen in the mean topic persistence difference values. The figure for narrative is 1.44, which can be interpreted to mean that the average actor in narrative has about one and a half more occurrences in the next ten clauses than the average undergoer does. The mean topic persistence value for directive discourse is 2.42, which can be interpreted to mean that the average actor in directive discourse has about two and a half more occurrences in the next ten clauses than the average undergoer does. Those extra occurrences indicate greater relative topicality.

In examining the tables presenting topicality measures for each individual clause type or cluster of clause types, it may be helpful to compare the figures with those in Tables 9 and 10. The weak hypothesis of the present study is that there will be a significant difference between the topicality measures of certain individual clause types as compared to that of the overall samples of clauses. The hypothesis would be sustained

if the mean values for the variables in particular clause types differ significantly from the mean values shown in Tables 9 or 10. It would also strengthen the hypothesis if the standard deviations of the variables for particular clause types are less than the standard deviation of the overall sample; that would indicate that the values for those variables are tending to cluster more closely together. On the other hand, if the particular features I have chosen to define clause types have no correlation with the topicality variables, then one would expect that the mean values and standard deviations for particular clause types would not differ greatly from those of the overall samples, or would differ in a random fashion. Such a lack of patterning would falsify the hypothesis. To aid the reader, I have marked with an asterisk those standard deviation figures in the tables in the following chapters that are greater than those of the overall samples found in Tables 9 and 10.

Principal Component Analysis

The purpose of clustering clause types is to discern through statistical techniques which clause types are most similar to one another. One simple way of doing that would be to compare the means of the four principal variables: actor and undergoer anaphoric continuity, as well as actor and undergoer topic persistence. But a problem with this approach is that the four variables are not independent. One expects that there would be a significant correlation between the variables of actor anaphoric continuity and actor topic persistence, as well as between the two undergoer variables. If clustering is done on the basis of variables that are correlated with one another, it means that to some extent one is measuring the same factor twice. This may mean that some factors are given more weight in the clustering process than others, which might skew the result.

One way to avoid this problem is to do principal component analysis (PCA) to identify underlying differences between the variables, after the common correlations are extracted. Jolliffe describes this statistical technique as follows:

The central idea of principal component analysis is to reduce the dimensionality of a data set in which there are a large number or interrelated variables, while retaining as much as possible of the variation present in the data set. This reduction is achieved by transforming to a new set of variables, the principal components, which are uncorrelated, and which are ordered so that the first few retain most of the variation present in *all* the original variables (1986:v).

The new set of independent variables, called PCA scores, are derived by means of weightings for the original variables, called PCA loadings. Each PCA score is a linear combination of the original variables using different PCA loadings. Besides having the property of not being correlated with one another, these PCA scores also have a more normal distribution than the original variables. Each PCA score can be related to the values of a certain combination of the original variables.¹

Tables 11 and 12 show the PCA loadings for three PCA scores derived from the four main variables, for narrative and directive discourse respectively:²

TABLE 11
PCA LOADINGS FOR FOUR VARIABLES IN NARRATIVE

Variable	PC1	PC2	PC3
Actor topic persistence	0.1992682705	0.6773142460	-0.6511883835
Undergoer topic persistence	-0.6685927784	0.2365842170	-0.2416350963
Actor anaphoric continuity	0.1693670481	0.6837967129	0.6872062512
Undergoer anaph. continuity	-0.6961254600	0.1330239671	0.2128702369

¹ For a brief description of principal component analysis, see “Principal Component Analysis” (2004). Jolliffe (1986) gives a detailed treatment. Henceforth I will use the abbreviation PCA when the term is used adjectively to modify another noun, such as PCA score or PCA loading.

² The principal component analysis provided a fourth PCA score, in addition to the three shown, but it showed little variation between the clause types, so is not shown here.

TABLE 12**PCA LOADINGS FOR FOUR VARIABLES IN DIRECTIVE DISCOURSE**

Variable	PC1	PC2	PC3
Actor topic persistence	0.5677771828	0.3984810063	0.4073566459
Undergoer topic persistence	-0.4466957112	0.5351176772	0.6212417858
Actor anaphoric continuity	0.4993096316	0.5284800711	-0.4124918273
Undergoer anaph. continuity	-0.4783115136	0.5249483532	-0.5272283180

The PCA scores can be interpreted as follows: PC1 measures the relative topicality of actor versus undergoer. It will have positive values when the overall topicality of the actor, as measured by topic persistence and anaphoric continuity, is higher than the overall topicality of the undergoer. It will have negative values when the overall topicality of the undergoer is higher than that of the actor.

PC2 measures overall topicality. It will have positive values when the overall topicality of both actor and undergoer is relatively high in relation to the total sample of clauses. It will have negative values when their overall topicality is relatively low.³

PC3 measures topicality as indicated by topic persistence versus topicality as indicated by anaphoric continuity. It will have positive values when overall topic persistence of actor and undergoer is relatively high, whereas overall anaphoric continuity is relatively low. It will have negative values when the opposite case holds.

The easiest PCA scores to interpret are PC1 and PC2, so it is illuminating to cluster commonly occurring basic clause types based on these two derived variables.

³ In the initial figures given by the R statistical package, PC2 values for directive discourse had negative values, whereas PC2 values for narrative were positive, that is, they had reverse polarity. Since polarity is arbitrary in principal component analysis, I have adjusted the directive discourse PC2 values to positive polarity, so the polarity of the two discourse types will be the same on the plots.

Evaluating the Effect of Person

One factor that needs to be considered prior to any clustering procedure is whether basic clause types should be subdivided based on the person of the subject and object. As mentioned earlier, each clause has been classified into four categories based on whether the subject and/or the object is either first or second person, or else third person. If it is evident that the topicality patterns of these four person categories within a particular basic clause type are quite different from each other, then it would be best not to treat that basic clause type as a unity, but rather to investigate each person category separately. On the other hand, if it is evident that the four person categories do not show a distinct patterning, then one can investigate the basic clause type as a whole when it comes to applying a clustering procedure.

One way of discerning whether or not the person categories give rise to different topicality patterns is by plotting the values of PC1 and PC2 for all the clauses within one basic clause type, showing each person category separately. If the clauses of a certain person category tend to appear in a different part of the chart from another category, that would indicate that they have a different topicality pattern.

In Figures 1, 2, and 3, this procedure is carried out for twelve commonly occurring basic clause types in directive discourse. First and second person subjects and objects are very common in directive discourse. They are relatively rare in narrative, and in the present corpus are restricted to narrative poetry.⁴ Figure 4 shows four basic clause types in narrative that have high frequencies of first and second person subjects and objects. In the legends, the abbreviation S12 means "first or second person subject." The abbreviation O12 means "first or second person object."

⁴ Whereas elsewhere in this dissertation the order of presentation is narrative first and directive discourse second, the order is reversed in this section to reflect the relatively frequency of first and second person subjects in the two genres.

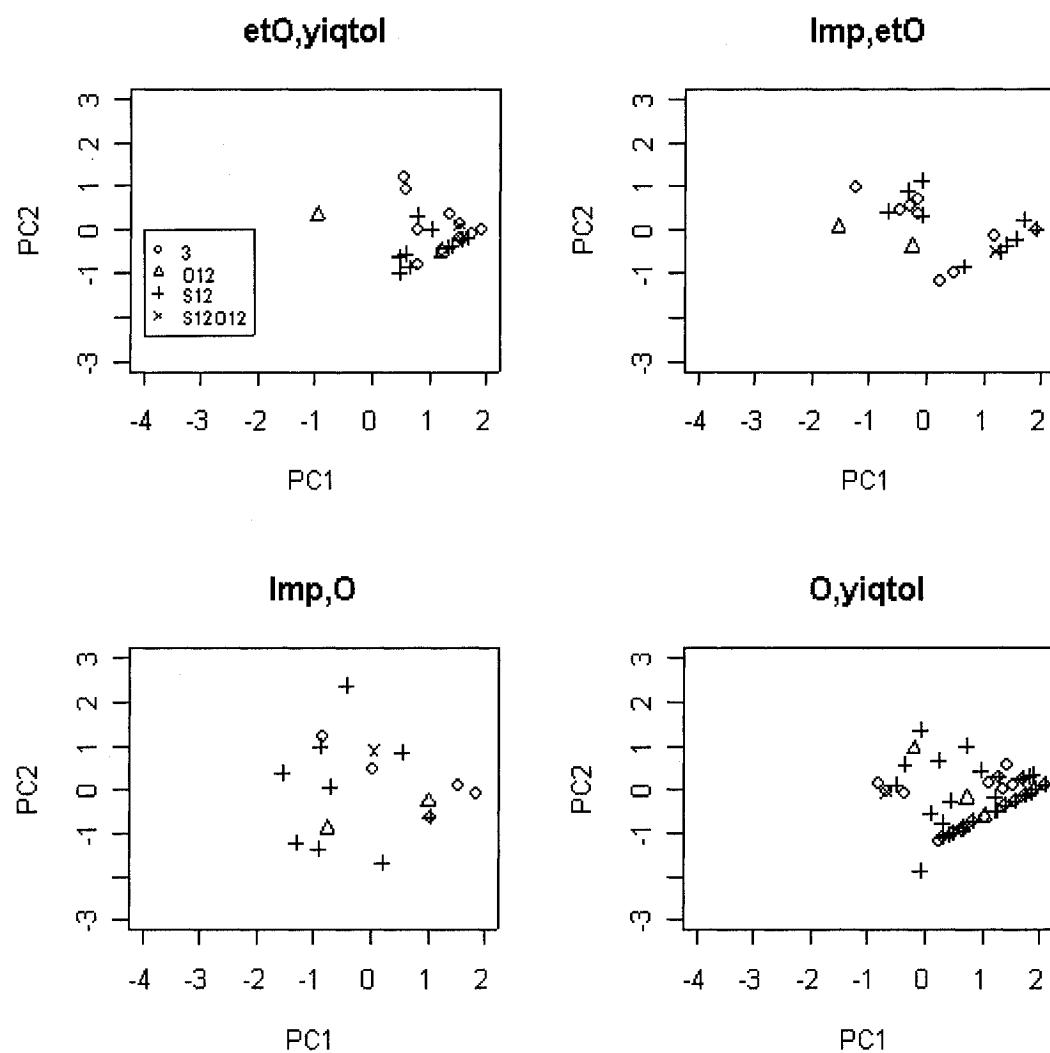
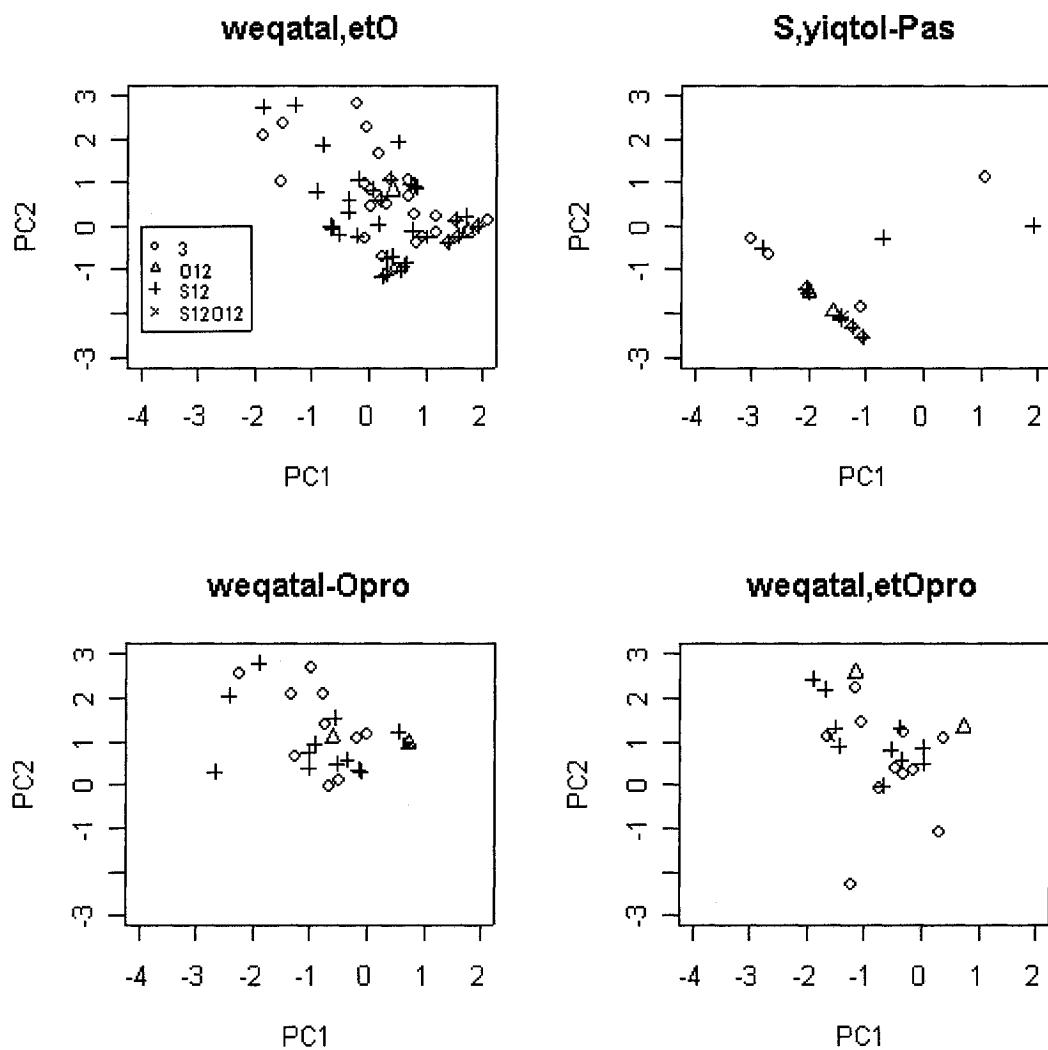


FIGURE 1

PC1 AND PC2 PLOTTED FOR FOUR BASIC CLAUSE TYPES IN DIRECTIVE DISCOURSE

**FIGURE 2**

PC1 AND PC2 PLOTTED FOR FOUR BASIC CLAUSE TYPES IN DIRECTIVE DISCOURSE

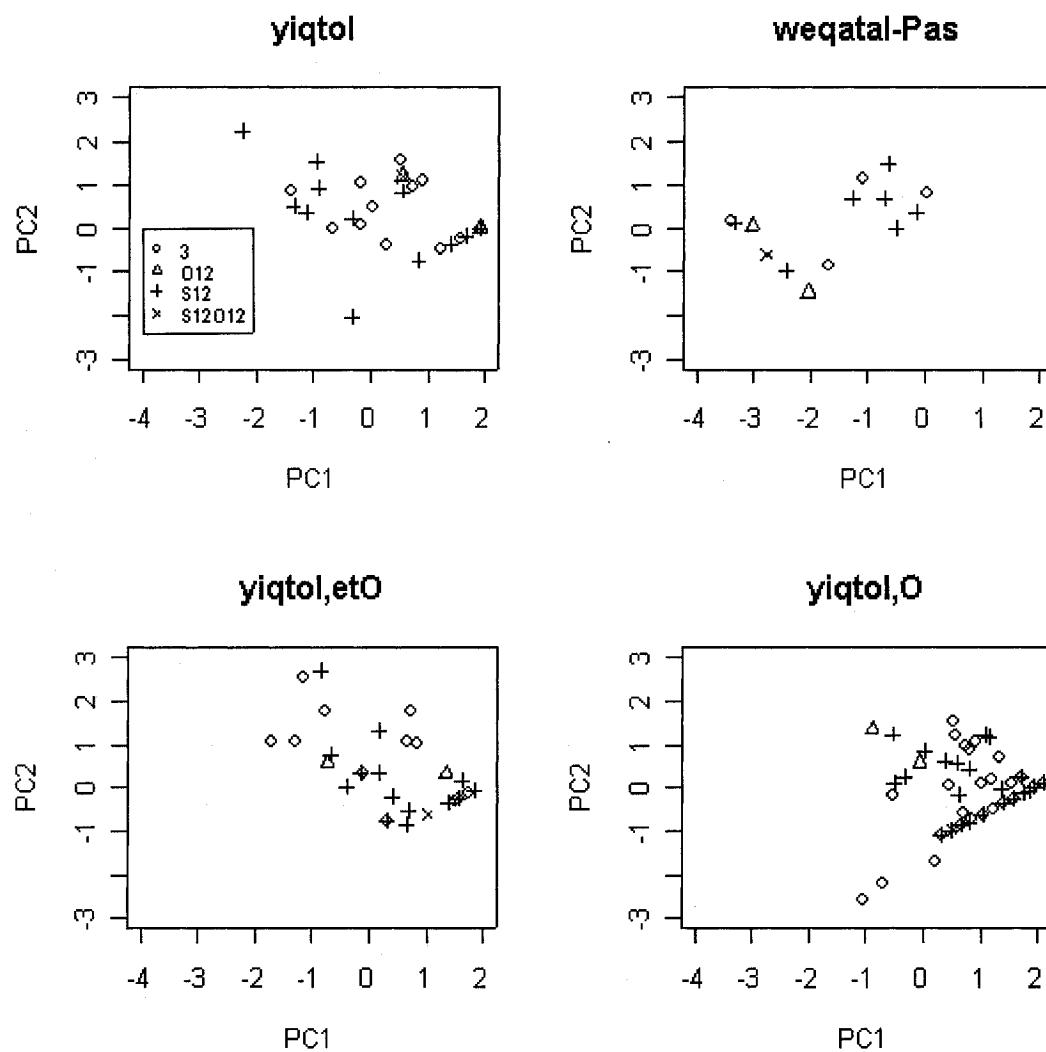
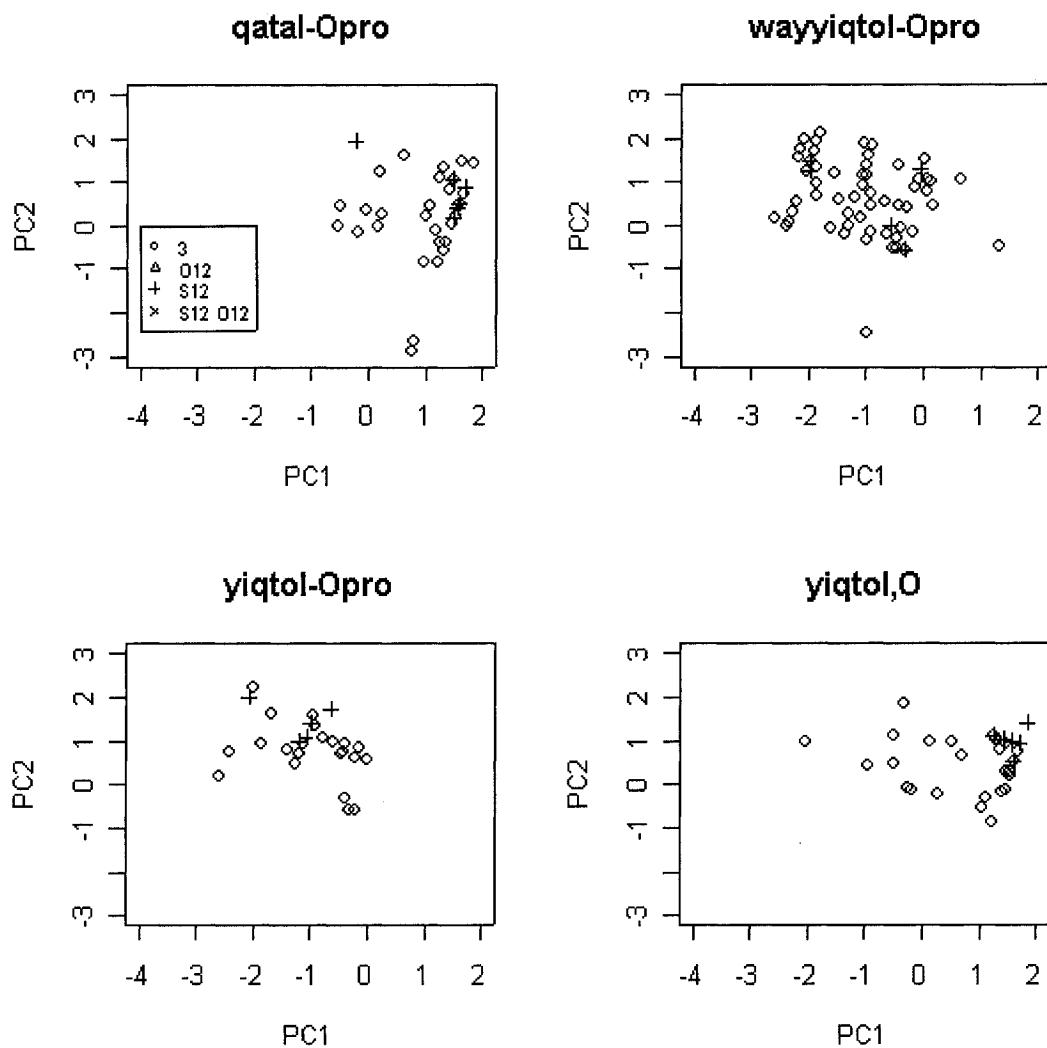


FIGURE 3

PC1 AND PC2 PLOTTED FOR FOUR BASIC CLAUSE TYPES IN DIRECTIVE DISCOURSE

**FIGURE 4**

PC1 AND PC2 PLOTTED FOR FOUR BASIC CLAUSE TYPES IN NARRATIVE

An examination of the twelve plots in Figures 1, 2, and 3 reveals that there is no distinct patterning based on person categories. Rather the different person categories tend to appear in the same parts of the plots all mixed together. The plots of other

common basic clause types not included in Figures 1, 2, and 3 also show no distinct patterning.

In Figure 4, the **yiqtol,O** clause type does show a tendency for the clauses with first or second person subjects to cluster at the right-hand side of the plot. This tendency is also evident to a lesser extent for **qatal-Opro**. This indicates that for these clause types, the relative topicality of actor as compared to undergoer for clauses with first or second person subjects is higher than for clauses with third person subjects. But these are the only basic clause types for which such a pattern is observed. And even with these two clause types, there are plenty of third person subject clauses in the same part of the plot as the first and second person subject clauses.

The implication of this is that, with two possible exceptions in narrative, the expected higher topicality of first and second person subjects and objects compared to third person subjects and objects is not evident at the level of basic clause types. Hence it is appropriate to treat each basic clause type as a unified category when it comes to clustering procedures.

Clustering Common Clause Types in Narrative

Figure 5 shows all basic clause types from the narrative corpus with a sample size of ten or more plotted according to the mean values of PC1 and PC2 for each clause type. There are twenty-four such clause types, including the four shown in Figure 4.

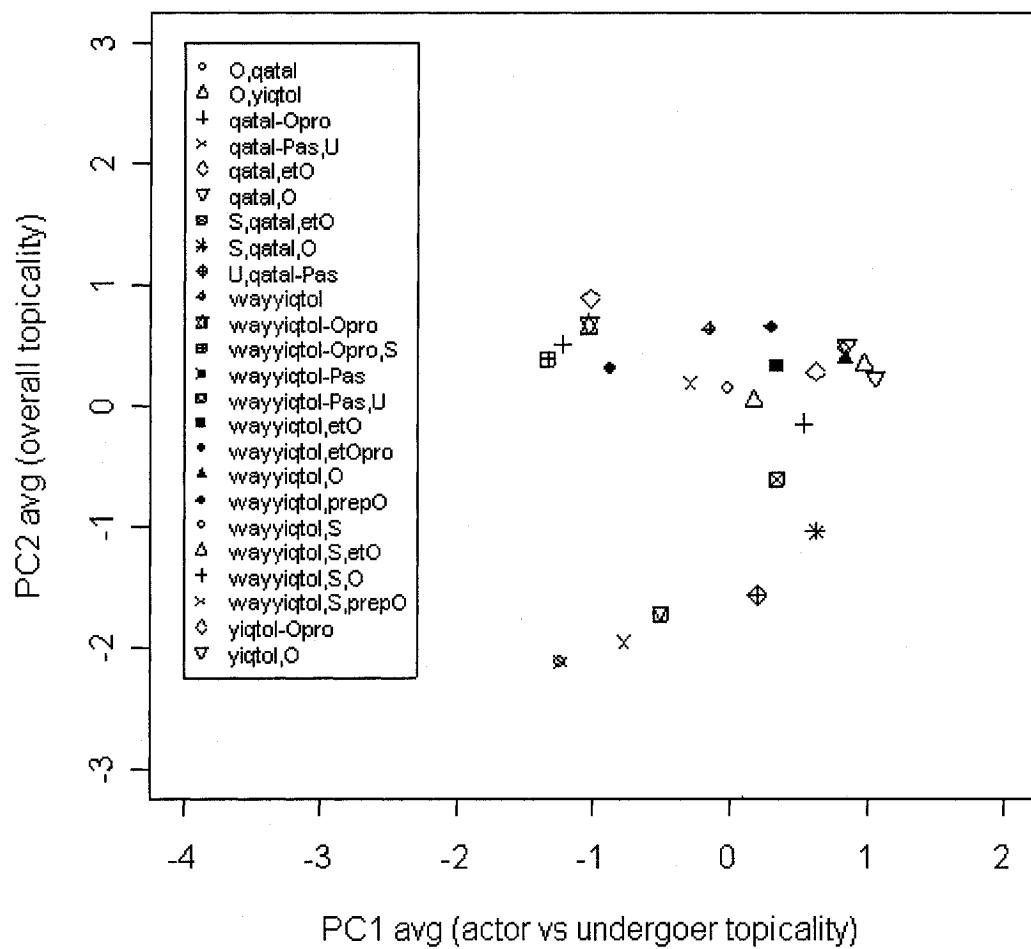


FIGURE 5

MEANS OF PC1 AND PC2 FOR BASIC CLAUSE TYPES IN NARRATIVE WITH 10+ EXAMPLES

Examination of Figure 5 shows three clusters in the top half of the plot and a string of clause types across the bottom of the plot. I examine and classify these in the

following examples, the raw referential distance and the topic persistence of the actor and undergoer are given.⁵

'they did not keep God's covenant'	לֹא שִׁמְרוּ בְּרִית אֱלֹהִים		
qatal, O (Ps. 78:10a, NIV)			
RRD Actor: 1	Und.: New	TP Actor: 2	Und.: 0
'and they inherited the labour of the people'	וַיַּעֲמַל לְאָמִים יִרְשֶׁה		
O,yiqtol (Ps. 105:44b, KJV)			
RRD Actor: 1	Und.: New	TP Actor: 2	Und.: 0

The topicality measures for this cluster of six clause types are shown in Table 14.

TABLE 14

**TOPICALITY MEASURES FOR ANTI PASSIVE
FUNCTIONAL VOICE CLUSTER IN NARRATIVE**

n=230

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	82%	10%	High: 3-10	76%	16%
2-3	Med.: 9-9.5	12%	6%			
4-19	Low: 1-8	5%	13%	Low: 0-2	24%	84%
>19 Reactiv.	V. Low: 0.5	0%	6%			
20 New	V. Low: 0	1%	66%			
Standard Deviation		1.25	3.85	Standard Dev.	2.85	2.34
Mean Anaphoric Continuity		9.68	2.31	Mean Topic Pers.	5.04	1.33
Mean Anaphoric Continuity Difference		7.37		Mean Topic Persistence Dif.	3.71	

By both topicality measures shown in Table 14, actors are much more topical than undergoers. High actor topic persistence exceeds high undergoer topic persistence by a large margin: 76% - 16% = 60%. Undergoer topicality is low: only 16% have high

⁵ As mentioned in Chapter 2, a raw referential distance of more than 20 is assigned a referential distance score of 20, and an anaphoric continuity score of 0.5. A new referent is assigned a referential distance score of 20, and an anaphoric continuity score of 0.

cataphoric importance;⁶ and only 16% have high or medium anaphoric continuity. This indicates that the topicality of the undergoer is demoted. According to the guidelines for identifying functional voice, this clause type cluster matches the category of antipassive functional voice.

Active Functional Voice Cluster

The next cluster, just to the left of the first cluster in Figure 5, consists of seven clause types, six of which form the shape of a cup. The active functional voice cluster is made up of the clause types shown in Table 15, listed in decreasing order of mean PC1.

TABLE 15
PC1 AND PC2 AVERAGES FOR ACTIVE FUNCTIONAL VOICE CLUSTER IN NARRATIVE

Clause Type	Occurrences	Mean PC1	Mean PC2
wayyiqtol,S,O	30	0.544	-0.151
wayyiqtol,etO	74	0.337	0.331
wayyiqtol,prepO	22	0.301	0.662
wayyiqtol,S,etO	114	0.181	0.051
wayyiqtol,S	22	-0.012	0.158
wayyiqtol	38	-0.153	0.635
wayyiqtol,S,prepO	22	-0.293	0.187

Below and to the right of the six clause types which form a cup is the seventh clause type in the cluster, **wayyiqtol,S,O**. It is almost equidistant to the antipassive functional voice cluster, the active functional voice cluster, and the low topicality active

⁶ In the discussion of topicality patterns, I use the term cataphoric importance interchangeably with topic persistence. Technically, one could distinguish the two terms by saying that cataphoric importance is the underlying feature being measured by the variable of topic persistence.

functional voice cluster. I have assigned it to the active functional voice cluster because the distance to the nearest member of that cluster is 0.434, slightly less than the distance to the nearest member of the antipassive functional voice cluster (0.448).

In terms of PCA scores, the mean PC1 scores are between -0.3 and 0.6, indicating that the actor is slightly more topical than the undergoer. The mean PC2 scores are between -0.2 and 0.7 indicating that overall topicality is slightly on the high side. Syntactically, these clause types share the feature of using the *wayyiqtol* verb conjugation, but are diverse in terms of the coding of subject and object. Some have a nominal subject; others do not. The following are examples:

'They cut off his head'	וַיִּקְרֹתּוּ אֶת־רָאשׁוֹ
wayyiqtol,etO (1 Sa. 31:9a, NIV)	
RRD Actor: 1	Und.: New
TP Actor: 5	Und.: 0
'He rebuked the Red Sea,'	וַיִּנְצַר בְּיַם־סֻףּ
wayyiqtol,prepO (Ps. 106:9a, NIV)	
RRD Actor: 1	Und.: 2
TP Actor: 6	Und.: 3

The topicality measures for this cluster of seven clause types are shown in Table 16.

TABLE 16

**TOPICALITY MEASURES FOR ACTIVE FUNCTIONAL
VOICE CLUSTER IN NARRATIVE**

n=322

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	59%	27%	High: 3-10	68%	30%
2-3	Med.: 9-9.5	23%	15%			
4-19	Low: 1-8	14%	19%	Low: 0-2	32%	70%
>19 Reactiv.	V. Low: 0.5	2%	10%			
20 New	V. Low: 0	1%	30%			
Standard Deviation		2.15	4.47	Standard Dev.	2.84	2.50
Mean Anaphoric Continuity		9.01	5.34	Mean Topic Pers.	4.34	2.04
Mean Anaphoric Continuity Difference		3.67		Mean Topic Persistence Dif.	2.30	

By both topicality measures, the actor is significantly more topical than the undergoer. Actor high topic persistence exceeds high undergoer topic persistence by a large margin: 68% - 30% = 38%. The undergoer retains considerable topicality by both measures, and especially in terms of anaphoric continuity: 42% of undergoers have high or medium anaphoric continuity. Hence this clause type cluster matches the category of active functional voice.

Semi-active Functional Voice Cluster

The next cluster, on the upper left part of Figure 5, is made up of the five clause types shown in Table 17, listed in decreasing order of mean PC1:

TABLE 17

PC1 AND PC2 AVERAGES FOR SEMI-ACTIVE FUNCTIONAL VOICE CLUSTER IN NARRATIVE

Clause Type	Occurrences	Mean PC1	Mean PC2
wayyiqtol,etOpro	14	-0.876	0.323
yiqtol-Opro	33	-1.019	0.890
wayyiqtol-Opro	70	-1.034	0.671
qatal-Opro	10	-1.219	0.509
wayyiqtol-Opro,S	13	-1.334	0.397

In terms of PCA scores, the mean PC1 scores are between -0.8 and -1.4, indicating that the undergoer is more topical than the actor. The mean PC2 scores are between 0.3 and 0.9, indicating that overall topicality is relatively high. Syntactically these five clause types share the feature of having the undergoer coded as a pronoun. The following are examples:

'also he armed him with a coat of mail.'

wayyiqtol,etOpro (1 Sa. 17:38c, KJV)

RRD Actor: 1 Und.: 1 TP Actor: 1

Und.: 10

'He found him in a desert land,'

yiqtol-Opro (Deu. 32:10a, KJV)

RRD Actor: 1 Und.: 1 TP Actor: 4

וַיִּמְצָא הָיָי בָּאָרֶץ מִדְבָּר

Und.: 5

The topicality measures for this cluster of clause types are shown in Table 18.

TABLE 18

TOPICALITY MEASURES FOR SEMI-ACTIVE
FUNCTIONAL VOICE CLUSTER IN NARRATIVE

n=140

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	84%	76%	High: 3-10	69%	66%
2-3	Med.: 9-9.5	7%	19%			
4-19	Low: 1-8	7%	3%	Low: 0-2	31%	34%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	1%	1%			
Standard Deviation	1.54	1.62	Standard Dev.	2.74	3.48*	
Mean Anaphoric Continuity	9.58	9.57	Mean Topic Pers.	4.21	4.73	
Mean Anaphoric Continuity Difference	0.01		Mean Topic Persistence Dif.	-0.52		

Both topicality measures indicate that actor and undergoer have high topicality and their relative topicality is about the same. With regard to anaphoric continuity, the actor and the undergoer have virtually the same topicality, especially when measured by mean anaphoric continuity, which differs by only 0.01. Although the percentage of actors with high anaphoric continuity is higher (84% versus 76%), the undergoer has a higher percentage when high and medium anaphoric continuity are combined (95% versus 91%). If cataphoric importance is measured by the percentage of high cataphoric importance, actors are slightly more topical than undergoers. But as measured by mean

topic persistence, undergoers are slightly more topical. This clause type cluster does not clearly match any of Givón's functional voice categories. It lies somewhere between his categories of active functional voice and inverse functional voice. It does, however, match the category posited by Cooreman (1983:479,483) in which the topicality of actor and undergoer are about the same. One possible label might be "balanced topicality," but I will use the term "semi-active" to signify that it is halfway between active and inverse.⁷

Passive Functional Voice Cluster

The string of clause types in the lower part of Figure 5 do not form such clear clusters, but I will divide them into two clusters of contiguous clause types plus one isolate. The first cluster, on the lower left hand side of Figure 5, consists of the three clause types shown in Table 19, listed in decreasing order of mean PC1.

TABLE 19
**PC1 AND PC2 AVERAGES FOR PASSIVE FUNCTIONAL
VOICE CLUSTER IN NARRATIVE**

Clause Type	Occurrences	Mean PC1	Mean PC2
wayyiqtol-Pas,U	34	-0.506	-1.728
qatal-Pas,U	16	-0.775	-1.956
wayyiqtol-Pas	15	-1.237	-2.112

In terms of PCA scores, the mean PC1 scores are between -0.5 and -1.3, indicating that the undergoer is more topical than the actor. The mean PC2 scores are between -1.7 and -2.2, indicating that overall topicality is low. Syntactically these clause

⁷ Thanks to Suree Andersen for suggesting this term to me.

types share the feature of having a syntactically passive verb with the undergoer as subject. The following are examples:

‘The valleys of the sea were exposed’	וַיְרָא אֶפְקֵד יָם
wayyiqtol-Pas, U (2 Sa. 22:16a, NIV)	
RRD Actor: New	Und.: New
TP Actor: 0	Und.: 0
‘that Naboth had been stoned’	כִּי-סָקַל נָבֹת
qatal-Pas, U (1 Kg. 21:15b, NIV)	
RRD Actor: 5	Und.: 1
TP Actor: 0	Und.: 5

The topicality measures for this cluster of clause types are shown in Table 20.

TABLE 20

**TOPICALITY MEASURES FOR PASSIVE FUNCTIONAL
VOICE CLUSTER IN NARRATIVE**

n=65

Anaphoric Continuity			Cataphoric Importance			
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	15%	43%	High: 3-10	11%	32%
2-3	Med.: 9-9.5	3%	17%			
4-19	Low: 1-8	9%	22%	Low: 0-2	89%	68%
>19 Reactiv.	V. Low: 0.5	0%	5%			
20 New	V. Low: 0	72%	14%			
Standard Deviation		4.11*	3.88	Standard Dev.	1.51	2.64
Mean Anaphoric Continuity		2.43	7.22	Mean Topic Pers.	0.65	2.28
Mean Anaphoric Continuity Difference		-4.79		Mean Topic Persistence Dif.	-1.63	

By both topicality measures, the undergoer is more topical than the actor. The undergoer has fairly high topicality as measured by anaphoric continuity, with 60% having high or medium anaphoric continuity. As measured by cataphoric importance, undergoer topicality is not so high. By both measures, the actor is demoted in topicality, only 18% having high or medium anaphoric continuity, and only 11% having high

cataphoric importance. This clause type cluster matches the category of passive functional voice.

U,qatal-Pas Isolate

The **U,qatal-Pas** clause type represents an isolate, located in the lower right part of Figure 5. In terms of PCA scores, the mean PC1 score is 0.203, indicating that the actor is slightly more topical than the undergoer. The mean PC2 score is -1.563, indicating that overall topicality is low. The following are examples:

‘a fire was kindled against Jacob’

וְאֵשׁ נִשְׁקָה בַּיּוֹקָד

U,yiqtol-Pas (Ps. 78:21c, RSV)

RRD Actor: 1 Und.: New TP Actor: 8 Und.: 0

‘and the rain was not poured upon the earth’

וְמַטֵּר לֹא־נִפְתַּח אֶרֶץ

U,yiqtol-Pas (Ex. 9:33d, KJV)

RRD Actor: 2 Und.: New TP Actor: 3 Und.: 1

‘David's two wives had been captured-- נִשְׁבַּת אֲחִינָם הַיְזְרֵלִית

Ahinoam the Jezreelite,

וְאַבִיגַיִל אֲשֶׁת נָבָל הַכְּרֵמִילִי

and Abigail the wife of Nabal the Carmelite.’

U,yiqtol-Pas (1 Sa. 30:5, NIV)

RRD Actor: 4 Und.: 290 TP Actor: 2 Und.: 0

The first example above has sentence focus structure. The whole clause is focal and there is no clause topic. The second example has predicate focus structure, that is, topic-comment articulation, with the undergoer subject as primary topic. The third example is a rare case of argument focus. It is analyzed as argument focus since the predicate is presupposed, having occurred four clauses earlier in reference to the same event. Of the twenty-four clauses of this clause type, eight (33%) have sentence focus, fifteen (62%) have predicate focus, and one has argument focus. The topicality measures for this clause type are shown in Table 21.

TABLE 21
**TOPICALITY MEASURES FOR U,qatal-Pas IN
NARRATIVE**

n=24

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	17%	12%	High: 3-10	25%	13%
2-3	Med.: 9-9.5	12%	4%			
4-19	Low: 1-8	12%	25%	Low: 0-2	75%	87%
>19 Reactiv.	V. Low: 0.5	4%	17%			
20 New	V. Low: 0	54%	42%			
Standard Deviation	4.67*	4.25		Standard Dev.	2.38	2.39
Mean Anaphoric Continuity	3.87	3.54		Mean Topic Pers.	1.58	1.17
Mean Anaphoric Continuity Difference	0.33			Mean Topic Persistence Dif.	0.41	

By both topicality measures, the actor is slightly more topical than the undergoer.

The topicality of the undergoer is demoted, with only 16% of undergoers having medium or high anaphoric continuity, and only 13% having high cataphoric importance. However, the topicality of the actor is not that high. Even though these clauses are syntactically passive, this amalgamated clause type certainly does not match the category of passive functional voice, since one would expect the undergoer to be more topical than the actor in passive voice. It is rather enigmatic to find a morphologically passive clause with the actor more topical than the undergoer. This clause type cannot be characterized according to any functional voice category.

Low Topicality Active Functional Voice Cluster

The next cluster, in the right hand middle part of Figure 5, is made up of the two clause types shown in Table 22, listed in decreasing order of mean PC1.

TABLE 22

**PC1 AND PC2 AVERAGES FOR LOW TOPICALITY
ACTIVE FUNCTIONAL VOICE CLUSTER IN
NARRATIVE**

Clause Type	Occurrences	Mean PC1	Mean PC2
S,qatal,O	11	0.629	-1.039
S,qatal,etO	17	0.347	-0.606

In terms of PCA scores, the mean PC1 scores are between 0.3 and 0.7, indicating that the actor is more topical than the undergoer. The mean PC2 scores are between -0.6 and -1.1, indicating that overall topicality is low. Syntactically these two clause types share the features of having a preposed nominal subject and a nominal object. The following are examples:

‘and the LORD sent thunder and hail’	וַיְהִי נָתַן קָלֹת וּבָרֶד
S,qatal,O (Ex. 9:23b, KJV)	
RRD Actor: 4 Und.: 2 TP Actor: 1 Und.: 8	
‘and Jesse begat David.’	וַיְשִׁיב הָולֵיד אֶת־צָדָקָה
S,qatal,etO (Ruth 4:22b, KJV)	
RRD Actor: 1 Und.: 10 TP Actor: 0 Und.: 0	

Both examples above have predicate focus structure, that is, topic-comment articulation, with the actor subject as primary topic. Of the twenty-eight clauses of this clause cluster, twenty-five (89%) have predicate focus, and three (11%) have sentence focus. The topicality measures for this cluster of clause types are shown in Table 23.

TABLE 23

**TOPICALITY MEASURES FOR LOW TOPICALITY
ACTIVE FUNCTIONAL VOICE CLUSTER IN
NARRATIVE**

n=28

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	43%	14%	High: 3-10	25%	11%
2-3	Med.: 9-9.5	21%	7%			
4-19	Low: 1-8	18%	18%	Low: 0-2	75%	89%
>19 Reactiv.	V. Low: 0.5	7%	11%			
20 New	V. Low: 0	11%	50%			
Standard Deviation		3.74*	4.14	Standard Dev.	2.92	2.15
Mean Anaphoric Continuity		7.52	3.11	Mean Topic Pers.	1.82	1.21
Mean Anaphoric Continuity Difference		4.41		Mean Topic Persistence Dif.	0.61	

By both topicality measures, the actor is more topical than the undergoer. As measured by anaphoric continuity, actors have quite high topicality, with 64% having high or medium anaphoric continuity. Actor topicality is not very high as measured by cataphoric importance. By both measures, undergoers do not retain much topicality: only 21% have high or medium anaphoric continuity, and only 11% have high cataphoric importance. For this reason, this cluster does not closely match the category of active functional voice in terms of anaphoric continuity. The main way this cluster differs from prototypical active functional voice is the relatively low topicality of both actor and undergoer. Hence I will characterize it as low topicality active functional voice.

Clustering Common Clause Types in Directive Discourse

In Figure 6 I show all basic clause types from the directive discourse corpus with a sample size of ten or more plotted according to the mean values of PC1 and PC2 for

each clause type. There are twenty-seven such clause types, including the twelve shown in Figures 1, 2, and 3 earlier.

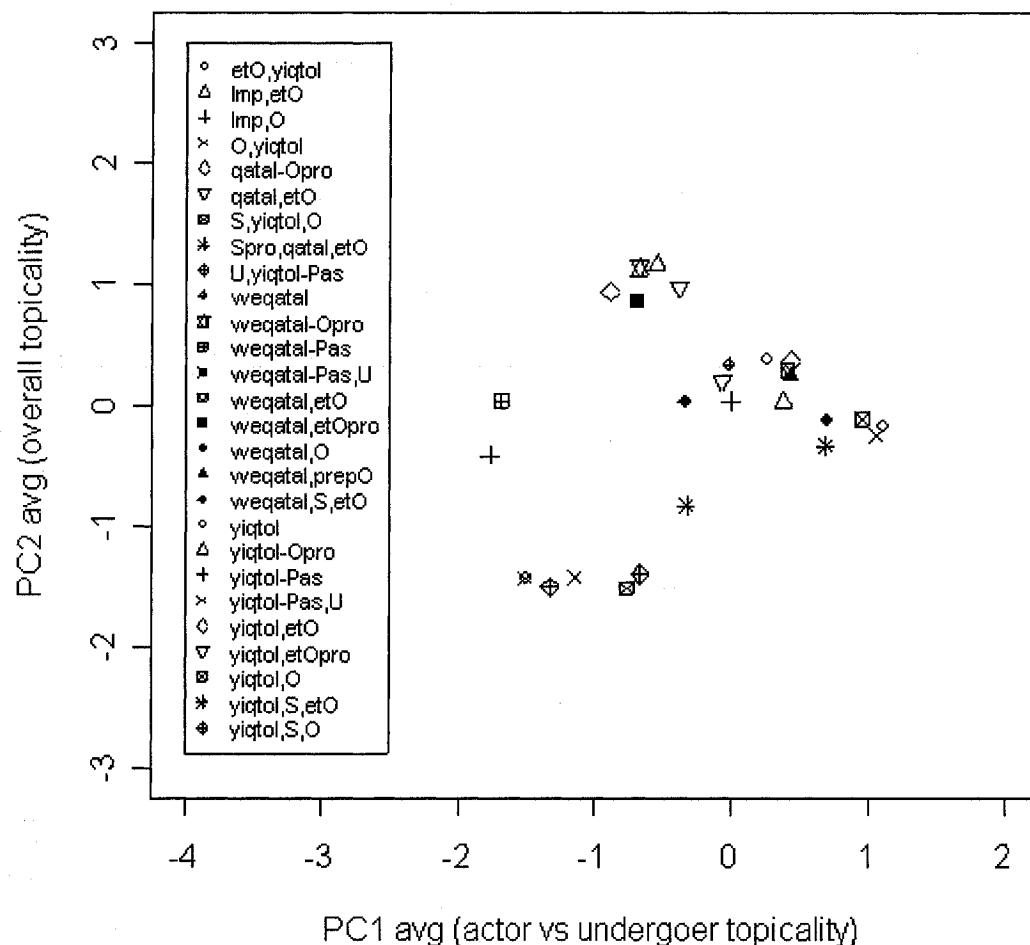


FIGURE 6

**MEANS OF PC1 AND PC2 FOR BASIC CLAUSE TYPES IN
DIRECTIVE DISCOURSE WITH 10+ EXAMPLES⁸**

⁸ Thanks to Marie South for assistance in generating this table.

Examination of Figure 6 shows six clusters and one isolate. I examine and classify these in the following subsections, starting at the right hand side of the chart and moving counterclockwise.

Antipassive Functional Voice Cluster

The first cluster consists of five clause types grouped on the right hand side of Figure 6. This cluster is made up of the clause types shown in Table 24, listed in order of their location on the plot from right to left, that is, in decreasing order of mean PC1.

TABLE 24

PC1 AND PC2 AVERAGES FOR ANTIPASSIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE DISCOURSE

Clause Type	Occurrences	Mean PC1	Mean PC2
etO,yiqtol	29	1.107	-0.161
O,yiqtol	82	1.051	-0.241
yiqtol,O	69	0.951	-0.106
weqatal,O	48	0.692	-0.117
Spro,qatal,etO	12	0.690	-0.330

In terms of PCA scores, the mean PC1 scores are between 0.6 and 1.1, indicating that the actor is more topical than the undergoer. The mean PC2 scores cluster just under zero, indicating that overall topicality is medium. Syntactically, these clause types share the features of having a nominal object, and a pronominalized subject, manifested either in the verb morphology or as a free pronoun. The following are examples:

'He must not drink grape juice,'

וְכֹל־מִשְׁרַת עֲבָדִים לֹא יֵשֶׁךְ

O,yiqtol (Num. 6:3c, NIV)

RRD Actor: 1

Und.: New

TP Actor: 10

Und.: 0

'But when you blow an alarm,'
weqatal,O (Num. 10:5a, NASB)

RRD Actor: 2 Und.: New TP Actor: 6 Und.: 4

The topicality measures for this cluster of five clause types are shown in Table 25.

TABLE 25

**TOPICALITY MEASURES FOR ANTI PASSIVE
FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

n=240

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	82%	6%	High: 3-10	76%	8%
2-3	Med.: 9-9.5	13%	5%			
4-19	Low: 1-8	3%	5%	Low: 0-2	24%	92%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	1%	82%			
Standard Deviation	1.52	3.35	Standard Dev.	3.17	1.44	
Mean Anaphoric Continuity	9.62	1.46	Mean Topic Pers.	5.40	0.73	
Mean Anaphoric Continuity Difference	8.16		Mean Topic Persistence Dif.	4.67		

By both topicality measures shown in Table 25, actors are much more topical than undergoers. High actor topic persistence exceeds high undergoer topic persistence by a large margin: $76\% - 8\% = 68\%$. Undergoer topicality is very low: only 8% have high cataphoric importance; only 11% have high or medium anaphoric continuity. This indicates that the topicality of the undergoer is demoted. According to the guidelines for identifying functional voice, this clause type cluster matches the category of antipassive functional voice.

Active Functional Voice Cluster

The next cluster, just to the left of the first cluster on Figure 6, consists of nine clause types, eight of which form the shape of an inverted cup. This cluster is made up of the clause types shown in Table 26, listed in decreasing order of mean PC1.

TABLE 26

**PC1 AND PC2 AVERAGES FOR ACTIVE FUNCTIONAL
VOICE CLUSTER IN DIRECTIVE DISCOURSE**

Clause Type	Occurrences	Mean PC1	Mean PC2
yiqtol,etO	31	0.438	0.365
weqatal,prepO	12	0.434	0.243
weqatal,etO	71	0.406	0.296
Imp,etO	22	0.384	0.034
yiqtol	27	0.258	0.391
Imp,O	17	-0.002	0.035
weqatal	17	-0.014	0.336
qatal,etO	15	-0.072	0.208
weqatal,S,etO	12	-0.343	0.039

In terms of PCA scores, the mean PC1 scores are between -0.343 and 0.438, indicating that the actor is slightly more topical than the undergoer. The mean PC2 scores are between 0 and 0.4 indicating that overall topicality is slightly on the high side. Syntactically, these clause types are quite diverse. The following are examples:

אָדָם יְר־א אֶת־יְהוָה
'Only fear the LORD,'

Imp,etO (1 Sa. 12:24a, NASB)

RRD Actor: 1 Und.: 2 TP Actor: 4

Und.: 2

מִתְנַה אַתָּה אֶת־כָּהֲנֹתֵיכֶם
'I am giving you the service of the priesthood as a gift'

yiqtol,etO (Num. 18:7c, NIV)

RRD Actor: 3 Und.: 1 TP Actor: 4

Und.: 0

The topicality measures for this cluster of nine clause types are shown in Table 27.

TABLE 27
**TOPICALITY MEASURES FOR ACTIVE FUNCTIONAL
VOICE CLUSTER IN DIRECTIVE DISCOURSE**

n=224

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	77%	30%	High: 3-10	67%	23%
2-3	Med.: 9-9.5	15%	9%			
4-19	Low: 1-8	4%	11%	Low: 0-2	33%	77%
>19 Reactiv.	V. Low: 0.5	0%	1%			
20 New	V. Low: 0	4%	48%			
Standard Deviation		1.99	4.73	Standard Dev.	3.01	2.40*
Mean Anaphoric Continuity		9.43	4.73	Mean Topic Pers.	4.50	1.62
Mean Anaphoric Continuity Difference		4.70		Mean Topic Persistence Dif.	2.88	

By both topicality measures the actor is significantly more topical than the undergoer. Actor high topic persistence exceeds high undergoer topic persistence by a large margin: $67\% - 23\% = 44\%$. The undergoer retains considerable topicality, especially in terms of anaphoric continuity: 39% of undergoers have high or medium anaphoric continuity. Hence this clause type cluster matches the category of active functional voice.

Semi-active Functional Voice Cluster

The next cluster, near the top of Figure 6, is made up of the five clause types shown in Table 28, listed in decreasing order of mean PC1:

TABLE 28

**PC1 AND PC2 AVERAGES FOR SEMI-ACTIVE
FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

Clause Type	Occurrences	Mean PC1	Mean PC2
yiqtol,etOpro	14	-0.387	0.976
yiqtol-Opro	41	-0.546	1.161
weqatal-Opro	27	-0.675	0.774
weqatal,etOpro	24	-0.698	0.852
qatal-Opro	10	-0.894	0.938

In terms of PCA scores, the mean PC1 scores are between -0.3 and -1, indicating that in terms of relative topicality of actor to undergoer, these clauses lie on the undergoer side of the median. The mean PC2 scores are between 0.7 and 1.2, indicating that overall topicality is high. Syntactically these five clause types share the feature of having the undergoer coded as a pronoun. The following are examples:

‘and give them over to the enemy,’ weqatal-Opro (1 Kg. 8:46d, NIV) RRD Actor: 1 Und.: 1 TP Actor: 4 Und.: 10	ונתֶן לְפָנֵי אֹיְבָה
‘If he selects her for his son,’ yiqtol-Opro (Ex. 21:9a, NIV) RRD Actor: 1 Und.: 1 TP Actor: 4 Und.: 4	וְאִם־לְבָנָו יַעֲשֵׂה־לָהּ

The topicality measures for this cluster of clause types are shown in Table 29.

TABLE 29

**TOPICALITY MEASURES FOR SEMI-ACTIVE
FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

n=116

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	83%	85%	High: 3-10	67%	44%
2-3	Med.: 9-9.5	11%	11%			
4-19	Low: 1-8	3%	2%	Low: 0-2	33%	56%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	3%	2%			
Standard Deviation		1.86	1.32	Standard Dev.	2.85	2.93*
Mean Anaphoric Continuity		9.52	9.74	Mean Topic Pers.	3.81	3.00
Mean Anaphoric Continuity Difference		-0.22		Mean Topic Persistence Dif.	0.81	

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. With regard to anaphoric continuity, the actor and the undergoer have almost the same topicality, with the undergoer only slightly more topical. On the other hand, actors are somewhat more topical than undergoers with regard to cataphoric importance. High actor topic persistence exceeds high undergoer topic persistence by a significant margin: $67\% - 44\% = 23\%$. By both topicality measures, actors and undergoers have considerable topicality. This clause type cluster does not clearly match any of Givón's functional voice categories. It lies somewhere between the categories of active functional voice and inverse functional voice. It is similar to the category posited by Cooreman (1983:479,483), in which the topicality of actor and undergoer are about the same, because the topicality of actor and undergoer differ from each other less than is the case in other clusters. I therefore classify it as semi-active functional voice.

Passive Functional Voice Cluster

The next cluster, on the left hand side of Figure 6, consists of the two clause types shown in Table 30, listed in decreasing order of mean PC1.

TABLE 30

PC1 AND PC2 AVERAGES FOR PASSIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE DISCOURSE

Clause Type	Occurrences	Mean PC1	Mean PC2
weqatal-Pas	15	-1.690	0.036
yiqtol-Pas	23	-1.765	-0.409

In terms of PCA scores, the mean PC1 scores are between -1.5 and -2, indicating that the undergoer is significantly more topical than the actor. The mean PC2 scores cluster around zero, indicating that overall topicality is medium. Syntactically these two clause types share the features of having a syntactically passive verb and no nominal undergoer. The undergoer subject is signalled by the verb inflection. The following are examples:

אִם־טָרַף יִטְהַרֵּךְ

‘If it is all torn to pieces,’

yiqtol-Pas (Ex. 22:13a, NASB)⁹

RRD Actor: New Und.: 1 TP Actor: 0

Und.: 2

וְנַגְבַּת מִבֵּית הָאִישׁ

‘and they are stolen from the neighbor's house,’

weqatal-Pas (Ex. 22:6b, NIV)¹⁰

RRD Actor: New Und.: 1 TP Actor: 3

Und.: 1

The topicality measures for this cluster of clause types are shown in Table 31.

⁹ In the Hebrew versification, this is Ex. 22:12a.

¹⁰ In the Hebrew versification, this is Ex. 22:7b.

TABLE 31
**TOPICALITY MEASURES FOR PASSIVE FUNCTIONAL
VOICE CLUSTER IN DIRECTIVE DISCOURSE**

n=38

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	21%	84%	High: 3-10	29%	34%
2-3	Med.: 9-9.5	5%	13%			
4-19	Low: 1-8	11%	0%	Low: 0-2	71%	66%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	63%	3%			
Standard Deviation	4.53*	1.62		Standard Dev.	2.39	2.32*
Mean Anaphoric Continuity	3.37	9.66		Mean Topic Pers.	1.63	2.50
Mean Anaphoric Continuity Difference	-6.29			Mean Topic Persistence Dif.	-0.87	

By both topicality measures the undergoer is more topical than the actor. The undergoer has very high topicality as measured by anaphoric continuity, with 97% having high or medium anaphoric continuity. As measured by cataphoric importance, undergoer topicality is not so high. As measured by anaphoric continuity, the actor is demoted in topicality, but this is not so clear with regard to cataphoric importance. Even though it does not match exactly, this clause type cluster is fairly close to the category of passive functional voice.

Low Topicality Passive Functional Voice Cluster

The next cluster, in the lower left part of Figure 6, is made up of the three clause types shown in Table 32, listed in decreasing order of mean PC1.

TABLE 32

**PC1 AND PC2 AVERAGES FOR LOW TOPICALITY
PASSIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

Clause Type	Occurrences	Mean PC1	Mean PC2
U,yiqtol-Pas	21	-1.324	-1.505
yiqtol-Pas,U	19	-1.148	-1.418
weqatal-Pas,U	12	-1.509	-1.433

In terms of PCA scores, the mean PC1 scores are between -1.1 and -1.6, indicating that the undergoer is more topical than the actor. The mean PC2 scores are between -1.4 and -1.6, indicating that overall topicality is low. Syntactically these three clause types share the features of having a syntactically passive verb and a nominal undergoer subject. The following are examples:

וְהַנּוֹתֶר עַד־יּוֹם הַשְׁלִישִׁי בְּאֵשׁ יִשְׂרָף
'but what remains until the third day
shall be burned with fire'

U,yiqtol-Pas (Lev. 19:6b, NIV)
RRD Actor: New Und.: 1 TP Actor: 0 Und.: 5

וְכִי יִפְנוּמִים עַל־זָרָע
'But if water has been put on the seed,'
yiqtol-Pas,U (Lev. 11:38a, NIV)
RRD Actor: New Und.: New TP Actor: 0 Und.: 0

The topicality measures for this cluster of clause types are shown in Table 33.

TABLE 33

**TOPICALITY MEASURES FOR LOW TOPICALITY
PASSIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

n=52

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	10%	27%	High: 3-10	8%	13%
2-3	Med.: 9-9.5	10%	13%			
4-19	Low: 1-8	0%	12%	Low: 0-2	92%	87%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	81%	48%			
Standard Deviation		3.84*	4.71	Standard Dev.	2.24	1.55
Mean Anaphoric Continuity		1.86	4.70	Mean Topic Pers.	0.77	0.96
Mean Anaphoric Continuity Difference		-2.84		Mean Topic Persistence Dif.	-0.19	

By both topicality measures the undergoer is slightly more topical than the actor.

But neither the undergoer nor the actor has high topicality, especially with regard to cataphoric importance. The most common use of this amalgamated clause type is when both the actor and the undergoer are new referents. Even though these clauses are syntactically passive, this amalgamated clause type does not match the category of passive functional voice, since the topicality of the undergoer is not much more than that of the actor. Rather, it falls into a category not covered in Givón's system, where both actor and undergoer have low topicality, and the undergoer slightly more topical than the actor. Hence I will characterize it as low topicality passive functional voice.

Low Topicality Active Functional Voice Cluster

The next cluster, in the lower middle part of Figure 6, is made up of the two clause types shown in Table 34, listed in decreasing order of mean PC1.

TABLE 34

**PC1 AND PC2 AVERAGES FOR LOW TOPICALITY
ACTIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

Clause Type	Occurrences	Mean PC1	Mean PC2
yiqtol,S,O	11	-0.668	-1.402
S,yiqtol,O	10	-0.768	-1.516

In terms of PCA scores, the mean PC1 scores are between -0.5 and -0.8, indicating that in terms of relative topicality of actor to undergoer, these clauses lie on the undergoer side of the median. The mean PC2 scores are between -1.4 and -1.6, indicating that overall topicality is low. Syntactically these two clause types share the features of having a nominal subject and nominal object. The following are examples:

וְאֵלֶּל מִנְבָּלְתָּה יַכְבִּס בְּנֵדִי
'Anyone who eats some of the carcass
must wash his clothes,'

S,yiqtol,O (Lev. 11:40a, NIV)
RRD Actor: New Und.: New TP Actor: 1 Und.: 0

וְאַחֲרַי שְׁתַּחַת הַנְּזִיר יִשְׁתַּחַת
'After that, the Nazirite may drink wine.'

yiqtol,S,O (Num. 6:20c, NIV)
RRD Actor: 3 Und.: 37 TP Actor: 2 Und.: 0

The first example above has sentence focus structure. The whole clause is focal and there is no clause topic. The second example has predicate focus structure, that is, topic-comment articulation, with the actor subject as primary topic. Of the twenty-one clauses of this clause cluster, sixteen (76%) have sentence focus and five (24%) have predicate focus. The topicality measures for this cluster of clause types are shown in Table 35.

TABLE 35

**TOPICALITY MEASURES FOR LOW TOPICALITY
ACTIVE FUNCTIONAL VOICE CLUSTER IN DIRECTIVE
DISCOURSE**

n=21

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	14%	5%	High: 3-10	33%	29%
2-3	Med.: 9-9.5	5%	5%			
4-19	Low: 1-8	5%	0%	Low: 0-2	67%	71%
>19 Reactiv.	V. Low: 0.5	0%	5%			
20 New	V. Low: 0	76%	86%			
Standard Deviation	4.09*	2.93		Standard Dev.	2.34	2.38*
Mean Anaphoric Continuity	2.21	0.95		Mean Topic Pers.	2.43	1.62
Mean Anaphoric Continuity Difference	1.26			Mean Topic Persistence Dif.	0.81	

By both topicality measures the actor is slightly more topical than the undergoer.

But neither the undergoer nor the actor has high topicality, especially with regard to anaphoric continuity. Only 19% of actors have high or medium anaphoric continuity, and only 10% of undergoers. This cluster does not match the category of active functional voice in terms of anaphoric continuity, since the undergoer does not retain much topicality. But it does match in terms of cataphoric importance, since the undergoer retains 29% high topicality. The most common use of this clause type cluster is when both the actor and the undergoer are new referents, that is, when the clause has sentence focus. The main way this cluster differs from prototypical active functional voice is the relatively low topicality of both actor and undergoer. Hence I will characterize it as low topicality active functional voice.

yiqtol,S,etO Isolate

The **yiqtol,S,etO** clause type represents an isolate. In terms of PCA scores, the mean PC1 score is -0.328, indicating that the undergoer is slightly more topical than the

actor. The mean PC2 score is -0.828, indicating that overall topicality is low. The following are examples:

‘If a bull gores a man or a woman,’ yiqtol,S,etO (Ex. 21:28a, NIV)	וְכִרְיָנֶה שׂוֹר אַתְּ-אֲיָשׁ אֲזֵן אַתְּ-אַשָּׁה
RRD Actor: New Und.: New	TP Actor: 3 Und.: 1
‘Now let my lord the king listen to his servant's words’ yiqtol,S,etO (1 Sa. 26:19a, NIV)	וְעַתָּה יְשִׁמְעֵנָא אֲדֹנֵי הַמֶּלֶךְ אַתְּ דָבְרֵי עֲבָדֶךָ
RRD Actor: 3 Und.: New	TP Actor: 2 Und.: 0

The first example above has sentence focus structure. The whole clause is focal and there is no clause topic. The second example has predicate focus structure, that is, topic-comment articulation, with the actor subject as primary topic. Of the fifteen clauses of this clause type, seven have sentence focus and eight have predicate focus. The topicality measures for this clause type are shown in Table 36.

TABLE 36

**TOPICALITY MEASURES FOR yiqtol,S,etO IN
DIRECTIVE DISCOURSE**

n=15

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	27%	0%	High: 3-10	53%	33%
2-3	Med.: 9-9.5	13%	7%			
4-19	Low: 1-8	20%	7%	Low: 0-2	47%	67%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	40%	87%			
Standard Deviation	4.64*	3.09		Standard Dev.	2.42	2.94*
Mean Anaphoric Continuity	5.37	1.17		Mean Topic Pers.	2.80	2.07
Mean Anaphoric Continuity Difference	4.20			Mean Topic Persistence Dif.	0.73	

By both topicality measures, the actor is more topical than the undergoer. High actor topic persistence exceeds high undergoer topic persistence by a significant margin: 53% - 33% = 20%. The undergoer retains considerable topicality with regard to cataphoric importance (33% high), but not with regard to anaphoric continuity. This is because this clause type is typically used with new undergoers, and often with new actor subjects as well. When both actor and undergoer are new, the clause has sentence focus; when only the undergoer is new, it has predicate focus. In some respects this clause type matches the category of active functional voice, but it differs because of the low anaphoric continuity of the undergoer. I characterize it as a “low anaphoric continuity active.”

Comparing Functions of Similar Clause Types

In this chapter I have clustered and classified fifty-one frequently-occurring basic clause types from narrative and directive discourse using principal component analysis. In doing this, I have tried not to impose the theoretical categories I have posited on data that does not match those categories. At the same time, predetermined theoretical categories, namely functional voice categories, have been useful as an aid in characterizing the clusters. Some clusters match the categories closely, such as the two antipassive functional voice clusters and the two active functional voice clusters. Other clusters match a certain category according to one topicality measure, but not by the other, namely the passive functional voice cluster in directive discourse and the low anaphoric continuity active isolate (*yiqtol,S,etO*). Yet other clusters represent categories not covered by the theory, such as the two low topicality active functional voice clusters and the low topicality passive functional voice cluster, and hence suggest areas in which the theory could be expanded.

The results presented in this chapter can be used to address the following question: To what extent does the function of *weqatal* in directive discourse parallel that of *wayyiqtol* in narrative? And to what extent does the function of *yiqtol* in directive discourse parallel that of *qatal* in narrative? These two pairs of conjugations have certain morphological similarities. Is this matched by functional similarities in terms of topicality patterns?

To evaluate this issue, I will ask a more specific question: Do otherwise identical clause types, which only differ by having *weqatal* instead of *wayyiqtol*, fall into the same functional voice clusters in narrative and directive discourse? And similarly for *qatal* and *yiqtol*. I present the answer to this question in Table 37:

TABLE 37
CLASSIFICATION OF MATCHING PAIRS OF CLAUSE TYPES

Narrative Clause Type	Directive Clause Type	Narrative Classification	Directive Classification
O,qatal	O,yiqtol	Antipassive	Antipassive
qatal,O	yiqtol,O	Antipassive	Antipassive
wayyiqtol,O	weqatal,O	Antipassive	Antipassive
qatal,etO	yiqtol,etO	Antipassive	Active
wayyiqtol	weqatal	Active	Active
wayyiqtol,etO	weqatal,etO	Active	Active
wayyiqtol,prepO	weqatal,prepO	Active	Active
wayyiqtol,S,etO	weqatal,S,etO	Active	Active
qatal-Opro	yiqtol-Opro	Semi-active	Semi-active
wayyiqtol-Opro	weqatal-Opro	Semi-active	Semi-active
wayyiqtol,etOpro	weqatal,etOpro	Semi-active	Semi-active
S,qatal,O	S,yiqtol,O	Low top. active	Low top. active
wayyiqtol-Pas	weqatal-Pas	Passive	Passive
wayyiqtol-Pas,U	weqatal-Pas,U	Passive	Low top. passive
qatal-Pas,U	yiqtol-Pas,U	Passive	Low top. passive
U,qatal-Pas	U,yiqtol-Pas	enigmatic	Low top. passive

Table 37 lists all the pairs of common clause types which differ only in terms of the verb conjugation pairs mentioned above. I have only listed cases where both members of the pair are common enough to be included in the analysis, that is, both occur more than ten times in the corpora. Out of the sixteen matching pairs, twelve have matching classifications and four do not. Three of the non-matching pairs are morphologically passive. Hence I conclude that for active clauses, *weqatal* and *yiqtol* clause types in directive discourse have very similar topicality patterns to equivalent *wayyiqtol* and *qatal* clauses in narrative.

Most clusters share certain syntactic features, suggesting that the topicality patterns may be correlated with these syntactic features. I will explore this hypothesis further in the following chapters on amalgamated clause types. On the other hand, the two active functional voice clusters are syntactically diverse. This is explicable in that active functional voice is the unmarked category in the functional voice system. As such, it does not need a distinctive syntactic marking as much as the other marked categories.

CHAPTER 4

TOPICALITY PATTERNS OF DIFFERENT TYPES OF OBJECT MARKING

In the previous chapter, the focus of my analysis was the classification of commonly occurring clause types. I excluded clause types occurring less than ten times in the corpus. In the following three chapters, I include less frequent clause types in the analysis by means of grouping them together with common clause types to form amalgamated clause types defined by certain common features.

In this chapter I will present the topicality measures for amalgamated clause types based on how the object is marked. I will present the measures for each amalgamated clause type separately for narrative and directive discourse. I will classify each amalgamated clause type in terms of functional voice categories. I will also discuss the implications of the results in relation to discerning possible functions of alternative ways of marking the object .

Types of Object Marking

There are a variety of ways undergoers can be realized as objects in Biblical Hebrew. First, they may be implicit, that is, represented by zero anaphora. Second, the undergoer may be oblique, that is, governed by a preposition. Third, the undergoer may be realized as an unmarked nominal object. Fourth, the undergoer may be realized as an object marked with the direct object marker **תְּ**/**-תְּ**. Fifth, the undergoer may be realized as an object suffix on the verb.

Besides these alternatives, there is also a contrast between whether the undergoer object is realized as a pronoun or a noun. This contrast applies to undergoers governed by a preposition and to undergoers marked with the direct object marker **תְּ**/**תָּ**. There is no such contrast for unmarked objects; they must be nominal, since Hebrew does not allow a free pronoun as object. There is also no such contrast for suffixed objects, since they must be pronominal. When all the alternatives are combined, there are a total of seven contrasts.

Implicit Undergoer Clauses

Implicit undergoer clauses represent 8% of the clauses in both the narrative and directive discourse corpus.

In Narrative

The topicality measures for the eighty-two clauses in the narrative corpus with implicit undergoers are found in Table 38. The undergoer is coded by zero anaphora. This amalgamated clause type consists of the following clause types (number of occurrences in parentheses):

wayyiqtol (38); **wayyiqtol,S** (22); **yiqtol** (6); **qatal,S** (5); **qatal** (3);
S,qatal (3); **S,yiqtol** (2); **weqatal** (2); **yiqtol,S** (1)

The following are examples:

‘and laid it on the bed,’

וְתַּשְׁמֵן אֶל־הַמִּטָּה

wayyiqtol (1 Sa. 19:13b, NIV)

RRD Actor: 1	Und.: 1	TP Actor: 3	Und.: 2
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‘And the Egyptians pursued,’

וַיַּרְדְּפֻוּ מִצְרָיִם

wayyiqtol,S (Ex. 14:23a, KJV)

RRD Actor: 10	Und.: 1	TP Actor: 6	Und.: 3
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TABLE 38
**TOPICALITY MEASURES FOR IMPLICIT UNDERGOER
CLUSES IN NARRATIVE**

n=82

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	61%	60%	High: 3-10	72%	34%
2-3	Med.: 9-9.5	15%	10%			
4-19	Low: 1-8	15%	7%	Low: 0-2	28%	66%
>19 Reactiv.	V. Low: 0.5	1%	0%			
20 New	V. Low: 0	10%	23%			
Standard Deviation	3.26	4.19		Standard Dev.	3.19*	2.45
Mean Anaphoric Continuity	8.30	7.40		Mean Topic Pers.	4.70	2.07
Mean Anaphoric Continuity Difference	0.90			Mean Topic Persistence Dif.	2.63	
Mean Referential Distance	4.30	5.98				

The measure for cataphoric importance indicates that the actor is significantly more topical than the undergoer. High actor topic persistence exceeds high undergoer topic persistence by a large margin: $72\% - 34\% = 38\%$. On the other hand, with respect to anaphoric continuity, the actor is only slightly more topical than the undergoer, as indicated by the low positive value of the mean anaphoric continuity difference. Both actor and undergoer have high topicality as measured by high and medium anaphoric continuity, with the actor slightly more topical (76% versus 70%).

The high standard deviation values for actor topic persistence indicates that the values for this variable are more spread out than they are in the overall sample of clauses. This suggests that this amalgamated clause type does not give such a clear signal as to the topicality status of the actor, but gives a clearer signal with regard to the undergoer.

This amalgamated clause type codes undergoers by zero anaphora. There are three types of undergoers suitable for such coding. One type are discourse-active referents which have been mentioned in the immediately previous clauses. A second type are unidentifiable unimportant referents. Payne refers to this second type as omitted

arguments, explaining, “Arguments are omitted when their identity is extremely unimportant to the communicative intent of the utterance” (1994:342). A third type of referent is a new specific referent which is identified in the succeeding clause. The first clause in the following example illustrates this:

וַיִּקְחֵה דָּאשָׁה
 ‘And the woman took’
wayyiqtol,S (2 Sa. 17:19a, KJV)
 וַיִּפְרֹשׂ אֶת־הַמִּסְךָ עַל־פָּנָי הַבָּאָר
 ‘and spread a covering over the well's mouth,’
wayyiqtol,etO (2 Sa. 17:19b, KJV)

We can characterize the referents of this amalgamated clause type as follows: The actors are highly topical. Most undergoers have high anaphoric continuity and low cataphoric importance. With respect to functional voice, this amalgamated clause type best fits the category of active functional voice.

In Directive Discourse

The topicality measures for the seventy-five clauses in the directive discourse corpus with implicit undergoers are found in Table 39. This amalgamated clause type consists of the following clause types:

yiqtol (27); **weqatal** (17); **weqatal,S** (7); **Imp** (6); **Spro,yiqtol** (5);
yiqtol,S (4); **qatal** (4); **S,yiqtol** (3); **yiqtol,Spro** (1); **S,qatal** (1)

The following are examples:

‘then hear in heaven,’ Spro,yiqtol (1 Kg. 8:32a, NASB) RRD Actor: 1 Und.: 1 TP Actor: 7 Und.: 0	וְאֱתָה תָּשִׂמְעַ הַשְׁמִים
‘that we may sacrifice to the LORD our God.’ yiqtol (Ex. 3:18f, KJV) RRD Actor: 1 Und.: New TP Actor: 6 Und.: 0	וְנוֹבֵחַ לְיִדְנוּהָ אֱלֹהֵינוּ

TABLE 39
**TOPICALITY MEASURES FOR IMPLICIT UNDERGOER
CLAUSES IN DIRECTIVE DISCOURSE**

n=75

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	68%	53%	High: 3-10	59%	13%
2-3	Med.: 9-9.5	15%	9%			
4-19	Low: 1-8	7%	3%	Low: 0-2	41%	87%
>19 Reactiv.	V. Low: 0.5	1%	0%			
20 New	V. Low: 0	9%	35%			
Standard Deviation	3.09	4.73	Standard Dev.	3.09	1.90	
Mean Anaphoric Continuity	8.65	6.41	Mean Topic Pers.	4.20	1.17	
Mean Anaphoric Continuity Difference	2.24		Mean Topic Persistence Dif.	3.03		
Mean Referential Distance	3.60	7.84				

By both topicality measures, actors are more topical than undergoers. The measure for cataphoric importance indicates that the actor is much more topical than the undergoer. High actor topic persistence exceeds high undergoer topic persistence by a large margin: 59% - 13% = 46%. With respect to anaphoric continuity the actor is somewhat more topical than the undergoer.

With respect to functional voice, this amalgamated clause type is closest to the category active functional voice, but it is not a typical member of this category due to the fact that the cataphoric importance of undergoers is very low, indicating that undergoers do not retain much topicality by this measure. This feature is more characteristic of antipassive functional voice.

This amalgamated clause type codes undergoers by zero anaphora. There are two main types of undergoers suitable for such coding. One type are discourse-active referents which have been mentioned in the immediately previous clauses. These are represented by the 53% of clauses with high anaphoric continuity, including the first example above from 1 Kings 8:32a. A second type are unidentifiable unimportant

referents, including the second example above from Exodus 3:18f. These are represented by the 35% of undergoers in the New category in Table 39.

Oblique Nominal Undergoer Clauses

Oblique nominal undergoer clauses represent 5% of the clauses in the narrative corpus and 4% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the fifty-three clauses in the narrative corpus with oblique nominal undergoers are found in Table 40. This amalgamated clause type consists of the following clause types:

wayyiqtol,prepO (22); **wayyiqtol,S,prepO** (22); **qatal,prepO** (5);
prepO,qatal (1); **prepO,yiqtol** (1); **qatal,S,prepO** (1);
S,qatal,prepO (1)

TABLE 40
**TOPICALITY MEASURES FOR OBLIQUE NOMINAL
UNDERGOER CLAUSES IN NARRATIVE**

n=53

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	66%	11%	High: 3-10	66%	45%
2-3	Med.: 9-9.5	17%	25%			
4-19	Low: 1-8	13%	26%	Low: 0-2	34%	55%
>19 Reactiv.	V. Low: 0.5	4%	13%			
20 New	V. Low: 0	0%	25%			
Standard Deviation		2.14	4.30	Standard Dev.	2.78	2.89
Mean Anaphoric Continuity		9.03	5.21	Mean Topic Pers.	4.58	2.98
Mean Anaphoric Continuity Difference		3.82		Mean Topic Persistence Dif.	1.60	
Mean Referential Distance		2.94	10.34			

The following are examples:

<p>‘and Orpah kissed her mother-in-law’ wayyiqtol,S,prepO (Ruth 1:14c, NIV) RRD Actor: 1 Und.: 3 TP Actor: 2</p> <p>‘and hearkened not unto the voice of the LORD.’ qatal,prepO (Ps. 106:25b, KJV) RRD Actor: 1 Und.: New TP Actor: 6</p>	<p>וְתַשְׁקֵעַ עֲרָפָה לְחִמּוֹתָה Und.: 7</p> <p>לֹא שָׁמַעַ בְּקוֹל יְהוָה Und.: 0</p>
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By both topicality measures actors are somewhat more topical than undergoers.

High actor topic persistence is 21% more than high undergoer topic persistence. Undergoers retain relatively high topicality: 36% of undergoers have high or medium anaphoric continuity and 45% have high cataphoric importance. Hence this amalgamated clause type falls into the category of active functional voice.

In Directive Discourse

The topicality measures for the thirty-five clauses in the directive discourse corpus with oblique nominal undergoers are found in Table 41. This amalgamated clause type consists of the following clause types in directive discourse:

weqatal,prepO (12); **prepO,yiqtol** (8); **yiqtol,prepO** (5);
Imp,prepO (4); **qatal,prepO** (2); **weqatal,S,prepO** (1);
S,yiqtol,prepO (1); **Spro,yiqtol,prepO** (1); **Spro,Imp,prepO** (1)

The following are examples:

<p>‘do not invoke the names of their gods’ prepO,yiqtol (Jos. 23:7b, NIV) RRD Actor: 1 Und.: New TP Actor: 9</p> <p>‘but love your neighbor as yourself.’ weqatal,prepO (Lev. 19:18c, NIV) RRD Actor: 1 Und.: 4 TP Actor: 4</p>	<p>וְבָשֵׂם אֱלֹהִים לֹא תִזְכְּרֻנָּו Und.: 3</p> <p>וְאַהֲבָתָ לְרֵעֶךְ כְּמֵךְ Und.: 0</p>
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TABLE 41
**TOPICALITY MEASURES FOR OBLIQUE NOMINAL
UNDERGOER CLAUSES IN DIRECTIVE DISCOURSE**

n=35

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	77%	6%	High: 3-10	69%	17%
2-3	Med.: 9-9.5	17%	9%			
4-19	Low: 1-8	3%	20%	Low: 0-2	31%	83%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	3%	66%			
Standard Deviation	1.70	4.08		Standard Dev.	3.67*	1.37
Mean Anaphoric Continuity	9.56	2.84		Mean Topic Pers.	5.31	1.06
Mean Anaphoric Continuity Difference	6.72			Mean Topic Persistence Dif.	4.25	
Mean Referential Distance	1.86	14.66				

By both topicality measures actors are much more topical than undergoers. High actor anaphoric continuity exceeds high undergoer anaphoric continuity by a large margin: $77\% - 6\% = 71\%$. High actor topic persistence also exceeds high undergoer topic persistence by a large margin: $69\% - 17\% = 52\%$. Hence this amalgamated clause type matches the category of antipassive functional voice. The oblique marking of the undergoer correlates with low topicality. This is a common pattern in syntactic antipassive clauses in many languages.

Oblique Pronominal Undergoer Clauses

Oblique pronominal undergoer clauses represent 2.3% of the clauses in the narrative corpus and 1.7% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the twenty-three clauses in the narrative corpus with oblique pronominal undergoers are found in Table 42. This amalgamated clause type consists of the following clause types:

wayyiqtol,prepOpro (9); **wayyiqtol,prepOpro,S** (5);
qatal,prepOpro (5); **wayyiqtol,S,prepOpro** (2); **S,qatal,prepOpro** (1);
yiqtol,prepOpro (1)

The following are examples:

וַיִּקְרָא לֵאמֹר לְזִבְחָה
 ‘and called them to the sacrifice.’

wayyiqtol,prepOpro (1 Sa. 16:5g, KJV)
 RRD Actor: 1 Und.: 1 TP Actor: 4 Und.: 2

וְלَا שָׁמַע אֶל־הֶם
 ‘and he would not listen to them,’

qatal,prepOpro (Ex. 7:13b, NIV)
 RRD Actor: 1 Und.: 2 TP Actor: 7 Und.: 6

TABLE 42

**TOPICALITY MEASURES FOR OBLIQUE PRONOMINAL
 UNDERGOER CLAUSES IN NARRATIVE**

n=23

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	65%	65%	High: 3-10	74%	70%
2-3	Med.: 9-9.5	9%	22%			
4-19	Low: 1-8	13%	13%	Low: 0-2	26%	30%
>19 Reactiv.	V. Low: 0.5	4%	0%			
20 New	V. Low: 0	9%	0%			
Standard Deviation		3.35	1.19	Standard Dev.	2.55	2.51
Mean Anaphoric Continuity		8.35	9.41	Mean Topic Pers.	4.17	4.30
Mean Anaphoric Continuity Difference		-1.06		Mean Topic Persistence Dif.		-0.13
Mean Referential Distance		4.22	2.17			

As measured by anaphoric continuity, the undergoer is more topical than the actor. Although the figures for high anaphoric continuity are the same, undergoers have higher topicality than actors when high and medium anaphoric continuity are combined (87% versus 74%). With regard to cataphoric importance, the topicality of actor and undergoer is almost the same. A slightly higher percentage of actors have high cataphoric importance, but undergoers are slightly more topical as measured by mean topic persistence. This amalgamated clause type mostly closely matches the category of inverse functional voice.

In Directive Discourse

The topicality measures for the sixteen clauses in the directive discourse corpus with oblique pronominal undergoers are found in Table 43. This amalgamated clause type consists of the following clause types:

weqatal,prepOpro (4); **yiqtol,prepOpro** (4); **S,yiqtol,prepOpro** (3);
yiqtol,prepOpro,S (2); **yiqtol,S,prepOpro** (1); **Imp,prepOpro** (1);
S,qatal,prepOpro (1)

The following are examples:

‘If the avenger of blood pursues him,’
yiqtol,S,prepOpro (Jos. 20:5a, NIV)

RRD Actor: New Und.: 1 TP Actor: 1

וְכִי יַרְדֵּף נָאֵל הַדָּם אֶחָרָיו

Und.: 6

‘No uncircumcised male may eat of it.’

S,yiqtol,prepOpro (Ex. 12:48f, NIV)

RRD Actor: New Und.: 7 TP Actor: 0

וְכֹל־עָרֵל לֹא־יִאכְלֶ בָּו

Und.: 0

TABLE 43
**TOPICALITY MEASURES FOR OBLIQUE PRONOMINAL
UNDERGOER CLAUSES IN DIRECTIVE DISCOURSE**

n=16

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	50%	63%	High: 3-10	37%	63%
2-3	Med.: 9-9.5	0%	19%			
4-19	Low: 1-8	0%	12%	Low: 0-2	63%	37%
>19 Reactiv.	V. Low: 0.5	6%	0%			
20 New	V. Low: 0	44%	6%			
Standard Deviation	5.13*	2.53		Standard Dev.	2.78	2.58*
Mean Anaphoric Continuity	5.03	8.97		Mean Topic Pers.	2.50	3.44
Mean Anaphoric Continuity Difference		-3.94		Mean Topic Persistence Dif.		-0.94
Mean Referential Distance	10.50	3.00				

Because of the relatively small sample size, the results shown in Table 43 should be viewed with caution. By both topicality measures undergoers are more topical than actors. Actors retain considerable topicality: more than 35% of actors have high topicality by both measures. Hence this amalgamated clause type matches the category of inverse functional voice. The oblique marking of the undergoer does not indicate any reduction of topicality. Rather, the pronominal coding of the undergoer indicates high topicality.

Unmarked Object Clauses

Unmarked object clauses represent 29% percent of the clauses in the narrative corpus and 30% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the 283 clauses in the narrative corpus with unmarked nominal objects are found in Table 44. This amalgamated clause type consists of the following clause types:

wayyiqtol,O (113); **qatal,O** (41); **yiqtol,O** (32); **wayyiqtol,S,O** (30);
O,qatal (17); **O,yiqtol** (12); **S,qatal,O** (11); **weqatal,O** (5);
S,yiqtol,O (4); **O,qatal,S** (4); **qatal,S,O** (3); **O,yiqtol,S** (2);
Spro,qatal,O (2); **O,qatal,O2** (1); **O,yiqtol,Spro** (1); **qatal,O,S** (1);
Spro,yiqtol,O (1); **wayyiqtol,O,S** (1); **wayyiqtol,Spro,O** (1);
yiqtol,S,O (1);

The following are examples:

‘They found an Egyptian in a field’	וַיִּמְצָא אִישׁ-מִצְרִי בַּשְּׂדָה		
wayyiqtol,O (1 Sa. 30:11a, NIV)	RRD Actor: 2	Und.: New	TP Actor: 4
‘Pharaoh's chariots and his army he has hurled into the sea.’	מֶרְכָּבָת פְּרֹעָה וְתַיִלּוֹ יְרֵה בַּיָּם		
O,qatal (Ex. 15:4a, NIV)	RRD Actor: 1	Und.: New	TP Actor: 5

TABLE 44

TOPICALITY MEASURES FOR UNMARKED OBJECT CLAUSES IN NARRATIVE

n=283

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	72%	11%	High: 3-10	71%	16%
2-3	Med.: 9-9.5	15%	5%			
4-19	Low: 1-8	8%	13%	Low: 0-2	29%	84%
>19 Reactiv.	V. Low: 0.5	1%	4%			
20 New	V. Low: 0	4%	67%			
Standard Deviation	2.20	3.89	Standard Dev.	2.91	2.35	
Mean Anaphoric Continuity	9.22	2.36	Mean Topic Pers.	4.65	1.36	
Mean Anaphoric Continuity Difference	6.86		Mean Topic Persistence Dif.	3.29		
Mean Referential Distance	2.52	15.61				

By both topicality measures, actors are significantly more topical than undergoers. High actor topic persistence exceeds high undergoer topic persistence by a large margin: 71% - 16% = 55%. Undergoer topicality is low: only 16% have high cataphoric importance; only 16% have high or medium anaphoric continuity. This indicates that the topicality of the undergoer is demoted. According to the guidelines for identifying functional voice, this amalgamated clause type falls into the category of antipassive functional voice.

In Directive Discourse

The topicality measures for the 275 clauses in the directive discourse corpus with unmarked nominal objects are found in Table 45. This amalgamated clause type consists of the following clause types:

O,yiqtol (82); yiqtol,O (69); weqatal,O (48); Imp,O (17);
 yiqtol,S,O (11); S,yiqtol,O (10); qatal,O (5); O,qatal (5); Imp,S,O (4);
 weqatal,S,O (4); O,yiqtol,S (3); wayyiqtol,O (3); S,O,yiqtol (2);
 O,Imp (2); Spro,yiqtol,O (2); O,yiqtol,O (2); yiqtol,Spro,O (1);
 O,yiqtol,Spro (1); S,weqatal,O (1); Imp,O,O2 (1); S,qatal,O (1);
 wayyiqtol,S,O (1)

The following are examples:

שְׁבַעַת יָמִים תְּאַכֵּל מֵצֹה
 'for seven days eat bread made without yeast,'
 yiqtol,O (Ex. 23:15b, NIV)

RRD Actor: 1	Und.: New	TP Actor: 9	Und.: 0
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הֲבֹי לְכֶם שְׁלֹשָׁה אֲנָשִׁים לְשַׁבֵּט
 'Provide for yourselves three men
 from each tribe,'

Imp,O (Jos. 18:4a, NASB)	Und.: New	TP Actor: 2	Und.: 8
RRD Actor: 1			

TABLE 45
**TOPICALITY MEASURES FOR UNMARKED OBJECT
CLAUSES IN DIRECTIVE DISCOURSE**

n=275

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	76%	9%	High: 3-10	69%	13%
2-3	Med.: 9-9.5	11%	5%			
4-19	Low: 1-8	3%	5%	Low: 0-2	31%	87%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	9%	80%			
Standard Deviation	3.03	3.56		Standard Dev.	3.28*	1.74
Mean Anaphoric Continuity	8.82	1.67		Mean Topic Pers.	4.90	0.93
Mean Anaphoric Continuity Difference	7.15			Mean Topic Persistence Dif.	3.97	
Mean Referential Distance	3.25	16.87				

By both topicality measures, actors are significantly more topical than undergoers.

High actor topic persistence exceeds high undergoer topic persistence by a large margin: 69% - 13% = 56%. Undergoer topicality is low: only 13% have high cataphoric importance; only 14% have high or medium anaphoric continuity. This indicates that the topicality of the undergoer is demoted. According to the guidelines for identifying functional voice, this amalgamated clause type matches the category of antipassive functional voice.

Clauses with Nominal Objects Marked with נָא/-נָא

Clauses with nominal objects marked with נָא/-נָא represent 25% of the clauses in the narrative corpus and 26% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the 247 clauses in the narrative corpus with nominal objects marked with **וְתַת־תָּת** are found in Table 46. This amalgamated clause type consists of the following clause types:

wayyiqtol,S,etO (114); **wayyiqtol,etO** (74); **S,qatal,etO** (17);
qatal,etO (15); **qatal,S,etO** (9); **etO,qatal** (7) **etO,qatal,S** (4);
yiqtol,S,etO (2); **weqatal,S,etO** (2); **etO,yiqtol** (1); **InfA,etO** (1);
S,wayyiqtol,etO (1)

Note the following examples:

וַיִּקְחֶה מֹשֶׁה אֶת־עֲצָמוֹת יוֹסֵף עַמּוֹ
‘Moses took the bones of Joseph with him’
wayyiqtol,S,etO (Ex. 13:19a, NIV)

RRD Actor: 8 Und.: New TP Actor: 2 Und.: 1

הַפְךَ אֶת־מִימִיהֶם לְדָם
‘He turned their waters into blood,’
qatal,etO (Ps. 105:29a, NIV)

RRD Actor: 1 Und.: New TP Actor: 6 Und.: 0

TABLE 46

TOPICALITY MEASURES FOR NOMINAL OBJECTS WITH **וְתַת־תָּת** IN NARRATIVE

n=247

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	61%	21%	High: 3-10	60%	24%
2-3	Med.: 9-9.5	21%	13%			
4-19	Low: 1-8	12%	21%	Low: 0-2	40%	76%
>19 Reactiv.	V. Low: 0.5	3%	14%			
20 New	V. Low: 0	2%	31%			
Standard Deviation	2.42	4.40		Standard Dev.	2.90	2.33
Mean Anaphoric Continuity	8.92	4.70		Mean Topic Pers.	3.86	1.70
Mean Anaphoric Continuity Difference	4.22			Mean Topic Persistence Dif.	2.16	
Mean Referential Distance	3.13	11.29				

By both topicality measures, actors are more topical than undergoers. High actor topic persistence is 36% more than high undergoer topic persistence. The undergoer still retains some topicality: 24% have high cataphoric importance and 34% have high or medium anaphoric continuity. Hence this amalgamated clause type can be classified as active functional voice.

In Directive Discourse

The topicality measures for the 245 clauses in the directive discourse corpus with nominal objects marked with **תְּ**/**תָּ** are found in Table 47. This amalgamated clause type consists of the following clause types:

weqatal,etO (71); **yiqtol,etO** (31); **etO,yiqtol** (29); **Imp,etO** (22);
qatal,etO (15); **yiqtol,S,etO** (15); **Spro,qatal,etO** (12);
weqatal,S,etO (12); **qatal,S,etO** (7); **etO,qatal** (4); **S,yiqtol,etO** (4);
wayyiqtol,etO (4); **etO,Imp** (2); **InfA,etO** (2); **Spro,yiqtol,etO** (2);
weqatal,Spro,etO (2); **etO,qatal,S** (1); **Imp,etO,S** (1); **O,yiqtol,etO** (1);
S,Imp,etO (1); **S,qatal,etO** (1); **S,weqatal,etO** (1); **Spro,etO,yiqtol** (1);
Spro,Imp,etO (1); **Spro,yiqtol,etO,etO2** (1); **wayyiqtol,S,etO** (1);
weqatal,O2,etO (1)

Note the following examples:

‘Take the ark of the LORD’

וְלֹקַחֲתֶם אֶת־אָרוֹן יְהוָה

weqatal,etO (1 Sa. 6:8a, NIV)

RRD Actor: 1 Und.: New TP Actor: 7

Und.: 2

‘because you have rejected the LORD, **אֲשֶׁר בְּקָרְבֵּלָם**
who is among you’

qatal,etO (Num. 11:20d, NIV)

RRD Actor: 1 Und.: 5 TP Actor: 2

Und.: 1

TABLE 47
TOPICALITY MEASURES FOR NOMINAL OBJECTS
WITH תְ / $-\text{תְ}$ IN DIRECTIVE DISCOURSE

n=245

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	70%	18%	High: 3-10	67%	19%
2-3	Med.: 9-9.5	18%	11%			
4-19	Low: 1-8	5%	11%	Low: 0-2	33%	81%
>19 Reactiv.	V. Low: 0.5	0%	2%			
20 New	V. Low: 0	7%	58%			
Standard Deviation	2.48	4.50		Standard Dev.	2.97	2.29
Mean Anaphoric Continuity	9.11	3.56		Mean Topic Pers.	4.54	1.42
Mean Anaphoric Continuity Difference	5.55			Mean Topic Persistence Dif.	3.12	
Mean Referential Distance	2.71	13.29				

By both topicality measures, actors are much more topical than undergoers. High actor topic persistence exceeds high undergoer topic persistence by a large margin: 67% - 19% = 48%. The undergoer does retain some topicality as measured by anaphoric continuity: 29% have high or medium anaphoric continuity. But undergoers are less topical as measured by cataphoric importance: only 19% have high topic persistence. Hence this amalgamated clause type lies between the categories of active functional voice and antipassive functional voice.

Clauses with Pronominal Objects Marked with תְ / $-\text{תְ}$

Clauses with pronominal objects marked with תְ / $-\text{תְ}$ represent 2.2% of the clauses in the narrative corpus and 6% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the twenty-two clauses in the narrative corpus with pronominal objects marked with **תְּ**/**תָּ** are found in Table 48. This amalgamated clause type consists of the following clause types:

wayyiqtol,etOpro (14); **wayyiqtol,etOpro,S** (4);
wayyiqtol,S,etOpro (2); **qatal,S,etOpro** (1); **yiqtol,etOpro** (1)

The following are examples:

וַיִּקְרֹב אֲלֵהֶיךְ וַיִּקְרֹב
 'and brought him to David.'

wayyiqtol,etOpro (1 Sa. 30:11b, NIV)
 RRD Actor: 1 Und.: 1 TP Actor: 3 Und.: 10

וַיָּלִקְטוּ אֶת־בָּקָר בְּפֹרֶךְ אֲיָשׁ כַּפֵּר אֲכָלוּ
 'They gathered it morning by morning, every man as much as he should eat'

wayyiqtol,etOpro,S (Ex. 16:21a, NASB)
 RRD Actor: 5 Und.: 2 TP Actor: 3 Und.: 2

TABLE 48

**TOPICALITY MEASURES FOR PRONOMINAL OBJECTS
 WITH **תְּ**/**תָּ** IN NARRATIVE**

n=22

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	68%	77%	High: 3-10	59%	59%
2-3	Med.: 9-9.5	5%	23%			
4-19	Low: 1-8	9%	0%	Low: 0-2	41%	41%
>19 Reactiv.	V. Low: 0.5	5%	0%			
20 New	V. Low: 0	5%	0%			
Standard Deviation	2.86	0.21	Standard Dev.	2.55	3.82*	
Mean Anaphoric Continuity	8.84	9.89	Mean Topic Pers.	3.14	4.27	
Mean Anaphoric Continuity Difference	-1.05		Mean Topic Persistence Dif.	-1.13		
Mean Referential Distance	3.27	1.23				

By both topicality measures the undergoer is more topical than the actor. With regard to anaphoric continuity, undergoers with high or medium anaphoric continuity constitute 100%, whereas the figure for actors is 73%. With regard to cataphoric importance, even though high actor topic persistence is the same as high undergoer topic persistence, undergoers are significantly more topical than actors as measured by mean topic persistence. By both topicality measures, actors and undergoers have considerable topicality. This amalgamated clause type matches the category of inverse functional voice.

In Directive Discourse

The topicality measures for the fifty-six clauses in the directive discourse corpus with pronominal objects marked with **את/-ת** are found in Table 49. This amalgamated clause type consists of the following clause types:

weqatal,etOpro (24); **yiqtol,etOpro** (14); **qatal,etOpro** (4);
S,yiqtol,etOpro (3); **weqatal,etOpro,S** (3); **etOpro,yiqtol** (2);
O,etOpro,yiqtol (2); **qatal,S,etOpro** (1); **wayyiqtol,S,etOpro** (1);
weqatal,etOpro,etO2 (1); **yiqtol,etOpro,S** (1)

The following are examples:

‘He will push them out before you,’ weqatal,etOpro (Jos. 23:5b, NIV) RRD Actor: 1 Und.: 1 TP Actor: 3 Und.: 2	והזריש אותם מלפניכם
‘do not build it with dressed stones,’ yiqtol,etOpro (Ex. 20:25b, NIV) RRD Actor: 1 Und.: 1 TP Actor: 4 Und.: 4	לא-תבנה אתהן בגית

TABLE 49
TOPICALITY MEASURES FOR PRONOMINAL OBJECTS
WITH נָא/-תָא IN DIRECTIVE DISCOURSE

n=56

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	82%	79%	High: 3-10	54%	39%
2-3	Med.: 9-9.5	4%	12%			
4-19	Low: 1-8	5%	4%	Low: 0-2	46%	61%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	9%	5%			
Standard Deviation	2.91	2.30	Standard Dev.	2.94	2.59*	
Mean Anaphoric Continuity	8.91	9.31	Mean Topic Pers.	3.30	2.59	
Mean Anaphoric Continuity Difference	-0.40		Mean Topic Persistence Dif.	0.71		
Mean Referential Distance	3.09	2.32				

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. With regard to anaphoric continuity, the undergoer is slightly more topical than the actor. Undergoers with high or medium anaphoric continuity constitute 91%, whereas the figure for actors is 86%. The negative mean anaphoric continuity difference indicates slightly higher topicality for undergoers as compared to actors. On the other hand, actors are slightly more topical than undergoers with regard to cataphoric importance. High actor topic persistence exceeds high undergoer topic persistence by a small margin: 54% - 39% = 15%. By both topicality measures, actors and undergoers have considerable topicality. This amalgamated clause type does not clearly match any functional voice category. It lies somewhere between the categories of active functional voice and inverse functional voice.

Suffixed Object Clauses

Suffixed object clauses represent 16% of the clauses in the narrative corpus and 12% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the 156 clauses in the narrative corpus with suffixed objects are found in Table 50. This amalgamated clause type consists of the following clause types:

wayyiqtol-Opro (70); **yiqtol-Opro** (33); **wayyiqtol-Opro,S** (13);
qatal-Opro (10); **qatal-Opro,S** (8); **S,yiqtol-Opro** (6); **S,qatal-Opro** (4);
wayyiqtol-Opro,O2 (3); **wayyiqtol-Opro,S,O2** (2); **yiqtol-Opro,S** (2);
O,wayyiqtol-Opro (1); **O,yiqtol-Opro,S** (1); **wayyiqtol-Opro,etO** (1);
weqatal-Opro (1); **weqatal-Opro,S** (1)

TABLE 50

TOPICALITY MEASURES FOR SUFFIXED OBJECT CLAUSES IN NARRATIVE

n=156

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	75%	76%	High: 3-10	63%	69%
2-3	Med.: 9-9.5	8%	17%			
4-19	Low: 1-8	10%	4%	Low: 0-2	37%	31%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	6%	1%			
Standard Deviation		2.53	1.75	Standard Dev.	2.88	3.42*
Mean Anaphoric Continuity		9.04	9.49	Mean Topic Pers.	3.89	4.99
Mean Anaphoric Continuity Difference		-0.45		Mean Topic Persistence Dif.		-1.10
Mean Referential Distance		2.87	2.01			

The following are examples:

‘she hid him for three months’ wayyiqtol-Opro (Ex. 2:2e, NIV) RRD Actor: 2 Und.: 1 TP Actor: 5 Und.: 4	וַתִּצְבֹּנָהוּ שֶׁלְשָׁה יְרֵחִים וַיְשִׂמְךָ הוּ שָׁאֵיל עַל אֲנָשֵׁי הַמֶּלֶךְ wayyiqtol-Opro,S (1 Sa. 18:5d, KJV) RRD Actor: 1 Und.: 1 TP Actor: 6 Und.: 3
--	--

By both topicality measures, both actor and undergoer have high topicality and the undergoer is slightly more topical than the actor. This is indicated by the low negative values of the mean anaphoric continuity difference and mean topic persistence difference. In terms of anaphoric continuity, undergoers with high or medium anaphoric continuity comprise 93%, compared to 83% of actors. Similarly slightly more undergoers than actors have high cataphoric importance. Hence this amalgamated clause type falls into the category of inverse functional voice.

This clause type is one for which a meaningful comparison can be made with one of the measures found in Fox (1983). Fox lists figures for mean referential distance of direct object clitic pronouns. For human direct objects the mean referential distance is 1.11, for non-human it is 1.09 (1983:230). These figures can be compared with the mean undergoer referential distance for suffixed object clauses which is 2.01. This indicates that for the clauses in my sample, the average referential difference of the undergoer object is slightly higher than in the clauses in Fox’s sample from Genesis. But considering that the value of referential distance varies between one and twenty, the difference is not that much.

In Directive Discourse

The topicality measures for the 113 clauses in the directive discourse corpus with suffixed objects are found in Table 51. This amalgamated clause type consists of the following clause types:

yiqtol-Opro (41); **weqatal-Opro** (27); **qatal-Opro** (10);
wayyiqtol-Opro (5); **yiqtol-Opro,S** (5); **qatal-Opro,S** (3);
S,qatal-Opro (3); **S,yiqtol-Opro** (3); **weqatal-Opro,S** (3);
Imp-Opro (2); **O,qatal-Opro** (2); **Spro,qatal-Opro** (2);
etO,yiqtol-Opro (1); **Imp-Opro,Spro** (1); **O,yiqtol-Opro** (1);
S,Imp-Opro (1); **Spro,yiqtol-Opro** (1); **yiqtol-Opro,etO2** (1);
yiqtol-Opro,O2 (1)

The following are examples:

'they shall eat it with unleavened bread
and bitter herbs.'

על-מצוות ומְרֻקִים יאכְלָהו

yiqtol-Opro (Num. 9:11b, NASB)

RRD Actor: 1 Und.: 1 TP Actor: 3 Und.: 6

'Have I not commanded you?'

הַלֹּא צִוִּיתִיךְ

qatal-Opro (Jos. 1:9a, NASB)

RRD Actor: 8 Und.: 1 TP Actor: 1 Und.: 5

TABLE 51

TOPICALITY MEASURES FOR SUFFIXED OBJECT CLAUSES IN DIRECTIVE DISCOURSE

n=113

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	65%	85%	High: 3-10	62%	45%
2-3	Med.: 9-9.5	20%	9%			
4-19	Low: 1-8	7%	4%	Low: 0-2	38%	55%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	7%	3%			
Standard Deviation	2.63	1.72	Standard Dev.	2.67	2.99*	
Mean Anaphoric Continuity	8.95	9.58	Mean Topic Pers.	3.45	3.08	
Mean Anaphoric Continuity Difference	-0.63		Mean Topic Persistence Dif.	0.37		
Mean Referential Distance	3.03	1.81				

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. With regard to anaphoric continuity, the undergoer is somewhat more topical than the actor. Undergoers with high or medium anaphoric continuity constitute 94%, whereas the figure for actors is 85%. The negative mean anaphoric continuity difference indicates somewhat higher topicality for undergoers as compared to actors. On the other hand, actors are slightly more topical than undergoers with regard to cataphoric importance. High actor topic persistence exceeds high undergoer topic persistence by a small margin: $62\% - 45\% = 17\%$. By both topicality measures, actors and undergoers have considerable topicality. This amalgamated clause type does not clearly match any functional voice category. It lies somewhere between the categories of active functional voice and inverse functional voice.

Functions of Object Marking

What light can the present study shed on possible functions of alternative ways of marking objects? Two possible functions are discussed in the following subsections.

Topicality

The relative topicality of the different types of object marking in narrative and directive discourse can be evaluated based on the results shown in Tables 38 to 51. If I rank the seven types of object marking by mean anaphoric continuity I get the following results:

TABLE 52**OBJECT MARKING IN NARRATIVE RANKED BY
UNDERGOER MEAN ANAPHORIC CONTINUITY**

Amalgamated Clause Type	Undergoer Mean Anaphoric Continuity	Undergoer Mean Topic Persistence
Pronominal with ئى (etOpro)	9.89	4.27
Suffixed (-Opro)	9.48	5.03
Oblique Pronominal (prepOpro)	9.41	4.30
Implicit Undergoer	7.40	2.07
Oblique Nominal (prepO)	5.21	2.98
Nominal with ئى (etO)	4.70	1.73
Unmarked Object (O)	2.39	1.36

TABLE 53**OBJECT MARKING IN DIRECTIVE DISCOURSE
RANKED BY UNDERGOER MEAN ANAPHORIC
CONTINUITY**

Amalgamated Clause Type	Undergoer Mean Anaphoric Continuity	Undergoer Mean Topic Persistence
Suffixed (-Opro)	9.58	3.08
Pronominal with ئى (etOpro)	9.31	2.59
Oblique Pronominal (prepOpro)	8.73	3.46
Implicit Undergoer	6.41	1.17
Oblique Nominal (prepO)	3.58	1.08
Nominal with ئى (etO)	3.56	1.42
Unmarked Object (O)	1.64	0.93

It is very significant that the relative order of the amalgamated clause types is almost the same in narrative and directive discourse. The only difference is that the first

two items are interchanged. This shows that the interrelationship between object marking and topicality is virtually the same in both genres.

If the clause types were ranked by mean topic persistence, there would be a somewhat different ranking. But by both measures, in both genres, the pronominal objects are substantially more topical than the nominal objects. And by both measures, in both genres, the least topical object is the unmarked object.

If one focuses on the question of the function of **NN**, one can make a number of observations. For nominal objects, those marked with **NN** tend to be more topical than unmarked objects in both genres. In directive discourse, they are also more topical than oblique nominal objects as measured by topic persistence (the values for anaphoric continuity are virtually the same). But in narrative, oblique nominal objects are more topical than those marked with **NN**. So there is not a consistent pattern regarding the topicality of objects governed by prepositions as compared to those marked with **NN**. But both types are more topical than unmarked objects.

The pattern is different with pronominal objects. In directive discourse, by both topicality measures, suffixed objects are somewhat more topical than pronominal objects marked with **NN**. In narrative, suffixed objects are more topical as measured by topic persistence, but objects marked with **NN** are more topical as measured by anaphoric continuity. In three cases out of four, suffixed objects have the highest topicality of any type of object marking. This suggests that one function of object suffixing is to mark objects of high topicality.

Zero anaphora of objects in implicit undergoer clauses has a separate pattern of its own. In both genres, anaphoric continuity is relatively high, because often such objects are identifiable since they have been mentioned in the previous clause or two. But topic persistence is quite low. This suggests that this type of object marking is often used with topical referents of low cataphoric importance.

Disambiguation

In the Introduction to the dissertation, I presented a number of suggested explanations for the use of **ନ୍ତା**. Since the present study does not measure objects in terms of definiteness, individuation, affectedness, or emphasis, those hypotheses cannot be evaluated. However, it is possible to utilize the data to conduct a supplementary investigation of the role of **ନ୍ତା** in disambiguating subject from object.

The following reasoning can be used. Certain clause types have a higher potential for confusion in identifying nominal constituents as being subject or object, compared to other clause types in which the potential for confusion is lower. Clauses with low potential for confusion include the following:

- Clauses with first or second person subjects.
- Clauses with SVO or VSO order (since one expects the subject to precede the object).
- Clauses with nonsentient objects (since a majority of subjects are sentient, that is, human or divine).

Clauses with higher potential for confusion include the following:

- Clauses with two nominal constituents in OVS or VOS order
- Clauses with sentient objects.

If we find that **ନ୍ତା** occurs significantly more often in the second type of clause than the first type, this would lend support to the hypothesis of Malessa (2000), namely that **ନ୍ତା** functions to help disambiguate subject and object.

It is easier to investigate this question in directive discourse rather than in narrative, because of the relatively large number of first and second person subjects in directive discourse. The number of occurrences of various clause types in the directive discourse corpus is set forth in Table 54. High potential confusion clauses are paired with those with lower potential confusion.

TABLE 54**MARKING OF CLAUSES WITH NOMINAL OBJECTS IN DIRECTIVE DISCOURSE**

	Nominal object with ኬ	Unmarked object
1 st 2 nd person subject	167 = 46.0%	196 = 54.0%
3 rd person subject	79 = 44.1%	100 = 55.9%
SVO	28 = 60.9%	18 = 39.1%
VSO	37 = 63.8%	21 = 36.2%
VOS	1	0
OVS	1 = 20%	4 = 80%
VO, nonsentient objects	97 = 42.7%	130 = 57.3%
VO, sentient objects	48 = 71.6%	19 = 28.4%

Since the first or second person subjects are marked on the verb, there is no possible ambiguity as to the identity of the nominal constituent as an object. If **ኬ** was functioning to disambiguate subject and object, there would be less need of it in such clauses. But the figures in Table 54 show that the frequency of **ኬ** in clauses with first or second person subjects is marginally more than its frequency in those with third person subjects.

There is not much difference between the frequency of **ኬ** in SVO and its frequency in VSO clauses. Both of these have the unmarked order of subject preceding object. In the marked OVS order, one might expect that there is a greater need to mark the object with **ኬ**. But the opposite is the case, with four out of five fronted objects unmarked, even though three of these four are definite.

Whereas the first two comparisons do not support the hypothesis that **ኬ** functions to disambiguate subject and object, the third set of clauses gives a different picture. The figures show that **ኬ** is used with sentient objects with a substantially

greater frequency than with nonsentient objects. This suggests that the use of **מְךָ** may be related to degrees of animacy. This might be connected indirectly with the issue of disambiguation. Further study would be needed to investigate the possible influence and interaction of the variables of individuation, affectedness, definiteness, and animacy on the use of **מְךָ**.

CHAPTER 5

TOPICALITY PATTERNS OF VARIOUS CONSTITUENT ORDERS

This chapter is similar to the previous chapter in that I will present the topicality measures for a series of amalgamated clause types and classify them in terms of functional voice categories. Whereas in Chapter 4, the amalgamated clauses types were defined in relation to object marking, in this chapter they are based primarily on the constituent order of the subject, verb, and object. I will discuss the implications of the results in relation to possible functions of fronted constituents.

Alternate Constituent Orders in Active Clauses

In the following sections, I will present topicality measures for amalgamated clause types formed by grouping together all clause types with the same constituent order of verb, subject, and object. For syntactically active clauses, the following orders occur frequently enough to establish amalgamated clause types: VO, OV, VSO, VOS, and SVO.

Based on the findings of the previous chapter, there is a great difference between topicality patterns of pronominalized objects and nominal objects. This suggests that if the two types of objects are grouped together in the same amalgamated clause type, such a clause type might have a great deal of variation in its topicality patterns. For this reason, I subdivide each constituent order according to whether the subject and/or object is represented as a noun phrase or as a pronoun. I only present amalgamated clause types with ten or more members.

VO Clauses

VO clauses represent the most common constituent order in the narrative corpus, amounting to 46% of the total clauses. They also represent the most common constituent order in the directive discourse corpus, amounting to 49% of the total clauses. I subdivide them into two types: those with nominal objects and those with pronominal objects.

Nominal Objects in Narrative

The topicality measures for the 308 clauses in the narrative corpus with VO order with nominal objects are found in Table 55. This amalgamated clause type consists of the following clause types:

wayyiqtol,O (113); **wayyiqtol,etO** (74); **qatal,O** (41); **yiqtol,O** (32);
wayyiqtol,prepO (22); **qatal,etO** (15); **qatal,prepO** (5); **weqatal,O** (5);
Infa,etO (1)

TABLE 55

**TOPICALITY MEASURES FOR VO CLAUSES WITH
NOMINAL OBJECTS IN NARRATIVE**

n=308

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	85%	9%	High: 3-10	70%	21%
2-3	Med.: 9-9.5	10%	11%			
4-19	Low: 1-8	4%	17%	Low: 0-2	30%	79%
>19 Reactiv.	V. Low: 0.5	0%	7%			
20 New	V. Low: 0	1%	56%			
Standard Deviation		1.08	4.14	Standard Dev.	2.91	2.45
Mean Anaphoric Continuity		9.75	3.04	Mean Topic Pers.	4.79	1.65
Mean Anaphoric Continuity Difference		6.71		Mean Topic Persistence Dif.	3.14	
Mean Referential Distance		1.48	14.35			

The following are examples:

‘He split the rocks in the desert’	יבָקַע אֶרְזִים בַמִּדְבָּר		
yiqtol,O (Ps. 78:15a, NIV)			
RRD Actor: 1	Und.: New	TP Actor: 8	Und.: 2
‘and pierced his temple.’	וְחִלַּפְתָּ רְקָתוֹ		
weqatal,O (Jud. 5:26f, NIV)			
RRD Actor: 1	Und.: 1	TP Actor: 2	Und.: 0

By both topicality measures the actor is much more topical than the undergoer.

Actor high topic persistence exceeds undergoer high topic persistence by a large margin:
 $70\% - 21\% = 49\%$. The undergoer is demoted in topicality: only 21% have high cataphoric importance, and only 20% have high or medium anaphoric continuity. Hence this amalgamated clause type matches the category of antipassive functional voice.

In Directive Discourse

The topicality measures for the 313 clauses in the directive discourse corpus with VO order with nominal objects are found in Table 56. This amalgamated clause type consists of the following clause types:

weqatal,etO (71); **yiqtol,O** (69); **weqatal,O** (48); **yiqtol,etO** (31);
Imp,etO (22); **Imp,O** (17); **qatal,etO** (15); **weqatal,prepO** (12);
qatal,O (5); **yiqtol,prepO** (5); **Imp,prepO** (4); **wayyiqtol,etO** (4);
wayyiqtol,O (3); **Infa,etO** (2); **qatal,prepO** (2); **Imp,O,O2** (1);
weqatal,O,etO2 (1); **weqatal,S,prepO** (1)

The following are examples:

‘and plant any kind of fruit tree,’	וְנִטְעַתָּם כָּל־עֵץ מִאָכֵל		
weqatal,O (Lev. 19:23b, NIV)			
RRD Actor: 1	Und.: New	TP Actor: 9	Und.: 3
‘for then you will make your way prosperous,’	כִּי־אָוֶן תָּצַלְית אֲתָּה־דַרְכֶךָ		
yiqtol,etO (Jos. 1:8d, NASB)			
RRD Actor: 1	Und.: New	TP Actor: 7	Und.: 0

TABLE 56

**TOPICALITY MEASURES FOR VO CLAUSES WITH
NOMINAL OBJECTS IN DIRECTIVE DISCOURSE**

n=313

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	82%	15%	High: 3-10	71%	19%
2-3	Med.: 9-9.5	12%	10%			
4-19	Low: 1-8	3%	10%	Low: 0-2	29%	81%
>19 Reactiv.	V. Low: 0.5	0.3%	1%			
20 New	V. Low: 0	3%	63%			
Standard Deviation	1.90	4.40		Standard Dev.	3.11	2.19
Mean Anaphoric Continuity	9.50	3.19		Mean Topic Pers.	4.81	1.35
Mean Anaphoric Continuity Difference		6.31		Mean Topic Persistence Dif.		3.46
Mean Referential Distance	1.97	13.99				

By both topicality measures the actor is significantly more topical than the undergoer. Actor high topic persistence exceeds high undergoer topic persistence by a large margin: 71% - 19% = 52%. With regard to anaphoric continuity, the undergoer retains a modicum of topicality, 25% having high or medium anaphoric continuity. But less topicality is retained by the undergoer as measured by topic persistence. Hence this amalgamated clause type is borderline between the categories of antipassive and active functional voice.

Pronominal Objects in Narrative

The topicality measures for the 148 clauses in the narrative corpus with VO order with pronominal objects are found in Table 57. This amalgamated clause type consists of the following clause types:

wayyiqtol-Opro (70); **yiqtol-Opro** (33); **wayyiqtol,etOpro** (14);
qatal-Opro (10); **wayyiqtol,prepOpro** (9); **qatal,prepOpro** (5);
wayyiqtol-Opro,O2 (3); **wayyiqtol-Opro,etO** (1); **weqatal-Opro** (1);
yiqtol,prepOpro (1); **yiqtol,etOpro** (1)

The following are examples:

‘You armed me with strength for battle;’ wayyiqtol-Opro (2 Sa. 22:40a, NIV)	תִּזְרֵנִי חַיל לְמַחְמָה
RRD Actor: 9 Und.: 1 TP Actor: 4 Und.: 6	
‘and did not let him return to his father's house.’ qatal-Opro (1 Sa. 18:2b, NIV)	וְלֹא נִתְּנוּ לִשׁׁוּב בַּיּוֹת אֲבִיו
RRD Actor: 1 Und.: 1 TP Actor: 4 Und.: 6	

TABLE 57

TOPICALITY MEASURES FOR VO CLAUSES WITH
PRONOMINAL OBJECTS IN NARRATIVE

n=148

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	84%	74%	High: 3-10	72%	66%
2-3	Med.: 9-9.5	7%	19%			
4-19	Low: 1-8	7%	5%	Low: 0-2	28%	34%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	0%	1%			
Standard Deviation		1.29	1.63	Standard Dev.	2.73	3.44*
Mean Anaphoric Continuity		9.65	9.52	Mean Topic Pers.	4.35	4.65
Mean Anaphoric Continuity Difference		0.13		Mean Topic Persistence Dif.	-0.30	
Mean Referential Distance		1.70	1.96			

By both topicality measures, the topicality of the actor does not differ much from the topicality of the undergoer. This is especially evident from the small figures for mean anaphoric continuity difference and mean topic persistence difference. Both actors and undergoers have high topicality. As measured by anaphoric continuity, actor topicality is slightly more than undergoer topicality. The measures for topic persistence seem slightly puzzling: even though more actors have high topic persistence than undergoers (72% versus 66%), undergoers are slightly more topical as measured by mean topic persistence.

This can be explained by a closer examination of the topic persistence breakdown. It turns out that 28% of undergoers have very high topic persistence (a score of eight to ten), whereas only 13% of actors have very high topic persistence. This is what causes the undergoer mean topic persistence to be higher.

Since the topicality of both actor and undergoer are about the same, this amalgamated clause type is in between the categories of active functional voice and inverse functional voice. It can be characterized as semi-active functional voice, having balanced topicality.

Pronominal Objects in Directive Discourse

The topicality measures for the 139 clauses in the directive discourse corpus with VO order and pronominal objects are found in Table 58. This amalgamated clause type consists of the following clause types:

yiqtol-Opro (41); **weqatal-Opro** (27); **weqatal,etOpro** (24);
yiqtol,etOpro (14); **qatal-Opro** (10); **wayyiqtol-Opro** (5);
qatal,etOpro (4); **weqatal,prepOpro** (4); **yiqtol,prepOpro** (4);
Imp-Opro (2); **Imp,prepOpro** (1); **weqatal,etOpro,etO2** (1);
yiqtol-Opro,etO2 (1); **yiqtol-Opro,O2** (1)

The following are examples:

‘return it to him by sunset,’	עַד־בָּא הַשְׁמַשׁ תִּשְׁבֹּן לֹא		
yiqtol-Opro (Ex. 22:26b, NIV) ¹	RRD Actor: 1	Und.: 1	TP Actor: 4
‘Eat it in haste,’	וְאַכְלָתֶם אֹתוֹ בְּחַפּוֹזָן		
weqatal,etOpro (Ex. 12:11b, NIV)	RRD Actor: 1	Und.: 1	TP Actor: 4

¹ In the Hebrew versification, this is Ex. 22:25b.

TABLE 58
**TOPICALITY MEASURES FOR VO CLAUSES WITH
PRONOMINAL OBJECTS IN DIRECTIVE DISCOURSE**

n=139

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	82%	84%	High: 3-10	63%	45%
2-3	Med.: 9-9.5	12%	12%			
4-19	Low: 1-8	3%	2%	Low: 0-2	37%	55%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	4%	2%			
Standard Deviation	1.90	1.47	Standard Dev.	2.81	2.82*	
Mean Anaphoric Continuity	9.49	9.68	Mean Topic Pers.	3.65	2.92	
Mean Anaphoric Continuity Difference	-0.19		Mean Topic Persistence Dif.		0.73	
Mean Referential Distance	1.99	1.61				

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. As measured by anaphoric continuity, the two have almost the same topicality, with the undergoer slightly more topical as measured by the mean anaphoric continuity difference. As measured by topic persistence, the actor is somewhat more topical than the undergoer. Actor high topic persistence exceeds high undergoer topic persistence by a medium margin: 63% - 45% = 18%. The undergoer is highly topical as measured by anaphoric continuity, and retains considerable topicality as measured by topic persistence. This amalgamated clause type does not closely match any functional voice category. As measured by anaphoric continuity, it is closest to inverse functional voice, and as measured by topic persistence, it is similar to active functional voice.

OV Clauses

Clauses with OV constituent order represent 4% of the clauses in the narrative corpus. Their frequency in the directive discourse corpus is significantly higher, representing 15% of the clauses in the corpus.

In Narrative

The topicality measures for the forty clauses in the narrative corpus with OV constituent order and nominal objects are found in Table 59. This amalgamated clause type consists of the following clause types:

**O,qatal (17); O,yiqtol (12); etO,qatal (7); etO,yiqtol (1);
prepO,yiqtol (1); prepO,qatal (1); O,qatal,O2 (1)**

TABLE 59

**TOPICALITY MEASURES FOR OV CLAUSES WITH
NOMINAL OBJECTS IN NARRATIVE**

n=40

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	85%	25%	High: 3-10	73%	10%
2-3	Med.: 9-9.5	12%	3%			
4-19	Low: 1-8	3%	7%	Low: 0-2	27%	90%
>19 Reactiv.	V. Low: 0.5	0%	5%			
20 New	V. Low: 0	0%	60%			
Standard Deviation	0.81	4.48		Standard Dev.	2.66	1.95
Mean Anaphoric Continuity	9.80	3.17		Mean Topic Pers.	4.90	0.87
Mean Anaphoric Continuity Difference	6.63			Mean Topic Persistence Dif.	4.03	
Mean Referential Distance	1.40	14.05				

The following are examples:

'and shattered every tree of the field.' וְאַתָּכְלִיעַ זֶה שְׁרָה שָׁבֵר

etO,qatal (Ex. 9:25d, NASB)

RRD Actor: 1	Und.: New	TP Actor: 2	Und.: 0
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'I called out to my God'

prepO,yiqtol (2 Sa. 22:7b, NIV)

RRD Actor: 1	Und.: 1	TP Actor: 2	Und.: 4
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By both topicality measures the actor is much more topical than the undergoer.

High actor topic persistence exceeds high undergoer topic persistence by a large margin: 73% - 10% = 63%. With respect to cataphoric importance, the undergoer is demoted, with only 10% having high cataphoric importance. The percentage of undergoers with high anaphoric continuity is also fairly low at 25%. Hence this amalgamated clause type falls into the category of antipassive functional voice.

This finding illustrates the value of the methodology used in this study as a means of investigating the relationship between form and function of certain clause types. In a number of languages, such as Korean (Kwak 1994:276) and Modern Greek (Roland 1994:254), clause types with fronted objects function as an inverse functional voice. This makes it a reasonable hypothesis that such a clause type may be functioning as a functional inverse in another language such as Hebrew (Givón 1994a:18). But like any good scientific hypothesis, it is falsifiable, and has been falsified by the present study.²

In Directive Discourse

The topicality measures for the 133 clauses in the directive discourse corpus with OV constituent order and nominal objects are found in Table 60. This amalgamated clause type consists of the following clause types:

² A similar result was found by Brainard (1994) in her study of Karao. She hypothesized that the left-dislocation construction with fronted patient might be a functional inverse (1994:373), but after calculating the topicality measures, it showed an active-direct topicality pattern (1994:382).

O,yiqtol (82); **etO,yiqtol** (29); **prepO,yiqtol** (8); **O,qatal** (5);
etO,qatal (4); **etO,Imp** (2); **O,Imp** (2); **O,yiqtol,etO** (1)

The following are examples:

‘and cut down their Asherah poles’	וְאַתֶּן־אֲשֶׁר־יָדַעֲתִי תִּכְלַתְנֵן		
etO,yiqtol (Ex. 34:13c, NIV)			
RRD Actor: 1	Und.: New	TP Actor: 6	Und.: 0
‘if you use a tool on it.’	כִּי תִּרְבֹּקְה֙ הַנְּפָתָחָלֵיכָה		
O,qatal (Ex. 20:25c, NIV)			
RRD Actor: 1	Und.: New	TP Actor: 3	Und.: 0

TABLE 60

**TOPICALITY MEASURES FOR OV CLAUSES WITH
NOMINAL OBJECTS IN DIRECTIVE DISCOURSE**

n=133

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	80%	8%	High: 3-10	74%	6%
2-3	Med.: 9-9.5	17%	3%			
4-19	Low: 1-8	3%	8%	Low: 0-2	26%	94%
>19 Reactiv.	V. Low: 0.5	1%	2%			
20 New	V. Low: 0	0%	80%			
Standard Deviation	0.93	3.28		Standard Dev.	3.29	1.15
Mean Anaphoric Continuity	9.76	1.43		Mean Topic Pers.	5.50	0.62
Mean Anaphoric Continuity Difference		8.33		Mean Topic Persistence Dif.		4.88
Mean Referential Distance	1.49	17.34				

By both topicality measures the actor is much more topical than the undergoer.

High actor topic persistence exceeds high undergoer topic persistence by a large margin:
 $74\% - 6\% = 68\%$. The mean anaphoric continuity difference is very high at 8.33. The undergoer is clearly demoted with only 6% having high cataphoric importance. The percentage of undergoers with high or medium anaphoric continuity is also very low at

11%. Hence this amalgamated clause type matches the category of antipassive functional voice.

VSO Clauses

Clauses with VSO constituent order represent 19% of the clauses in the narrative corpus. They represent 6% of the clauses in the directive discourse corpus, a significantly lower proportion.

In Narrative

The topicality measures for the 184 clauses in the narrative corpus with VSO constituent order with nominal subjects and objects are found in Table 61. This amalgamated clause type consists of the following clause types:

wayyiqtol,S,etO (114); **wayyiqtol,S,O** (30); **wayyiqtol,S,prepO** (22);
qatal,S,etO (9); **qatal,S,O** (3); **wayyiqtol,S,prepO** (2);
weqatal,S,etO (2); **yiqtol,S,etO** (2); **qatal,S,prepO** (1); **yiqtol,S,O** (1)

The following are examples:

וַיִּתְּנוּ לָוֹ שָׂאֵל אֶת־מִיכָּל בָּתָוּ לְאִשָּׁה
‘Then Saul gave him his daughter Michal in marriage.’

wayyiqtol,S,etO (1 Sa. 18:27f, NIV)
RRD Actor: 1 Und.: 27 TP Actor: 7 Und.: 1

כַּאֲשֶׁר צִוָּה יְהוָה אֶת־מִשְׁׁה וְאֶחָד
‘as the LORD had commanded Moses and Aaron’

qatal,S,etO (Ex. 12:28c, KJV)
RRD Actor: 5 Und.: 25 TP Actor: 1 Und.: 3

TABLE 61
**TOPICALITY MEASURES FOR VSO CLAUSES IN
NARRATIVE**

n=184

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	38%	23%	High: 3-10	65%	31%
2-3	Med.: 9-9.5	31%	12%			
4-19	Low: 1-8	23%	21%	Low: 0-2	35%	69%
>19 Reactiv.	V. Low: 0.5	4%	13%			
20 New	V. Low: 0	4%	31%			
Standard Deviation		2.82	4.45	Standard Dev.	2.66	2.58
Mean Anaphoric Continuity		8.24	4.80	Mean Topic Pers.	3.91	2.03
Mean Anaphoric Continuity Difference		3.44		Mean Topic Persistence Dif.	1.87	
Mean Referential Distance		4.48	11.10			

By both topicality measures, the actor is more topical than the undergoer. High actor topic persistence exceeds high undergoer topic persistence by a considerable margin: $65\% - 31\% = 34\%$. The undergoer retains some topicality with 31% having high topic persistence and 35% having high or medium anaphoric continuity. Hence this amalgamated clause type falls into the category of active functional voice.

In Directive Discourse

The topicality measures for the fifty-five clauses in the directive discourse corpus with VSO constituent order and with nominal subjects and objects are found in Table 62. This amalgamated clause type consists of the following clause types:

yiqtol,S,etO (15); **weqatal,S,etO** (12); **yiqtol,S,O** (11); **qatal,S,etO** (7);
Imp,S,O (4); **weqatal,S,O** (4); **wayyiqtol,S,etO** (1); **wayyiqtol,S,O** (1)

The following are examples:

‘then all Israel will bring ropes to that city,’	וְהַשְׁׂיאוּ כָל-יִשְׂרָאֵל אֶל-חַטָּאת הַכְּבָשׂוֹם	weqatal,S,O (2 Sa. 17:13b, NIV)	RRD Actor: 4	Und.: New	TP Actor: 1	Und.: 0
‘If a man steals an ox or a sheep’ yiqtol,S,O (Ex. 21:37a, NIV) ³	כִּי יִגְנְבֶּה-אִישׁ שָׂׂעֵר אוֹ-שָׂׂה	RRD Actor: New	Und.: New	TP Actor: 9	Und.: 2	

TABLE 62

**TOPICALITY MEASURES FOR VSO CLAUSES IN
DIRECTIVE DISCOURSE**

n=55

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	36%	13%	High: 3-10	53%	25%
2-3	Med.: 9-9.5	18%	7%			
4-19	Low: 1-8	9%	7%	Low: 0-2	47%	75%
>19 Reactiv.	V. Low: 0.5	0%	2%			
20 New	V. Low: 0	36%	73%			
Standard Deviation	4.65*	4.06	Standard Dev.	2.35	2.56	
Mean Anaphoric Continuity	6.03	2.32	Mean Topic Pers.	3.18	1.73	
Mean Anaphoric Continuity Difference	3.71		Mean Topic Persistence Dif.		1.45	
Mean Referential Distance	8.58	15.64				

By both topicality measures, the actor is more topical than the undergoer. High actor topic persistence is 28% more than high undergoer topic persistence. The topicality of the undergoer is quite low as measured by anaphoric continuity, with only 20% having high or medium anaphoric continuity. As measured by topic persistence, it is on the low borderline of 25% high topic persistence. This amalgamated clause type lies on the borderline between the categories of antipassive functional voice and active functional voice. In a prototypical antipassive functional voice, one would expect the actor

³ In the Hebrew versification, this is Ex. 21:37a.

topicality to exceed the undergoer topicality by a larger margin than is found in Table 62. In a prototypical active functional voice, one would expect the undergoer to retain more topicality.

VOS Clauses

Clauses with VOS constituent order represent 4% of the clauses in the narrative corpus . They represent 2% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the thirty-six clauses in the narrative corpus with VOS constituent order and pronominal objects are found in Table 63. This amalgamated clause type consists of the following clause types:

wayyiqtol-Opro,S (13); **qatal-Opro,S** (8); **wayyiqtol,prepOpro,S** (5);
wayyiqtol,etOpro,S (4); **wayyiqtol-Opro,S,O2** (2); **yiqtol-Opro,S** (2);
weqatal-Opro,S (1); **O,yiqtol-Opro,S** (1)

The following are examples:

'but God did not deliver him into his hand.'

וְלֹא־נָתַן אֱלֹהִים בְּيַד־

qatal-Opro,S (1 Sa. 23:14d, NASB)

RRD Actor: 11 Und.: 1 TP Actor: 1

Und.: 9

'and the LORD showed him a piece of wood'

וַיֹּרֶא יְהֹוָה עֵץ

wayyiqtol-Opro,S,O2 (Ex. 15:25b, NIV)

RRD Actor: 1 Und.: 1 TP Actor: 6

Und.: 1

TABLE 63
**TOPICALITY MEASURES FOR VOS CLAUSES WITH
 PRONOMINAL OBJECTS IN NARRATIVE**

n=36

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	47%	75%	High: 3-10	44%	69%
2-3	Med.: 9-9.5	17%	17%			
4-19	Low: 1-8	17%	6%	Low: 0-2	56%	31%
>19 Reactiv.	V. Low: 0.5	3%	0%			
20 New	V. Low: 0	17%	3%			
Standard Deviation	3.90*	1.79		Standard Dev.	2.54	3.32*
Mean Anaphoric Continuity	7.43	9.46		Mean Topic Pers.	2.47	5.08
Mean Anaphoric Continuity Difference	-2.03			Mean Topic Persistence Dif.	-2.61	
Mean Referential Distance	5.97	2.06				

For both topicality measures, the undergoer is somewhat more topical than the actor. Among other things, this is indicated by the fairly high negative values for the mean anaphoric continuity difference and mean topic persistence difference. The actor retains fairly high topicality, with over 40% having high values for both topicality measures. This amalgamated clause type therefore falls into the category of inverse functional voice.

In Directive Discourse

The topicality measures for the seventeen clauses in the directive discourse corpus with VOS constituent order and pronominal objects are found in Table 64. This amalgamated clause type consists of the following clause types:

**yiqtol-Opro,S (5); qatal-Opro,S (3); weqatal-Opro,S (3);
 weqatal,etOpro,S (3); yiqtol,prepOpro,S (2); yiqtol,etOpro,S (1)**

The following are examples:

‘If your father misses me at all,’ yiqtol-Opro,S (1 Sa. 20:6a, NIV)	אִם־פָּקַד יִפְקַדְנִי אָבִיךְ
RRD Actor: 3 Und.: 1 TP Actor: 4 Und.: 6	
‘why would Pharaoh listen to me?’ yiqtol,prepOpro,S (Ex. 6:30c, NIV)	וְאֵיךְ יִשְׁמַע אֶלְيָהוּ פְּרֻעָה
RRD Actor: 3 Und.: 1 TP Actor: 5 Und.: 5	

TABLE 64

TOPICALITY MEASURES FOR VOS CLAUSES WITH
PRONOMINAL OBJECTS IN DIRECTIVE DISCOURSE

n=17

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	24%	88%	High: 3-10	47%	59%
2-3	Med.: 9-9.5	24%	6%			
4-19	Low: 1-8	29%	6%	Low: 0-2	53%	41%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	24%	0%			
Standard Deviation	4.10*	0.38	Standard Dev.	2.32	3.31*	
Mean Anaphoric Continuity	6.47	9.88	Mean Topic Pers.	2.59	4.24	
Mean Anaphoric Continuity Difference	-3.41		Mean Topic Persistence Dif.		-1.65	
Mean Referential Distance	7.82	1.24				

For both topicality measures, the undergoer is more topical than the actor. This is indicated by the fairly high negative values for the mean anaphoric continuity difference and mean topic persistence difference. The actor retains fairly high topicality, with 47% having high topic persistence and 48% having high or medium anaphoric continuity. This amalgamated clause type therefore matches the category of inverse functional voice.

SVO Clauses

Clauses with SVO constituent order represent 5% of the clauses in the narrative corpus. They represent 6% of the clauses in the directive discourse corpus.

SVO clauses are subdivided according to whether the subject and object are nominal or pronominal. The most common case is when both are nominal. Another common subtype is when the subject is nominal and the object is pronominal. Both of these subtypes occur with sufficient frequency in narrative and directive discourse so that I am able to calculate the topicality patterns of an amalgamated clause type. Another pattern is when the subject is pronominal and the object nominal. This subtype is frequent in directive discourse, and is presented below, but it is rare in narrative (only three occurrences in the corpus). Another rare subtype not analyzed is when both subject and object are pronominal.

Nominal Subjects and Objects in Narrative

The topicality measures for the thirty-four clauses in the narrative corpus with SVO order and with nominal subjects and objects are found in Table 65. This amalgamated clause type consists of the following clause types:

S,qatal,etO (17); **S,qatal,O** (11); **S,yiqtol,O** (4); **S,qatal,prepO** (1);
S,wayyiqtol,etO (1)⁴

The following are examples:

‘only Jonathan and David knew
about the matter.’

S,qatal,etO (1 Sa. 20:39b, NASB)

RRD Actor: 2

Und.: 1

TP Actor: 5

אֶךְ יָהוֹנָתָן וְדָוִד יְדַעֲו אֶת־הַדָּבָר

Und.: 0

⁴ The preverbal actor in this unusual clause (Ex. 9:21b) is a nominalized clause. Although I have analyzed it as subject, an alternative analysis might classify it as a left-dislocated topic phrase.

'Your right hand, O LORD, shattered the enemy.'

ימינך ידך תִּתְעַצֵּץ אֹיְבָ

S,yiqtol,O (Ex. 15:6b, NIV)

RRD Actor: 1

Und.: New

TP Actor: 0

Und.: 4

TABLE 65

**TOPICALITY MEASURES FOR SVO CLAUSES WITH
NOMINAL SUBJECTS AND OBJECTS IN NARRATIVE**

n=34

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	47%	15%	High: 3-10	26%	12%
2-3	Med.: 9-9.5	21%	6%			
4-19	Low: 1-8	15%	18%	Low: 0-2	74%	88%
>19 Reactiv.	V. Low: 0.5	6%	9%			
20 New	V. Low: 0	12%	53%			
Standard Deviation		3.74*	4.19	Standard Dev.	2.95	2.04
Mean Anaphoric Continuity		7.65	3.10	Mean Topic Pers.	1.85	1.18
Mean Anaphoric Continuity Difference		4.55		Mean Topic Persistence Dif.	0.67	
Mean Referential Distance		5.59	14.26			

By both topicality measures, the actor is more topical than the undergoer. The actor is considerably more topical than the undergoer as measured by anaphoric continuity, with 68% of actors having high or medium anaphoric continuity, as compared to 21% of undergoers. On the other hand, the topic persistence percentages show low topicality for both the actor and undergoer, with the actor being somewhat more topical. Mean topic persistence for both actor and undergoer is less than two. The undergoer is demoted in topicality. But this amalgamated clause type does not fit the pattern of an antipassive functional voice because of the relatively low topicality of the actor. The high standard deviation for actor anaphoric continuity shows that these clauses vary considerably with respect to this measure. This amalgamated clause type is close to the categories of antipassive and active functional voice, but differs from both in the

relatively low topicality of the actor. One might characterize this as a low topicality active functional voice.

Nominal Subjects and Objects in Directive Discourse

The topicality measures for the twenty clauses in the directive discourse corpus with SVO order and with nominal subjects and objects are found in Table 66. This amalgamated clause type consists of the following clause types:

S,yiqtol,O (10); S,yiqtol,etO (4); S,Imp,etO (1); S,qatal,etO (1);
 S,qatal,O (1); S,weqatal,etO (1)⁵; S,weqatal,O (1)⁶; S,yiqtol,prepO (1)

TABLE 66

TOPICALITY MEASURES FOR SVO CLAUSES WITH NOMINAL SUBJECTS AND OBJECTS IN DIRECTIVE DISCOURSE

n=20

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	40%	10%	High: 3-10	45%	15%
2-3	Med.: 9-9.5	0%	10%			
4-19	Low: 1-8	5%	5%	Low: 0-2	55%	85%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	55%	75%			
Standard Deviation	4.99*	4.23	Standard Dev.	3.64	1.22	
Mean Anaphoric Continuity	4.37	2.37	Mean Topic Pers.	3.80	0.70	
Mean Anaphoric Continuity Difference	2.00		Mean Topic Persistence Dif.	3.10		
Mean Referential Distance	11.70	15.50				

⁵ The preverbal actor in this unusual clause (Lev. 13:17a) is a noun phrase modified by a relative clause. Although I have analyzed it as subject, an alternative analysis might classify it as a left-dislocated topic phrase.

⁶ The preverbal actor in this unusual clause (Lev. 17:15a) is a noun phrase modified by a relative clause. Although I have analyzed it as subject, an alternative analysis might classify it as a left-dislocated topic phrase.

The following are examples:

אִם־אָרְבֵּנוֹ יִתְּן־לּוֹ אֲשֶׁר

‘If his master gives him a wife’

S,yiqtol,O (Ex. 21:4a, NIV)

RRD Actor: 6 Und.: New TP Actor: 6 Und.: 3

וְהַלּוּיִם יִסְמְכוּ אֶת־יִדְיהם עַל רֹאשׁ הַפְּרִים

‘Now the Levites shall lay their hands on the heads of the bulls;’

S,yiqtol,etO (Num. 8:12a, NASB)

RRD Actor: 1 Und.: New TP Actor: 10 Und.: 0

By both topicality measures, the actor is more topical than the undergoer. High actor topic persistence is 30% more than high undergoer topic persistence. The undergoer is demoted in topicality with only 20% having high or medium anaphoric continuity, and only 15% having high topic persistence. This amalgamated clause type does not closely match any of the functional voice categories but lies on the borderline between the categories of antipassive functional voice and active functional voice. In a prototypical antipassive functional voice, one would expect the actor topicality to exceed the undergoer topicality by a larger margin. In a prototypical active functional voice, one would expect the undergoer to retain more topicality. One might characterize this as a low topicality active functional voice.

Pronominal Objects in Narrative

The topicality measures for the eleven clauses in the narrative corpus with SVO order and with nominal subjects and pronominal objects are found in Table 67. This amalgamated clause type consists of the following clause types:

S,yiqtol-Opro (6); **S,qatal-Opro** (4); **S,qatal,prepOpro** (1)

The following are examples:

וְהִאֱלֹהִים יִשְׁנְנוּ בְּקֻולָּה

‘and God answered him by a voice’

S,yiqtol-Opro (Ex. 19:19d, KJV)

RRD Actor: 6 Und.: 1 TP Actor: 6 Und.: 5

'and that Michal Saul's daughter loved him'

S,qatal-Opro (1 Sa. 18:28d, KJV)

RRD Actor: 4

Und.: 1

TP Actor: 0

וַיַּכְלֶל בָּת־שָׁאֹל אֶחָתָה

Und.: 9

TABLE 67

TOPICALITY MEASURES FOR SVO CLAUSES WITH PRONOMINAL OBJECTS IN NARRATIVE

n=11

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	27%	73%	High: 3-10	36%	82%
2-3	Med.: 9-9.5	9%	18%			
4-19	Low: 1-8	27%	9%	Low: 0-2	64%	18%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	36%	0%			
Standard Deviation	4.63*	0.80		Standard Dev.	2.91	3.17*
Mean Anaphoric Continuity	5.73	9.59		Mean Topic Pers.	2.36	5.55
Mean Anaphoric Continuity Difference	-3.86			Mean Topic Persistence Dif.	-3.19	
Mean Referential Distance	9.18	1.82				

For both topicality measures, the undergoer is much more topical than the actor.

This is indicated by the high negative values for the mean anaphoric continuity difference and mean topic persistence difference. The actor retains considerable topicality, with 36% having high topic persistence and 36% having high or medium anaphoric continuity.

This amalgamated clause type therefore matches the category of inverse functional voice.

Pronominal Objects in Directive Discourse

The topicality measures for the fourteen clauses in the directive discourse corpus with SVO order and with nominal subjects and pronominal objects are found in Table 68. This amalgamated clause type consists of the following clause types:

**S,qatal-Opro (3); S,yiqtol-Opro (3); S,yiqtol,etOpro (3);
S,yiqtol,prepOpro (3); S,Imp-Opro (1); S,qatal,prepOpro (1)**

The following are examples:

‘every male shall eat it.’	כָּל־זְכָר יִאֱכַל אֶת־
S,yiqtol,etOpro (Num. 18:10b, NIV)	קַיְלָא יְדֹוֹ גָּנְעָה בְּנָנוֹ
RRD Actor: New Und.: 1 TP Actor: 1	Und.: 1
‘that it was not His hand that struck us’	קַי לֹא יְדֹוֹ גָּנְעָה בְּנָנוֹ
S,qatal,prepOpro (1 Sa. 6:9f, NASB)	קַי לֹא יְדֹוֹ גָּנְעָה בְּנָנוֹ
RRD Actor: 20 Und.: 1 TP Actor: 0	Und.: 1

TABLE 68

**TOPICALITY MEASURES FOR SVO CLAUSES WITH
PRONOMINAL OBJECTS IN DIRECTIVE DISCOURSE**

n=14

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	7%	79%	High: 3-10	21%	29%
2-3	Med.: 9-9.5	14%	0%			
4-19	Low: 1-8	7%	21%	Low: 0-2	79%	71%
>19 Reactiv.	V. Low: 0.5	7%	0%			
20 New	V. Low: 0	64%	0%			
Standard Deviation	4.22	1.88		Standard Dev.	1.35	1.85
Mean Anaphoric Continuity	2.61	9.11		Mean Topic Pers.	1.14	1.79
Mean Anaphoric Continuity Difference	-6.50			Mean Topic Persistence Dif.	-0.65	
Mean Referential Distance	15.14	2.79				

For both topicality measures, the undergoer is more topical than the actor. However the topicality of the undergoer is much higher as measured by anaphoric continuity than as measured by topic persistence. This is indicated by the very high negative values for the mean anaphoric continuity difference as compared to the small negative value of the mean topic persistence difference. The actor does not retain much topicality, with only 21% having high topic persistence and 21% having high or medium

anaphoric continuity. Except for the low topicality of the actor, this amalgamated clause type matches the category of inverse functional voice.

Pronominal Subjects in Directive Discourse

The topicality measures for the twenty clauses in the directive discourse corpus with SVO order and with pronominal subjects and nominal objects are found in Table 69. This amalgamated clause type consists of the following clause types:

Spro,qatal,etO (12); **Spro,yiqtol,etO** (2); **Spro,yiqtol,O** (2);
Spro,Imp,etO (1); **Spro,Imp,prepO** (1); **Spro,yiqtol,etO,etO2** (1);
Spro,yiqtol,prepO (1)

The following are examples:

‘I defy the armies of Israel this day’ **אני חרבתי את־מערכות ישראָל הַיּוֹם הַזֶּה**
Spro,qatal,etO (1 Sa. 17:10b, KJV)
 RRD Actor: 1 Und.: 12 TP Actor: 2 Und.: 0

‘But I will harden Pharaoh's heart,’ **וְאִנּוּ אָקַשֵּׁה אֶת־לְבַב פְּרָעָה**
Spro,yiqtol,etO (Ex. 7:3a, NIV)
 RRD Actor: 3 Und.: New TP Actor: 6 Und.: 0

TABLE 69

TOPICALITY MEASURES FOR SVO CLAUSES WITH PRONOMINAL SUBJECTS IN DIRECTIVE DISCOURSE

n=20

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	40%	0%	High: 3-10	65%	10%
2-3	Med.: 9-9.5	40%	5%			
4-19	Low: 1-8	15%	20%	Low: 0-2	35%	90%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	5%	75%			
Standard Deviation		2.24	3.40	Standard Dev.	2.93	1.69
Mean Anaphoric Continuity		8.90	1.85	Mean Topic Pers.	4.45	0.85
Mean Anaphoric Continuity Difference		7.05		Mean Topic Persistence Dif.	3.60	
Mean Referential Distance		3.15	16.55			

By both topicality measures, the actor is much more topical than the undergoer. High actor topic persistence is 55% more than high undergoer topic persistence. The undergoer is demoted in topicality, especially with respect to anaphoric continuity, with only 5% having medium anaphoric continuity. This amalgamated clause type matches the category of antipassive functional voice.

OVS Clauses

The topicality measures for the ten clauses in the narrative corpus with OVS constituent order and with nominal subjects and objects are found in Table 70. This represents 1% of the clauses in the corpus.⁷ This amalgamated clause type consists of the following clause types:

etO,qatal,S (4); **O,qatal,S** (4); **O,yiqtol,S** (2)

The following are examples:

‘and David rescued his two wives.’ etO,qatal,S (1 Sa. 30:18c, KJV) RRD Actor: 1 Und.: 55	וְאַתָּה שְׁתֵּי נְשֵׁיו הַצִּיל דָּוֹד	TP Actor: 6 Und.: 0
‘Fire consumed their young men,’ O,qatal,S (Ps. 78:63a, NIV) RRD Actor: 94 Und.: New	בְּחֻרְיוֹן אֲכַלְתָּה אָשׁ	TP Actor: 0 Und.: 0
‘They loathed all food’ O,yiqtol,S (Ps. 107:18a, NIV) RRD Actor: New Und.: New	כָּל־אָכְלָתָה נִנְפְּשָׁם	TP Actor: 0 Und.: 0

⁷ Topicality measures are not presented for OVS clauses in directive discourse, since there are only five such clauses in that corpus.

TABLE 70
**TOPICALITY MEASURES FOR OVS CLAUSES IN
NARRATIVE**

n=10

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	40%	20%	High: 3-10	60%	0%
2-3	Med.: 9-9.5	20%	0%			
4-19	Low: 1-8	0%	30%	Low: 0-2	40%	100%
>19 Reactiv.	V. Low: 0.5	20%	10%			
20 New	V. Low: 0	20%	40%			
Standard Deviation	4.96*	4.29		Standard Dev.	3.33*	0.48
Mean Anaphoric Continuity	6.00	3.95		Mean Topic Pers.	3.80	0.30
Mean Anaphoric Continuity Difference	2.05			Mean Topic Persistence Dif.	3.50	
Mean Referential Distance	8.80	12.70				

Because of the small sample size, the results shown in Table 70 should be viewed with caution. By both topicality measures, the actor is significantly more topical than the undergoer. High actor topic persistence is 60% more than high undergoer topic persistence. It is clear that the undergoer is demoted, since 0% have high cataphoric importance and only 20% have high anaphoric continuity. Hence this amalgamated clause type falls into the category of antipassive functional voice. This contrasts with Givón's suggestion that the OVS order is an inverse in Early Biblical Hebrew (1995:88).

The high standard deviation for actor anaphoric continuity and actor topic persistence indicates that the values for these variables vary widely. This suggests that the OVS clause type does not give a clear signal as to the topicality of the actor; it primarily signals the low topicality of the undergoer.

Syntactically Passive Clauses

In Chapter 5, I found that in directive discourse, the **yiqtol-Pas,U** and **U,yiqtol-Pas** clause types formed a low topicality cluster which did not match any of Givón's

functional voice categories. Even though they have contrasting constituent orders, this seems to have little impact on their topicality patterns. In contrast to this, in narrative, the **qatal-Pas,U** and **U,qatal-Pas** clause types have quite different topicality patterns. In this section I will investigate further what impact the position of the undergoer has on topicality patterns in syntactically passive clauses. I will compare syntactically passive clauses with VU order and those with UV order, in both narrative and directive discourse, including less common clause types.

Syntactically Passive Clauses in Narrative

Passive clauses with constituent order of verb followed by undergoer represent 5.5% of the clauses in the narrative corpus. Passive clauses with constituent order of undergoer followed by verb represent 3% of the clauses in the narrative corpus

VU Passive Clauses

The topicality measures for the fifty-five passive clauses in the narrative corpus with VU order are found in Table 71. This amalgamated clause type consists of the following clause types:

wayyiqtol-Pas,U (34); **qatal-Pas,U** (16); **yiqtol-Pas,U** (3);
qatal-Pas,prepU (1); **wayyiqtol-Pas,etU** (1);

For most clause types the undergoer functions as subject, but its status as subject is dubious for the **qatal-Pas,prepU** and **wayyiqtol-Pas,etU** clause types. The following are examples:

‘and the mountains were covered.’

וַיְכַסּוּ הַהֲרִים

wayyiqtol-Pas,U (Gen. 7:20b, KJV)

RRD Actor: 1

Und.: 2

TP Actor: 2

Und.: 0

וְתַרְמָה יִגְלֵה אֶלְיוֹן דְּבָרֵי־יְהוָה

'The word of the LORD had not yet
been revealed to him.'

yiqtol-Pas, U (1 Sa. 3:7b, NIV)

RRD Actor: 1

Und.: 30

TP Actor: 2

Und.: 0

TABLE 71

TOPICALITY MEASURES FOR VU PASSIVE CLAUSES IN
NARRATIVE

n=55

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	20%	27%	High: 3-10	9%	27%
2-3	Med.: 9-9.5	2%	20%			
4-19	Low: 1-8	9%	27%	Low: 0-2	91%	73%
>19 Reactiv.	V. Low: 0.5	0%	7%			
20 New	V. Low: 0	69%	18%			
Standard Deviation	4.33*	4.12	Standard Dev.	1.54	2.92	
Mean Anaphoric Continuity	2.76	6.32	Mean Topic Pers.	0.67	2.27	
Mean Anaphoric Continuity Difference	-3.56		Mean Topic Persistence Dif.	-1.60		
Mean Referential Distance	14.78	8.18				

By both topicality measures the undergoer is more topical than the actor. The high topic persistence of the undergoer exceeds that of the actor by a significant margin: 27% - 9% = 18%. With regard to anaphoric continuity, 47% of undergoers have high or medium anaphoric continuity, as compared to 22% of actors. The actor is clearly demoted in topicality, especially with regard to cataphoric importance. Even though the topicality of the undergoer is rather low as measured by cataphoric importance (only 27%), this amalgamated clause type most closely matches the category of passive functional voice.

UV Passive Clauses

The topicality measures for the twenty-nine clauses in the narrative corpus with UV order and nominal undergoers are found in Table 72. This amalgamated clause type consists of the following clause types:

U,qatal-Pas (24); U,yiqtol-Pas (4); etU,qatal-Pas (1)

For most clause types the undergoer functions as subject, but its status as subject is dubious for the **etU,qatal-Pas** clause type. The following are examples:

'his chosen captains also are drowned
in the Red sea'

U,qatal-Pas (Ex. 15:4b, KJV)

RRD Actor: New	Und.: New	TP Actor: 0	Und.: 2
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'but her voice was not heard.'

U,yiqtol-Pas (1 Sa. 1:13c, NIV)

RRD Actor: 3	Und.: New	TP Actor: 5	Und.: 0
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TABLE 72
**TOPICALITY MEASURES FOR UV PASSIVE CLAUSES IN
NARRATIVE**

n=29

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	14%	17%	High: 3-10	24%	10%
2-3	Med.: 9-9.5	14%	3%			
4-19	Low: 1-8	10%	21%	Low: 0-2	76%	90%
>19 Reactiv.	V. Low: 0.5	3%	14%			
20 New	V. Low: 0	59 %	45%			
Standard Deviation		4.56*	4.38	Standard Dev.	2.32	2.19
Mean Anaphoric Continuity		3.52	3.62	Mean Topic Pers.	1.48	1.07
Mean Anaphoric Continuity Difference		-0.10		Mean Topic Persistence Dif.		0.41
Mean Referential Distance		13.38	13.31			

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. With regard to anaphoric continuity, the undergoer and actor have almost the same topicality, as is indicated by the very low value of the mean anaphoric continuity difference (-0.10). On the other hand, with regard to cataphoric importance, the topicality of actor is slightly more than that of the undergoer, as indicated by the small positive mean topic persistence difference of 0.41. This amalgamated clause type does not match any of Givón's functional voice categories.

In comparing Tables 71 and 72, it is clear that in narrative, the constituent order of the undergoer is related to topicality patterns of passive verbs. When the undergoer precedes the verb, this tends to signal relatively lower undergoer topicality and higher actor topicality. On the other hand, when the undergoer follows the verb, this tends to signal relatively higher undergoer topicality and lower actor topicality.

Syntactically Passive Clauses in Directive Discourse

Passive clauses with constituent order of verb followed by undergoer represent 4% of the clauses in the directive discourse corpus. Passive clauses with constituent order of undergoer followed by verb represent 3% of the clauses in the directive discourse corpus.

VU Passive clauses

The topicality measures for the thirty-five passive clauses in the directive discourse corpus with VU order are found in Table 73. This amalgamated clause type consists of the following clause types:

yiqtol-Pas,U (19); **weqatal-Pas,U** (12); **qatal-Pas,U** (3);
yiqtol-Pas,etU (1)

For most clause types the undergoer functions as subject, but its status as subject is dubious for the **yiqtol-Pas,etU** clause type. The following are examples:

‘nor shall any leaven be seen among you in all your borders’		וְלَا יִרְאָה לְךָ שָׁאֵר בְּכָל־ג֭בְּלֹק:
yiqtol-Pas,U (Ex. 13:7c, NASB)		
RRD Actor: New	Und.: New	TP Actor: 0
‘and that man shall be cut off from among his people’		וְנִכְרַת הָאִישׁ הַהֵּן מִקְרָב עַמּוֹ
weqatal-Pas,U (Lev. 17:4d, NASB)		
RRD Actor: New	Und.: 1	TP Actor: 0
		Und.: 0

TABLE 73

TOPICALITY MEASURES FOR VU PASSIVE CLAUSES IN DIRECTIVE DISCOURSE

n=35

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	11%	29%	High: 3-10	6%	14%
2-3	Med.: 9-9.5	9%	9%			
4-19	Low: 1-8	0%	11%	Low: 0-2	94%	86%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	80%	51%			
Standard Deviation	3.95*	4.79	Standard Dev.	1.63	1.51	
Mean Anaphoric Continuity	1.94	4.51	Mean Topic Pers.	0.54	0.94	
Mean Anaphoric Continuity Difference	-2.57		Mean Topic Persistence Dif.	-0.40		
Mean Referential Distance	16.31	11.46				

By both topicality measures the undergoer is more topical than the actor. But neither the undergoer nor the actor has high topicality, especially with regard to cataphoric importance. The most common use of this amalgamated clause type is when both the actor and the undergoer are new referents. Even though these clauses are syntactically passive, this amalgamated clause type does not match the category of

passive functional voice, since the topicality of the undergoer is not much more than that of the actor. Rather, it falls into a category not covered in Givón's system, where both actor and undergoer have low topicality, and the undergoer slightly more topical than the actor.

UV Passive Clauses

The topicality measures for the twenty-four passive clauses in the directive discourse corpus with UV order and with nominal undergoers are found in Table 74. This amalgamated clause type consists of the following clause types:

U,yiqtol-Pas (21); **U,weqatal-Pas** (2); **U,qatal-Pas** (1)

For most clause types the undergoer functions as subject, but in the **U,weqatal-Pas** clause type it is better analyzed as a left-dislocated topic phrase.⁸ The following are examples:

‘the bull must be stoned’

הַשׂוֹר יִפְקַל

U,yiqtol-Pas (Ex. 21:29e, NIV)

RRD Actor: New

Und.: 1

TP Actor: 0

Und.: 4

‘nor freedom given her,’

אֲזַחֲשָׁה לֹא נָפְנוּ-לָה

U,qatal-Pas (Lev. 19:20d, KJV)

RRD Actor: New

Und.: 1

TP Actor: 1

Und.: 3

⁸ The references for this unusual clause type are Exodus 31:14d and 1 Samuel 25:27. The former has a resumptive subject after the verb.

TABLE 74**TOPICALITY MEASURES FOR UV PASSIVE CLAUSES IN DIRECTIVE DISCOURSE**

n=24

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	12%	25%	High: 3-10	13%	17%
2-3	Med.: 9-9.5	8%	21%			
4-19	Low: 1-8	0%	8%	Low: 0-2	87%	83%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	79 %	46%			
Standard Deviation	4.03*	4.75		Standard Dev.	3.24	1.55
Mean Anaphoric Continuity	2.02	4.83		Mean Topic Pers.	1.37	1.04
Mean Anaphoric Continuity Difference	-2.81			Mean Topic Persistence Dif.	0.33	
Mean Referential Distance	16.17	10.87				

The topicality measures give a mixed message with regard to the relative topicality of actor and undergoer. With regard to anaphoric continuity, the undergoer is more topical than the actor, 46% having high or medium anaphoric continuity, whereas the figure for actors is 20%. On the other hand, with regard to cataphoric importance, the topicality of actor and undergoer is almost the same. There is a slightly higher percentage of undergoers with high topic persistence (17% versus 13%), but the actor is slightly more topical as measured by mean topic persistence.

This amalgamated clause type is quite similar to VU passive clauses in directive discourse, in that both actor and undergoer have low topicality and it is often used when both actor and undergoer are new referents. It does not match any of Givón's functional voice categories. A comparison of Tables 73 and 74 shows that most of the figures for the two amalgamated clause types are quite similar. I conclude that the position of the subject in syntactically passive clauses in directive discourse is not related to topicality

patterns. Why the topicality patterns of passive clauses differ significantly between narrative and directive discourse is a question which needs further research.

Qal Passive, Pu‘al and Hoph‘al Passive Clauses

Another approach to trying to discern how syntactically passive clauses function in Hebrew is to differentiate between the verbal stem formations (*binyanim*). According to Stuart Creason, *niph‘al* should not be considered as passive. He characterizes its meaning as follows: “The Niphal refers to an event or the state resulting from an event....[T]he Niphal presents this situation with respect to only a single participant and without regard for any other participant which may be involved in this situation” (1995:367). In contrast to this he claims that the “Qal Passive, the Pual, and the Hophal are all passive stems” (1995:289). If we accept this analysis, it would be better to examine the topicality patterns of the *qal* passive, *pu‘al*, and *hoph‘al* separately from the *niph‘al*. The question is whether those stem formations which are claimed to be syntactically passive show greater similarity to passive functional voice than the *niph‘al* clauses, the passive status of which is more doubtful. That is, do the non-*niph‘al* passive clauses show higher topicality of the undergoer, so that the undergoer is much more topical than the actor, as one would expect in a functional passive voice?

Since *qal* passive, *pu‘al* and *hoph‘al* occur relatively infrequently, there is insufficient data in my corpus to investigate them separately in terms of the various clause types defined in this study. As an initial supplementary investigation, therefore, Table 75 shows the topicality patterns of all twenty-one *qal* passive, *pu‘al* and *hoph‘al* clauses in the directive discourse corpus regardless of clause type. Table 76 shows the topicality patterns of all ninety *niph‘al* clauses in the directive discourse corpus regardless of clause type.

TABLE 75

**TOPICALITY MEASURES FOR *QAL* PASSIVE, *PU'AL*
AND *HOPH'AL* PASSIVE CLAUSES IN DIRECTIVE
DISCOURSE**

n=21

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	10%	38%	High: 3-10	5%	14%
2-3	Med.: 9-9.5	19%	24%			
4-19	Low: 1-8	0%	5%	Low: 0-2	95%	86%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	71 %	33%			
Standard Deviation		4.40*	4.65	Standard Dev.	0.86	1.34
Mean Anaphoric Continuity		2.71	6.33	Mean Topic Pers.	0.33	1.00
Mean Anaphoric Continuity Difference		-3.62		Mean Topic Persistence Dif.	-0.67	

TABLE 76

**TOPICALITY MEASURES FOR *NIPH'AL* PASSIVE
CLAUSES IN DIRECTIVE DISCOURSE**

n=90

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	19%	54%	High: 3-10	20%	29%
2-3	Med.: 9-9.5	6%	9%			
4-19	Low: 1-8	6%	7%	Low: 0-2	80%	71%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	70 %	30%			
Standard Deviation		4.38*	4.52	Standard Dev.	2.52	2.24
Mean Anaphoric Continuity		2.83	6.72	Mean Topic Pers.	1.37	1.86
Mean Anaphoric Continuity Difference		-3.89		Mean Topic Persistence Dif.	-0.49	

A comparison of the figures in Tables 75 and 76 show little significant difference.

The figures which perhaps best sum up the overall topicality patterns are the mean anaphoric continuity difference and the mean topic persistence difference. These are very similar for *niph'al* clauses and other passive clauses (-3.89 versus -3.62 and -0.49

versus -0.67 respectively). Comparison of other parts of the tables also shows more similarities than differences. One slight difference with regard to cataphoric importance is that the *niph'āl* clauses have slightly more actors and undergoers with high topic persistence than the other passive clauses (for actors 20% versus 5%; for undergoers 29% versus 14%).

It is not the case that the undergoers in non-*niph'āl* passive clauses have higher topicality than in *niph'āl* clauses. In fact the opposite is the case. One indicator is that the mean anaphoric continuity and mean topic persistence of undergoers in *niph'āl* clauses is marginally higher than for the other passive clauses (6.72 versus 6.33 and 1.86 versus 1.00 respectively).

I conclude that there is little evidence of a significant difference between the passive stem formations with regard to topicality patterns.

Functions of Fronted Constituents

One issue that arises with respect to clause types defined according to constituent order is the function of fronted constituents in Biblical Hebrew. A number of different approaches can be found in the literature which attempt to identify the meanings or functions of fronting.

One approach is to suggest just one meaning for constituent fronting. This is what is done by Longacre with regard to the Noun + perfect construction in narrative, which he labels as "Backgrounded Actions" (1989:81).

A second approach posits multiple functions for fronting. An example of this is the approach of Francis Andersen (1974) He classifies clause types with fronted constituents into various sentence types, each of which has its own function:

- Circumstantial: “interrupts the sequence of events, and generally reports an event contemporaneous, concomitant, or ‘circumstantial’ to the main stream” (1974:77).
- Chiastic: “combines with the lead clause to give a single picture of two simultaneously occurring aspects of the same situation or event” (1974:121).
- Contrastive: “The participants in two parallel but in some ways different activities are brought into prominence by realizing them as grammatically similar items in preverbal positions” (1974:150).
- Antithetical: “involves a RELATIONSHIP between two clauses in antithesis...Antithesis involves not just contrast...but contradiction or opposition” (1974:179).

Another approach is to suggest that fronting has two major functions, which can be further subdivided. A number of scholars have suggested that fronting in Biblical Hebrew has two functions in relation to information structure. In the words of Bailey and Levinsohn, “Preverbal elements may be topicalized or focused” (1992:188). Van der Merwe, Naudé, and Kroeze state, “In BH *fronting* is one of the constructions used to signal that an entity or an attribute of an entity is the focus of an utterance.” They define the focus of an utterance as “that section of an utterance that carries the most salient information in that utterance” (1999:345). A second function of fronting they mention is to signal “that an entity is *introduced, activated or reactivated* to function as the topic of an utterance” (1999:347).⁹

Floor breaks down these two pragmatic functions of fronting as follows:

- A. Fronting of topic
 - Topic promotion
 - Topic shifting
 - Topic frame-setting

⁹ Van der Merwe lists one subcategory of topic as “Introducing a *new character* to be the topic of an utterance at the beginning of a new episode” (1999a:347). This understanding of topic is somewhat different from that of Lambrecht. In Lambrecht’s approach, such a sentence would be classified as “event-reporting,” for which “the focus covers the entire proposition, hence... the subject is not a topic” (1994:137).

B. Fronting for focus

- Marked word-order Sentence focus
- Marked word-order Argument focus
- Marked word-order Predicate focus in case of verbless clauses with fronting (2004:187).

A further refinement can be achieved by distinguishing between fronting of subjects, fronting of objects, and fronting of other constituents. It is very likely that the function of fronting will vary according to the type of constituent fronted. Only when the characteristics of each type have been clarified will one be able to make valid generalizations. Van der Merwe remarks,

most cases where a non-subject constituent, e.g. object, local adjunct etc., is fronted, that constituent is the focus of the utterance. Temporal constituents and subjects, however, are often fronted without being the focus of the utterance (1999b:176).

Even with regard to fronting of subjects, it may be advisable to distinguish between intransitive verbs and transitive verbs. With the former, the only nuclear constituent that can be fronted is the subject. With the latter, there is a choice between fronting the subject or the object, or even both. The greater number of choices is likely to affect the discourse pragmatic functions which are signaled by the fronting.

One problem with this type of analysis relates to the opposition between topic and focus. With regard to information structure, there are only two possible statuses of a clause constituent. Either it is the clause topic, or else it is part of the focus. Hence every fronted constituent necessarily must be either a topic or else part of the focus. For this reason it is problematical to state that such fronting can signal both topic status and focal status. Especially if this is interpreted to mean that the fronting alone is sufficient to signal such status, without any other clause features being involved. It would be similar to saying that the use of *weqatal* can signal either foreground status or background status. If there are only two possible categories to be signaled, and the same signal can mean both, it suggests that the signal is not communicating anything.

In order to claim that a certain syntactic feature, by itself, signals a particular discourse or information structure status, it is not enough to show that the feature in question often occurs in clauses having that status. One must show that there is a significant correlation between the feature and the status. It must be shown to occur in clauses with the status in question at a significantly higher frequency than in clauses without the status.

On the other hand, it may be that various discourse or information structure statuses are signaled by combinations of features. When a particular syntactic feature is combined with one set of accompanying features, it signals one status, but when combined with another set of features, it signals another status.

With regard to topic or focal status of fronted constituents, there are several possibilities. It might be that the fronted position, by itself, signals topic status. Or it might be that the fronted position, by itself, signals focal status. Or it may be that, by itself, it does not give a clear signal, but it needs to be combined with other features before the meaning of the fronting can be interpreted. With regard to subjects, one can use the following procedure to discover how fronted subjects correlate with topic or focal status:

1. Identify all clauses in the sample which have nominal subjects (including free pronouns).
2. Calculate the percentage of such clauses for which the subject is topic, and for which the subject is focal.
3. Calculate the same percentages for the subset of clauses with fronted nominal subjects.
4. If the percentage of clauses with fronted subjects which are topic is significantly higher than the percentage of the full set of clauses, then subject fronting correlates with topic status.

5. If the percentage of clauses with fronted subjects which are topic is significantly lower than the percentage of the full set of clauses (the focal percentage being higher), then subject fronting correlates with focal status.

6. If the percentages for the fronted subject subset are not significantly different from the percentages of the full set, then fronted position, by itself, is not giving a clear signal with regard to information structure status. Further investigation is needed to determine what other features may be combining with fronting to give signals regarding information structure status.

Fronted Subjects of Semantically Transitive Clauses

In order to carry out the above procedure as a supplemental investigation in relation to fronted subjects of semantically transitive clauses, I need to reinterpret the measures of referential distance in terms of topic or focal status. According to Lambrecht, “it is necessary for a referent to have a degree of accessibility in order to be interpretable as a topic” (1994:164). The most acceptable referents to function as topics are those which are discourse active. In addition, “still acceptable and indeed frequently occurring topic expressions are those with ACCESSIBLE referents” (1994:166), which includes semi-active referents mentioned somewhat earlier in the discourse. On the other hand, “Clearly unacceptable as topics are BRAND-NEW referents” (1994:166).

These concepts can be applied to our data as follows: Actors in syntactically active clauses with high anaphoric continuity are discourse active, and hence would be the primary topic of the clause. Actors with low or medium anaphoric continuity (mentioned within the last nineteen clauses) are accessible referents, and would also normally be the primary topic of the clause. The same applies to the undergoer subject of syntactically passive clauses. If an active clause has a primary topic, and the undergoer object has high or medium anaphoric continuity, that indicates that it is discourse active, and hence would be the secondary topic of that clause. If it has low (but not very low) anaphoric continuity, it is an accessible referent, and can still function as a secondary topic.

In contrast to this, if the actor subject of an active clause or undergoer subject of a passive clause has very low anaphoric continuity, being a new referent, that means it is not the primary topic of the clause, but rather is part of the focus. If the undergoer object of an active clause has very low anaphoric continuity, it is not a secondary topic of the clause, but is part of the focus. If both actor and undergoer of a clause have very low anaphoric continuity, it is likely the clause has no topic, but rather belongs to the category sentence focus, defined as an “event-reporting or presentational sentence type, in which the focus extends over both the subject and the predicate (minus any topical non-subject elements)” (Lambrecht 1994:222; see also Floor 2004:117).

Based on these considerations, I will assume that subjects with high, medium, or low anaphoric continuity (referential distance between one and nineteen) are discourse active or accessible and hence function as primary topic of their clause. Conversely, subjects with very low anaphoric continuity (referential distance of twenty) will be regarded as not accessible, and can be assumed to be part of the focus.

There are 417 semantically transitive clauses with nominal subjects in the narrative corpus (including passive clauses). This includes those where the subject is a free pronoun, but excludes those where the subject is a verbal affix. Of these, 87 clauses have fronted subjects. These consist of the constituent orders: SV and SVO. There are 330 clauses with postverbal subjects, consisting of the following constituent orders: VS, VSO, VOS, OVS.

In the directive discourse corpus, there are 230 semantically transitive clauses with nominal subjects, including passive clauses and those where the subject is a free pronoun. Of these, 97 clauses have fronted subjects. These consist of the following constituent orders: SV, SVO, SOV. There are 133 clauses with postverbal subjects, consisting of the following constituent orders: VS, VSO, VOS, OVS.

The percentages of high, medium, low versus very low anaphoric continuity for the different sets of clauses in narrative and directive discourse are shown in Tables 77 and 78.

TABLE 77
ANAPHORIC CONTINUITY OF NOMINAL SUBJECTS IN NARRATIVE

	n=417	n=87	n=330
Subject anaphoric continuity	All nominal subjects	Preverbal subjects	Postverbal subjects
High/medium/low	312=74.8%	54=62.1%	258=78.2%
Very low	105=25.2%	33=37.9%	72=21.8%

TABLE 78
ANAPHORIC CONTINUITY OF NOMINAL SUBJECTS IN DIRECTIVE DISCOURSE

	n=230	n=97	n=133
Subject anaphoric continuity	All nominal subjects	Preverbal subjects	Postverbal subjects
High/medium/low	126=54.8%	54=55.7%	72=54.1%
Very low	104=45.2%	43=44.3%	61=45.9%

In terms of Floor's classification system, when the subject is topic it would tend to fall into the category of topic shift (for discourse-active referents). When the subject is a focal element it would fall into the category of marked-word order sentence focus (when all the constituents in the sentence are new information). Floor defines: "Marked word-order sentence focus is where presentational or event-reporting sentences have a

marked word-order, which in this case means that it has a constituent or constituents that are fronted before the verb" (2004:161).

The above percentages represent a close approximation to the numbers of subjects which have topic or focal status. For a more accurate evaluation, each clause would need to be examined to verify whether the subject is topic or focal.

The figures in Table 77 indicate that preverbal subjects have a relatively greater proportion of subjects which are part of the focus, indicated by very low anaphoric continuity. As compared to the overall proportion of 25.2% of nominal subjects having focal status, the proportion of preverbal subjects having focal status is 37.9%, whereas the proportion of postverbal subjects is lower at 21.8%. This difference is statistically significant as measured by the chi-squared test.¹⁰ Hence for narrative clauses, the fronted position of the subject is associated with focal status. But the signal given is a relatively weak signal; a majority of fronted subjects have topic status, as do a majority of postverbal subjects.

The figures in Table 78 indicate that nominal subject clauses split fairly evenly, with slightly more in which the subject is primary topic, with high, medium, or low anaphoric continuity, and slightly less in which it is part of the focus, having very low anaphoric continuity. The figures for preverbal subjects and postverbal subjects are virtually the same, differing only by one percentage point. Hence I conclude that for semantically transitive clauses in directive discourse, the fronted position of subjects does not give any signal as to whether the subject is topic or focal.

These differing results suggest that the dynamics of constituent order are somewhat different in narrative as compared to directive discourse. One may also note

¹⁰ Using the Pearson's Chi-squared test with Yates' continuity correction the results were: $\chi^2 = 8.6519$, $df = 1$, $p\text{-value} = 0.003267$.

that a higher proportion of nominal subjects in narrative have topic status compared to subjects in directive discourse (74.8% versus 54.8%).

The same procedure could be applied to intransitive clauses, to see whether a similar pattern holds. Another approach would be to restrict the comparison to *qatal* and *yiqtol* clauses, on the grounds that fronting of subjects is excluded for syntactic reasons with *wayyiqtol* and *weqatal* clauses. These supplementary investigations are beyond the scope of this dissertation.

Fronted Objects

The same procedure can be used with fronted objects. In the narrative corpus, there are 583 clauses with nominal objects, excluding the one OVO clause which has both a preverbal and postverbal object. These do not include clauses with pronominal objects, since these are rarely fronted.¹¹ Of these, 51 clauses have fronted nominal objects, consisting of the constituent orders OV, and OVS. There are 532 clauses with postverbal nominal objects, consisting of the following constituent orders: VO, VSO, VOS, SVO.

In the directive discourse corpus, there are 553 clauses with nominal objects, excluding six OVO clauses. Of these, 141 clauses have fronted nominal objects, consisting of the following constituent orders: OV, OVS, SOV. There are 412 clauses with postverbal nominal objects, consisting of the following constituent orders: VO, VSO, VOS, SVO.

The percentages of high, medium, low versus very low anaphoric continuity for the different sets of clauses are shown in Tables 79 and 80.

¹¹ Only four clauses in the directive discourse corpus have fronted pronominal objects. There are no such clauses in the narrative corpus. In an earlier study (Andersen 2005:111-114), I included pronominal objects in the calculation, but this skewed the result. The large number of clauses with VO order and pronominal objects all tended to have high anaphoric continuity, and this made the mean anaphoric continuity of VO order higher than it would have been if only nominal objects were compared.

TABLE 79
**ANAPHORIC CONTINUITY OF NOMINAL OBJECTS IN
NARRATIVE**

	n=583	n=51	n=532
Object anaphoric continuity	All explicit objects	Preverbal objects	Postverbal objects
High/medium/low	250 = 42.9%	20 = 39.2%	230 = 43.2%
Very low	333 = 57.1%	31 = 60.8%	302 = 56.8%

TABLE 80
**ANAPHORIC CONTINUITY OF NOMINAL OBJECTS IN
DIRECTIVE DISCOURSE**

	n=553	n=141	n=412
Object anaphoric continuity	All explicit objects	Preverbal objects	Postverbal objects
High/medium/low	166=29.3%	30=18.4%	136=33.0%
Very low	391=70.7%	115=81.6%	276=67.0%

As was found with subjects in narrative, Table 80 shows a clear difference between fronted objects and postverbal objects in directive discourse. Among the total population of directive discourse clauses with nominal objects, 70.7% have very low anaphoric continuity, indicating focal status. With preverbal objects, a significantly higher percentage have very low anaphoric continuity, with 81.6% having focal status, and only 18.4% having topic status. With postverbal objects, the percentages are not much different from that of the total population, with 67% having focal status and 33% having topic status.

In narrative, however, the difference is slight, as shown in Table 79. As with directive discourse, preverbal objects have a higher percentage of very low anaphoric

continuity than postverbal objects (60.8% versus 56.8%). But this is a difference of only a few percentage points, and it is not significant when measured by the chi-squared test. The differences between preverbal and postverbal objects in directive discourse are statistically significant, however.¹² I conclude that in directive discourse, the fronted position of the object helps signal that the object is part of the focus. But in narrative, the position of the object does not give a clear signal regarding topic or focal status.

This finding can be related to the classification of object-fronted clauses as antipassive functional voice. This means that the object undergoer has demoted topicality, which is appropriate for its status as a focal element, not topic. In terms of Floor's classification system, one might think it would fall in the category of marked word-order argument focus, which he defines as "cases where the argument that is in focus is fronted before the verb" (2004:168). In fact, however, most of these clauses should be classified as marked word-order predicate focus, because both the fronted object and the verbal predicate are part of the focus, with the subject being primary topic.¹³

This finding can be related to the conflicting views of Fox (1983) and Sun and Givón (1985) versus Myhill and Xing (1993) on the function of object fronting in Hebrew. Fox found a mean referential distance of 2.50 for objects in OV constructions. In relation to this Myhill and Xing made a number of claims, which were cited in Chapter 1, and repeated here:

It is also not the case that Patient verb constructions...can generally be characterized as "a mere localized topic-switching device, commonly bringing back into the register a topic that was mentioned only

¹² Using the Pearson's Chi-squared test with Yates' continuity correction, the results for narrative were: $X^2 = 0.1646$, $df = 1$, $p\text{-value} = 0.685$. The results for directive discourse were: $X^2 = 7.2037$, $df = 1$, $p\text{-value} = 0.007275$. In order to be statistically significant, the $p\text{-value}$ must be less than 0.05.

¹³ Floor (2004) seems to overlook this type of predicate focus clause, since he only mentions marked word-order predicate focus in relation to verbless clauses.

2-3 clauses before," as Fox claims. Our own count of all 116 OV constructions in Genesis show that the objects have an average RD of 12.45; Sun and Givón's RD figure of 2.50...is based on only six tokens (1993:32).

[T]opicality, as measured by RD, is not relevant to the position of the object in Hebrew. A text count of the entire book of Genesis found that preverbal objects have an average RD of 12.45 (N=116), while postverbal objects have an average RD of 12.46 (N=1094) (1993:44).

These results can be compared with the results of the present study in relation to narrative and directive discourse.¹⁴ These are shown in Table 81.

TABLE 81

MEAN REFERENTIAL DISTANCE OF NOMINAL OBJECTS

	n=1210	n=583	n=553
	Genesis, Myhill & Xing 1993	Narrative	Directive discourse
Preverbal objects	12.45	13.76	17.22
Postverbal objects	12.46	13.23	13.67

Since a majority of Genesis is narrative, the results for narrative are the ones most appropriate to compare with Myhill and Xing's results. The figure of 13.76 as the mean referential distance of preverbal objects is much closer to Myhill and Xing's figure than it is to Fox's figure of 2.50. This confirms Myhill and Xing's doubts about the validity of Fox's measurement, and the conclusions drawn from it. The high figures for mean referential distance found by Myhill and Xing as well as by the present research are

¹⁴ The mean referential distance of preverbal objects is calculated from the mean referential distance of undergoer in OV, OVS and OVSpro amalgamated clause types. The mean referential distance of postverbal objects is calculated from the mean referential distance of undergoer in VO, VSproO, VSO, VOS, SVO, and SproVO amalgamated clause types.

because the object fronting constructions are commonly used with new referents, which have a referential distance of twenty.

At the same time, the results of the present research leads to a slightly different conclusion than that of Myhill and Xing, who claim that “topicality, as measured by RD, is not relevant to the position of the object in Hebrew” (1993:44). Rather, the figures given in Table 81 lead to the conclusion that topicality, as measured by referential distance, is significantly related to the position of the object in Hebrew directive discourse, but not in narrative. Object fronting is associated with lower topicality in directive discourse.

CHAPTER 6

TOPICALITY PATTERNS OF VERB CONJUGATIONS

In this chapter I will present the topicality measures for amalgamated clause types based on verb conjugations and syntactic voice. I will discuss the results in terms of the relative topicality of the various verb conjugations.

Topicality Patterns of Different Verb Conjugations

In the following subsections, I give the topicality patterns for clauses grouped according to the frequently occurring verb conjugations, subdivided according to syntactic voice: *yiqtol*, *qatal*, *wayyiqtol*, *weqatal*, imperative, passive *yiqtol*, passive *qatal*, passive *wayyiqtol*, and passive *weqatal*. I present topicality patterns for both narrative and directive discourse for those verb conjugations which occur at least ten times in each discourse genre. Many verb conjugations are presented for only one genre, since they occur less than ten times in the other genre.

Since these amalgamated clause types gather together many diverse clause types, which in preceding chapters have already been shown to represent various types of functional voice, it is not my intention to try to identify certain conjugations with certain functional voices. In many cases the diversity of the topicality patterns is indicated by high standard deviations. The topicality patterns of each verb conjugation are largely determined by the topicality patterns of the most frequent clause types.

Clauses with *yiqtol*

Clauses with *yiqtol* represent 11% of the clauses in the narrative corpus. They occur with greater frequency in narrative poetry than in prose. They represent 44% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the 110 *yiqtol* clauses in the narrative corpus are found in Table 82. This amalgamated clause type consists of the following clause types:

yiqtol-Opro (33); **yiqtol,O** (32); **O,yiqtol** (12); **S,yiqtol-Opro** (6);
yiqtol (6); **S,yiqtol,O** (4); **O,yiqtol,S** (2); **S,yiqtol** (2); **yiqtol-Opro,S** (2);
yiqtol,S,etO (2); **etO,yiqtol** (1); **prepO,yiqtol** (1); **O,yiqtol,Spro** (1);
O,yiqtol-Opro,S (1); **Spro,yiqtol,O** (1); **yiqtol,etOpro** (1);
yiqtol,prepOpro (1); **yiqtol,S** (1); **yiqtol,S,O** (1)

TABLE 82

TOPICALITY MEASURES FOR YIQTOL CLAUSES IN NARRATIVE

n=110

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	79%	39%	High: 3-10	73%	37%
2-3	Med.: 9-9.5	8%	10%			
4-19	Low: 1-8	6%	12%	Low: 0-2	27%	63%
>19 Reactiv.	V. Low: 0.5	0%	4%			
20 New	V. Low: 0	6%	35%			
Standard Deviation		2.47	4.67*	Standard Dev.	3.04*	3.25*
Mean Anaphoric Continuity		9.18	5.54	Mean Topic Pers.	4.70	2.67
Mean Anaphoric Continuity Difference		3.64		Mean Topic Persistence Dif.	2.03	
Mean Referential Distance		2.58	9.56			

Examples of the more common clause types can be found earlier in this dissertation. The following are some examples of less common clause types:

‘He sent from above,’ yiqtol (2 Sa. 22:17a, KJV) RRD Actor: 1 Und.: New TP Actor: 8 Und.: 0	ישַׁלֵּח מִמְּרוֹם
‘And David saved neither man nor woman alive,’ O,yiqtol,S (1 Sa. 27:11a, KJV) RRD Actor: 2 Und.: 8 TP Actor: 8 Und.: 1	וְאֵישׁ וְאֲשֶׁר לֹא יָחַי הָיוּ

The high standard deviations for three of the four measures indicate the diversity of the topicality patterns of these clause types. By both topicality measures, the actor is more topical than the undergoer. The most frequent clause types include **yiqtol-Opro**, which is a member of the semi-active functional voice cluster (see Tables 17 and 18), as well as **yiqtol,O** and **O,yiqtol**, which are members of the antipassive functional voice cluster (see Tables 13 and 14). In all of these, the actor has relatively high topicality, whereas the undergoer has low topicality in the antipassive functional voice clauses. This underlies the relatively high topicality of the actor compared to the undergoer in the topicality patterns shown in Table 82.

In Directive Discourse

The topicality measures for the 408 *yiqtol* clauses in the directive discourse corpus are found in Table 83. Examples of some of these clause types can be found in previous chapters. This amalgamated clause type consists of the following clause types:

O,yiqtol (82); yiqtol,O (69); yiqtol-Opro (41); yiqtol,etO (31); etO,yiqtol (29); yiqtol (27); yiqtol,S,etO (15); yiqtol,etOpro (14); yiqtol,S,O (11); S,yiqtol,O (10); prepO,yiqtol (8); Spro,yiqtol (5); yiqtol-Opro,S (5); yiqtol,prepO (5); yiqtol,prepOpro (4); yiqtol,S (4); S,yiqtol,etO (4); S,yiqtol (3); S,yiqtol,etOpro (3); S,yiqtol-Opro (3); S,yiqtol,prepOpro (3); O,yiqtol,S (3); etOpro,yiqtol (2); O,etOpro,yiqtol (2); O,yiqtol,O (2); S,O,yiqtol (2); Spro,yiqtol,etO (2); Spro,yiqtol,O (2); yiqtol,prepOpro,S (2); etO,yiqtol-Opro (1); O,yiqtol,Spro (1); O,yiqtol,etO (1); O,yiqtol-Opro (1); S,yiqtol,prepO (1); Spro,yiqtol-Opro (1); Spro,etO,yiqtol (1); Spro,yiqtol,prepO (1); Spro,yiqtol,etO,etO2 (1); yiqtol-Opro,etO2 (1); yiqtol-Opro,O2 (1); yiqtol,etOpro,S (1); yiqtol,S,prepOpro (1); yiqtol,Spro (1); yiqtol,Spro,O (1)

The following are examples of less common clause types:

‘for he will not pardon your transgressions’	כִּי לֹא יְשַׁאֲלֶפְעָלֶם
yiqtol,prepO (Ex. 23:21d, KJV)	וְקִרְבֵּנְשָׁאֵל אִישׁ מֵעַם רַעַתָּה
RRD Actor: 1	Und.: New
	TP Actor: 4
	Und.: 0
‘And if a man borrow [ought] of his neighbour,’	וְקִרְבֵּנְשָׁאֵל אִישׁ מֵעַם רַעַתָּה
yiqtol,S (Ex. 22:14a, KJV) ¹	Und.: New
RRD Actor: New	Und.: New
	TP Actor: 2
	Und.: 8

TABLE 83

TOPICALITY MEASURES FOR YIQTOL CLAUSES IN
DIRECTIVE DISCOURSE

n=408

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	70%	28%	High: 3-10	69%	19%
2-3	Med.: 9-9.5	16%	7%			
4-19	Low: 1-8	3%	5%	Low: 0-2	31%	81%
>19 Reactiv.	V. Low: 0.5	0.2%	1%			
20 New	V. Low: 0	10%	59%			
Standard Deviation	3.08	4.72	Standard Dev.	3.28*	2.25	
Mean Anaphoric Continuity	8.74	3.81	Mean Topic Pers.	4.83	1.40	
Mean Anaphoric Continuity Difference	4.93		Mean Topic Persistence Dif.		3.43	
Mean Referential Distance	3.42	12.80				

¹ In the Hebrew versification, this is Ex. 22:13a.

By both topicality measures, actors are significantly more topical than undergoers. The most frequent clause types include **O,yiqtol**, **yiqtol,O** and **etO,yiqtol**, which are members of the antipassive functional voice cluster (see Tables 24 and 25). This cluster has the strongest impact on the topicality patterns shown in Table 83, resulting in high actor topicality and low undergoer topicality. Their greater frequency outweighs the impact of **yiqtol-Opro** and **yiqtol,etOpro** clause types, which belong to the semi-active functional voice cluster, characterized by relatively high undergoer topicality (see Tables 28 and 29). Other frequent clause types include **yiqtol,etO** and **yiqtol**, members of the active functional voice cluster (see Tables 26 and 27). They have a pattern of actor topicality somewhat higher than undergoer topicality. The topicality patterns shown in Table 83 are mainly the result of the combination of influences of these three clusters.

Clauses with *qatal*

Clauses with *qatal* represent 18% of the clauses in the narrative corpus. They represent 9% of the clauses in the directive discourse corpus.

In Narrative

The topicality measures for the 180 clauses in the narrative corpus with *qatal* are found in Table 84. This amalgamated clause type consists of the following clause types:

qatal,O (41); **O,qatal** (17); **S,qatal,etO** (17); **qatal,etO** (15);
S,qatal,O (11); **qatal-Opro** (10); **qatal,S,etO** (9); **qatal-Opro,S** (8);
etO,qatal (7); **qatal,prepO** (5); **qatal,prepOpro** (5); **qatal,S** (5);
etO,qatal,S (4); **O,qatal,S** (4); **S,qatal-Opro** (4); **qatal,S,O** (3); **qatal** (3);
S,qatal (3); **Spro,qatal,O** (2); **O,qatal,O2** (1); **prepO,qatal** (1);
qatal,O,S (1); **qatal,S,etOpro** (1); **qatal,S,prepO** (1); **S,qatal,prepO** (1);
S,qatal,prepOpro (1)

The following are examples of less common clause types:

‘as the LORD commanded’		כַּאֲשֶׁר־וְצִוָּה יְהֹוָה	
qatal,S (Ex. 7:20b, KJV)			
RRD Actor: 7	Und.: 1	TP Actor: 0	Und.: 3
‘His glory covered the heavens’		כִּסְףָּה שְׁמִים הָרוֹדָה	
qatal,O,S (Hab. 3:3c, NIV)			
RRD Actor: New	Und.: New	TP Actor: 1	Und.: 0

TABLE 84

**TOPICALITY MEASURES FOR *QATAL* CLAUSES IN
NARRATIVE**

n=180

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	59%	29%	High: 3-10	56%	26%
2-3	Med.: 9-9.5	14%	6%			
4-19	Low: 1-8	13%	14%	Low: 0-2	44%	74%
>19 Reactiv.	V. Low: 0.5	3%	7%			
20 New	V. Low: 0	11%	44%			
Standard Deviation	3.46*	4.60*	Standard Dev.	3.04*	2.68	
Mean Anaphoric Continuity	8.09	4.41	Mean Topic Pers.	3.64	1.89	
Mean Anaphoric Continuity Difference	3.68		Mean Topic Persistence Dif.		1.75	
Mean Referential Distance	4.72	11.74				

The high standard deviations for three of the four measures indicate the diversity of the topicality patterns of these clause types. They do not represent a unified group. The most frequent clause types represented include **qatal,O**, **O,qatal**, and **qatal,etO**, from the antipassive functional voice cluster (see Tables 13 and 14). These clause types are characterized by high actor topicality and low undergoer topicality. Two other frequent clause types are **S,qatal,etO** and **S,qatal,O**, which comprise the low topicality active functional voice cluster (see Tables 22 and 23). They are characterized by somewhat low actor topicality and very low undergoer topicality. The influence of this

cluster somewhat reduces the overall actor topicality. There are also a variety of less frequent clause types with pronominal objects, including **qatal-Opro**, a member of the semi-active functional voice cluster (see Tables 17 and 18), as well as **qatal-Opro,S**, **qatal,prepOpro**, **S,qatal-Opro**, **qatal,S,etOpro**, and **S,qatal,prepOpro**. One probable effect of these clause types on the topicality patterns in Table 84 is to increase the topicality of the undergoer somewhat.

In Directive Discourse

The topicality measures for the eighty-four clauses in the directive discourse corpus with *qatal* are found in Table 85. This amalgamated clause type consists of the following clause types:

qatal,etO (15); **Spro,qatal,etO** (12); **qatal-Opro** (10); **qatal,S,etO** (7);
qatal,O (5); **O,qatal** (5); **etO,qatal** (4); **qatal** (4); **qatal,etOpro** (4);
qatal-Opro,S (3); **S,qatal-Opro** (3); **Spro,qatal-Opro** (2);
O,qatal-Opro (2); **qatal,prepO** (2); **qatal,S,etOpro** (1); **S,qatal,etO** (1);
S,qatal,O (1); **S,qatal** (1); **S,qatal,prepOpro** (1); **etO,qatal,S** (1)

The following are examples of less common clause types:

וְאֵינוֹ נָתַתִּיו לְכֶם עַל-הַמִּזְבֵּחַ לְכַפֵּר עַל-נְפָשָׁתֵיכֶם
‘and I have given it to you on the altar to make atonement for your souls’

Spro,qatal-Opro (Lev. 17:11b, NASB)

RRD Actor: 2 Und.: 1 TP Actor: 2 Und.: 6

כֹּל-מָקוֹם אֲשֶׁר תַּעֲשֶׂה כְּפָר-רוֹלְכֶם בּוֹ לְכֶם נָתַתִּי
‘I will give you every place where you set your foot,’

O,qatal-Opro (Jos. 1:3a, NIV)

RRD Actor: 1 Und.: New TP Actor: 7 Und.: 0

TABLE 85
**TOPICALITY MEASURES FOR *QATAL* CLAUSES IN
DIRECTIVE DISCOURSE**

n=84

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	58%	42%	High: 3-10	48%	25%
2-3	Med.: 9-9.5	17%	7%			
4-19	Low: 1-8	12%	12%	Low: 0-2	52%	75%
>19 Reactiv.	V. Low: 0.5	0%	1%			
20 New	V. Low: 0	12%	38%			
Standard Deviation	3.33	4.74		Standard Dev.	2.68	2.12
Mean Anaphoric Continuity	8.30	5.61		Mean Topic Pers.	3.12	1.62
Mean Anaphoric Continuity Difference	2.69			Mean Topic Persistence Dif.	1.50	
Mean Referential Distance	4.29	9.40				

By both topicality measures, actors are somewhat more topical than undergoers.

The most frequent clause type represented is **qatal,etO**, from the active functional voice cluster (see Tables 26 and 27). This is characterized by actor topicality somewhat more than undergoer topicality. Another frequent clause type is **Spro,qatal,etO** from the antipassive functional voice cluster (see Tables 24 and 25). This clause type is characterized by high actor topicality and low undergoer topicality. Another frequent clause type is **qatal-Opro**, a member of the semi-active functional voice cluster (see Tables 28 and 29). A probable effect of this clause type, and other less frequent clause types with pronominal objects, on the topicality patterns in Table 85 is to increase the topicality of the undergoer somewhat, which is especially evident in the measure of undergoer anaphoric continuity.

Clauses with *wayyiqtol*

The topicality measures for the 564 *wayyiqtol* clauses in the narrative corpus with are found in Table 86. This represents 57% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

wayyiqtol,S,etO (114); **wayyiqtol,O** (113); **wayyiqtol,etO** (74);
wayyiqtol-Opro (70); **wayyiqtol** (38); **wayyiqtol,S,O** (30);
wayyiqtol,prepO (22); **wayyiqtol,S** (22); **wayyiqtol,S,prepO** (22);
wayyiqtol,etOpro (14); **wayyiqtol-Opro,S** (13);
wayyiqtol,prepOpro (9); **wayyiqtol,prepOpro,S** (5);
wayyiqtol,etOpro,S (4); **wayyiqtol-Opro,O2** (3);
wayyiqtol-Opro,S,O2 (2); **wayyiqtol,S,etOpro** (2);
wayyiqtol,S,prepOpro (2); **O,wayyiqtol-Opro** (1); **S,wayyiqtol,etO** (1);
wayyiqtol,O,S (1); **wayyiqtol-Opro,etO** (1); **wayyiqtol,Spro,O** (1)

The following are examples of less common clause types:

וַיִּקְרָא אֱלֹהִים מִתְּנֻךְ הַפְּנֵי
‘God called to him from within the bush.’

wayyiqtol,prepOpro,S (Ex. 3:4c, NIV)

RRD Actor: 2 Und.: 1 TP Actor: 4 Und.: 7

וַיִּפְשַׁט גַּם־הָוּא בְּגֶדְיוֹ
‘And he stripped off his clothes also,’

wayyiqtol,Spro,O (1 Sa. 19:24a, KJV)

RRD Actor: 1 Und.: New TP Actor: 3 Und.: 0

TABLE 86

TOPICALITY MEASURES FOR WAYYIQTOL CLAUSES IN NARRATIVE

n=564

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	68%	33%	High: 3-10	68%	36%
2-3	Med.: 9-9.5	17%	14%			
4-19	Low: 1-8	11%	14%	Low: 0-2	32%	64%
>19 Reactiv.	V. Low: 0.5	2%	7%			
20 New	V. Low: 0	2%	32%			
Standard Deviation		2.02	4.57	Standard Dev.	2.84	2.99*
Mean Anaphoric Continuity		9.21	5.59	Mean Topic Pers.	4.34	2.55
Mean Anaphoric Continuity Difference		3.62		Mean Topic Persistence Dif.	1.79	
Mean Referential Distance		2.56	9.50			

By both topicality measures, actors are significantly more topical than undergoers, while undergoers retain considerable topicality. This matches the profile of active functional voice. This fact is easily explained on the basis that all seven members of the active functional voice cluster in narrative are *wayyiqtol* clauses (see Tables 15 and 16). Their collective impact outweighs the influence of other frequent clause types. This includes **wayyiqtol,O**, which belongs to the antipassive functional voice cluster, characterized by low undergoer topicality (see Tables 13 and 14), as well as **wayyiqtol-Opro**, **wayyiqtol,etOpro**, and **wayyiqtol-Opro,S**, which belong to the semi-active functional voice cluster, characterized by relatively high undergoer topicality (see Tables 17 and 18). These latter two influences more or less cancel each other out in the topicality patterns shown in Table 86. The wide diversity of undergoer topicality is indicated by the high standard deviation for undergoer topic persistence.

Clauses with *weqatal*

The topicality measures for the 239 clauses in the directive discourse corpus with *weqatal* are found in Table 87. This represents 26% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

weqatal,etO (71); **weqatal,O** (48); **weqatal-Opro** (27);
weqatal,etOpro (24); **weqatal** (17); **weqatal,S,etO** (12);
weqatal,prepO (12); **weqatal,S** (7); **weqatal,prepOpro** (4);
weqatal,S,O (4); **weqatal-Opro,S** (3); **weqatal,etOpro,S** (3);
weqatal,Spro,etO (2); **weqatal,S,prepO** (1); **weqatal,etOpro,etO2** (1);
weqatal,O,etO2 (1); **S,weqatal,O** (1); **S,weqatal,etO** (1)

The following are examples of less common clause types:

‘and put it on the wood.’

ונתני על-העץ

weqatal (1 Kg. 18:23g, NIV)

RRD Actor: 1

Und.: 1

TP Actor: 2

Und.: 0

'Love him as yourself,'
weqatal,prepOpro (Lev. 19:34b, NIV)
 RRD Actor: 1 Und.: 1 TP Actor: 7 Und.: 0
וְאַהֲבָתָ לֹּו כִּמְךָ

TABLE 87

**TOPICALITY MEASURES FOR WEQATAL CLAUSES IN
DIRECTIVE DISCOURSE**

n=239

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	81%	38%	High: 3-10	63%	26%
2-3	Med.: 9-9.5	9%	12%			
4-19	Low: 1-8	4%	8%	Low: 0-2	37%	74%
>19 Reactiv.	V. Low: 0.5	1%	1%			
20 New	V. Low: 0	5%	40%			
Standard Deviation	2.29	4.75	Standard Dev.	2.98	2.47*	
Mean Anaphoric Continuity	9.29	5.54	Mean Topic Pers.	4.08	1.77	
Mean Anaphoric Continuity Difference	3.75		Mean Topic Persistence Dif.		2.31	
Mean Referential Distance	2.36	9.53				

By both topicality measures, actors are more topical than undergoers. The most frequent clause types include **weqatal,etO**, **weqatal**, **weqatal,prepO**, and **weqatal,S,etO**, members of the active functional voice cluster (see Tables 26 and 27). This cluster has the strongest impact on the topicality patterns shown in Table 87, resulting in a pattern of actor topicality somewhat higher than undergoer topicality. Another frequent clause type is **weqatal,O**, member of the antipassive functional voice cluster, characterized by high actor topicality and low undergoer topicality (see Tables 24 and 25). Other frequent clause types are **weqatal-Opro** and **weqatal,etOpro**, which belong to the semi-active functional voice cluster, characterized by relatively high undergoer topicality (see Tables 28 and 29). The topicality patterns shown in Table 87 are mainly the result of the combination of influences of these three clusters.

Clauses with Imperative

The topicality measures for the sixty-seven imperative clauses in the directive discourse corpus are found in Table 88. This represents 7% of the clauses in the corpus.² This amalgamated clause type consists of the following clause types:

Imp,etO (22); **Imp,O** (17); **Imp** (6); **Imp,prepO** (4); **Imp,S,O** (4);
Imp-Opro (2); **O,Imp** (2); **etO,Imp** (2); **Imp,prepOpro** (1);
Imp,O,O2 (1); **Imp,etO,S** (1); **Imp-Opro,Spro** (1); **S,Imp-Opro** (1);
Spro,Imp,prepO (1); **S,Imp,etO** (1); **Spro,Imp,etO** (1)

The following are examples of less common clause types:

'Please forgive your servant's offense,'		וְאַתֶּשֶׁתִּי נָשִׂيءְ הַאֲיָל דָּוד
Imp,prepO (1 Sa. 25:28a, NIV)		
RRD Actor: 1	Und.: New	TP Actor: 10
		Und.: 0
'Incline Your ear, O LORD,'		הַפֵּה יְדֻנָּה אָזְנָךְ
Imp,S,O (2 Kg. 19:16a, NASB)		
RRD Actor: 1	Und.: New	TP Actor: 6
		Und.: 0

TABLE 88

TOPICALITY MEASURES FOR IMPERATIVE CLAUSES IN DIRECTIVE DISCOURSE

n=67

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	67%	19%	High: 3-10	78%	25%
2-3	Med.: 9-9.5	16%	4%			
4-19	Low: 1-8	7%	7%	Low: 0-2	22%	75%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	9%	69%			
Standard Deviation	2.85	4.35	Standard Dev.	2.78	2.45*	
Mean Anaphoric Continuity	8.85	2.84	Mean Topic Pers.	4.88	1.79	
Mean Anaphoric Continuity Difference	6.01		Mean Topic Persistence Dif.	3.09		
Mean Referential Distance	3.21	14.63				

² This relatively low percentage of imperative clauses, as compared to 44% *yiqtol* and 26% *weqatal*, throws doubt on Longacre's (1989:121) analysis of verb rank in hortatory discourse, as cited in Chapter 2, in which he designates imperative as being the mainline of hortatory discourse, with *yiqtol* and *weqatal* being more backgrounded.

By both topicality measures, actors are significantly more topical than undergoers. The most frequent clause types include **Imp,etO** and **Imp,O**, which are members of the active functional voice cluster (see Tables 26 and 27). This cluster ought to have the strongest impact on the topicality patterns shown in Table 88, resulting in actor topicality somewhat higher than undergoer topicality, and the undergoer retaining considerable topicality. But inexplicably, Table 88 shows a pattern more like antipassive functional voice, with actor topicality much higher than undergoer topicality, the undergoer being demoted in topicality. Perhaps many of the less frequent clause types pattern more like antipassive functional voice, and this causes the patterns shown in Table 88. The high standard deviation for undergoer topic persistence indicates that the undergoer varies considerably in topicality.

Clauses with Passive *yiqtol*

The topicality measures for the sixty-seven clauses in the directive discourse corpus with passive *yiqtol* are found in Table 89. This represents 7% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

yiqtol-Pas (23); **U,yiqtol-Pas** (21); **yiqtol-Pas,U** (19);
U,yiqtol-Pas,A (1); **prepA,U,yiqtol-Pas** (1); **yiqtol-Pas,etU** (1);
yiqtol-Pas,prepA (1)

The following are examples of less common clause types:

‘yet this valley will be filled with water,’	וְהַנֶּחֶל הַהָּוֹא יִפְלַא מִים		
U,yiqtol-Pas,A (2 Kg. 3:17d, NIV)			
RRD Actor: 4	Und.: New	TP Actor: 0	Und.: 1
‘and its meat must not be eaten.’	וְלֹא יִאכְלֶל אֲתִכְשְׁרוֹ		
yiqtol-Pas,etU (Ex. 21:28d, NIV)			
RRD Actor: New	Und.: New	TP Actor: 0	Und.: 0

TABLE 89

**TOPICALITY MEASURES FOR PASSIVE *YIQTOL*
CLAUSES IN DIRECTIVE DISCOURSE**

n=67

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	12%	42%	High: 3-10	15%	16%
2-3	Med.: 9-9.5	7%	15%			
4-19	Low: 1-8	6%	5%	Low: 0-2	85%	84%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	75%	36%			
Standard Deviation	4.07*	4.67		Standard Dev.	2.53	1.88
Mean Anaphoric Continuity	2.34	6.07		Mean Topic Pers.	1.12	1.34
Mean Anaphoric Continuity Difference		-3.73		Mean Topic Persistence Dif.		-0.22
Mean Referential Distance	15.58	8.49				

As measured by anaphoric continuity, undergoers are significantly more topical than actors. On the other hand, with respect to cataphoric importance, the topicality of both actors and undergoers is low, and virtually the same. The most frequent clause type is **yiqtol-Pas**, a member of the passive functional voice cluster (see Tables 30 and 31). This cluster has a pattern of undergoer topicality higher than actor topicality, especially as measured by anaphoric continuity. Other frequent clause types are **U,yiqtol-Pas** and **yiqtol-Pas,U**, which belong to the low topicality passive functional voice cluster, characterized by low topicality of both actor and undergoer, with the undergoer somewhat more topical (see Tables 32 and 33). The topicality patterns shown in Table 89 are mainly the result of the combination of influences of these two clusters.

Clauses with Passive *qatal*

The topicality measures for the fifty-eight clauses in the narrative corpus with passive *qatal* are found in Table 90. This represents 6% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

U,qatal-Pas (24); **qatal-Pas,U** (16); **qatal-Pas** (8); **Upro,qatal-Pas** (4);
qatal-Pas,prepA (2); **qatal-Pas,prepApro** (1); **etU,qatal-Pas** (1);
qatal-Pas,prepU (1); **U,qatal-Pas,prepA** (1)

The following are examples of less common clause types:

‘because they had been driven out of Egypt’	כִּי־גָנַשׁ מִמְצָרִים
qatal-Pas (Ex. 12:39d, NIV)	כִּי־גָנַח לְפָנֵי יִשְׂרָאֵל
RRD Actor: 5 Und.: 2	TP Actor: 0 Und.: 6
‘that they had been routed by Israel,’	כִּי־גָנַח לְפָנֵי יִשְׂרָאֵל
qatal-Pas,prepA (2 Sa. 10:15b, NIV)	כִּי־גָנַח לְפָנֵי יִשְׂרָאֵל
RRD Actor: 10 Und.: 5	TP Actor: 1 Und.: 5

TABLE 90

**TOPICALITY MEASURES FOR PASSIVE *QATAL*
CLAUSES IN NARRATIVE**

n=58

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	16%	40%	High: 3-10	21%	28%
2-3	Med.: 9-9.5	10%	12%			
4-19	Low: 1-8	17%	19%	Low: 0-2	79%	72%
>19 Reactiv.	V. Low: 0.5	2%	7%			
20 New	V. Low: 0	55%	22%			
Standard Deviation		4.47*	4.34	Standard Dev.	2.33	2.85
Mean Anaphoric Continuity		3.72	6.44	Mean Topic Pers.	1.38	2.07
Mean Anaphoric Continuity Difference		-2.72		Mean Topic Persistence Dif.		-0.69
Mean Referential Distance		13.00	7.90			

As measured by both topicality measures, undergoers are more topical than actors. The most frequent clause type is **U,qatal-Pas**, an isolate characterized by low topicality of both actor and undergoer, with the actor slightly more topical (see Table 21). Another frequent clause type is **qatal-Pas,U**, which belongs to the passive functional voice cluster, characterized by the undergoer being somewhat more topical than the actor

(see Tables 19 and 20). The fact that topicality patterns shown in Table 90 follow this latter pattern, rather than the anomalous pattern of **U,qatal-Pas**, indicates that the less frequent passive clause types tend to pattern more like **qatal-Pas,U**, with undergoer topicality more than actor topicality.

Clauses with Passive *wayyiqtol*

The topicality measures for the fifty-nine clauses in the narrative corpus with passive *wayyiqtol* are found in Table 91. This represents 6% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

wayyiqtol-Pas,U (34); **wayyiqtol-Pas** (15); **wayyiqtol-Pas,U,prepA** (6);
wayyiqtol-Pas,prepA (2); **wayyiqtol-Pas,etU** (1);
wayyiqtol-Pas,U,etA (1)

TABLE 91

TOPICALITY MEASURES FOR PASSIVE WAYYIQTOL CLAUSES IN NARRATIVE

n=59

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	19%	39%	High: 3-10	19%	39%
2-3	Med.: 9-9.5	10%	17%			
4-19	Low: 1-8	7%	22%	Low: 0-2	81%	61%
>19 Reactiv.	V. Low: 0.5	0%	5%			
20 New	V. Low: 0	64%	17%			
Standard Deviation		4.55*	4.04	Standard Dev.	1.92	2.66
Mean Anaphoric Continuity		3.32	6.86	Mean Topic Pers.	1.03	2.64
Mean Anaphoric Continuity Difference		-3.54		Mean Topic Persistence Dif.	-1.61	
Mean Referential Distance		13.71	7.12			

The following are examples of less common clause types:

‘Judah was routed by Israel,’		וַיִּגְנֹב יְהוּדָה לְפָנֵי יִשְׂרָאֵל
wayyiqtol-Pas,U,prepA (2 Kg. 14:12a, NIV)		

RRD Actor: 3 Und.: 1 TP Actor: 3 Und.: 3

‘and they were brought into subjection under their hand.’		וַיִּכְנְטוּ קָתָת יָדָם
wayyiqtol-Pas,prepA (Ps. 106:42b, KJV)		

RRD Actor: 1 Und.: 1 TP Actor: 0 Und.: 6

As measured by both topicality measures, undergoers are considerably more topical than actors. The most frequent clause types are **wayyiqtol-Pas,U** and **wayyiqtol-Pas**, members of the passive functional voice cluster (see Tables 19 and 20). This cluster has a pattern of undergoer topicality significantly higher than actor topicality, with actor topicality demoted. Since most of the passive *wayyiqtol* clauses belong to that cluster, there is little difference between the topicality patterns shown in Table 91 and those in Table 20.

Clauses with Passive *weqatal*

The topicality measures for the thirty-one clauses in the directive discourse corpus with passive *weqatal* are found in Table 92. This represents 3% of the clauses in the corpus. This amalgamated clause type consists of the following clause types:

weqatal-Pas (15); **weqatal-Pas,U** (12); **U,weqatal-Pas** (2);
weqatal-Pas,prepA (1); **weqatal-Pas,prepApro** (1)

The following are examples of less common clause types:

‘Then you will be remembered by the LORD your God’		ונִזְכָּרְתֶּם לְפָנֵי יְהוָה אֱלֹהֵיכֶם
weqatal-Pas,prepA (Num. 10:9c, NIV)		

RRD Actor: New Und.: 1 TP Actor: 3 Und.: 3

‘or be made unclean by them.’		וְנִטְמַחַת בָּם
weqatal-Pas,prepApro (Lev. 11:43c, NIV)		

RRD Actor: 1 Und.: 1 TP Actor: 2 Und.: 6

TABLE 92
**TOPICALITY MEASURES FOR PASSIVE *WEQATAL*
CLAUSES IN DIRECTIVE DISCOURSE**

n=31

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	29%	71%	High: 3-10	23%	35%
2-3	Med.: 9-9.5	6%	6%			
4-19	Low: 1-8	3%	3%	Low: 0-2	77%	65%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	61%	19%			
Standard Deviation	4.83*	4.01	Standard Dev.	2.19	2.29	
Mean Anaphoric Continuity	3.76	7.89	Mean Topic Pers.	1.42	2.13	
Mean Anaphoric Continuity Difference	-4.13		Mean Topic Persistence Dif.	-0.71		
Mean Referential Distance	12.87	5.03				

By both topicality measures, undergoers are more topical than actors. The most frequent clause type is **weqatal-Pas**, a member of the passive functional voice cluster (see Tables 30 and 31). This cluster has a pattern of undergoer topicality higher than actor topicality, especially as measured by anaphoric continuity. Another frequent clause type is **weqatal-Pas,U**, which belongs to the low topicality passive functional voice cluster, characterized by low topicality of both actor and undergoer, with the undergoer somewhat more topical (see Tables 32 and 33). The topicality patterns shown in Table 92 are mainly the result of the combination of influences of these two clusters.

Relative Topicality of Verb Conjugations

The relative topicality of the different verb conjugations can be evaluated based on the results shown in Tables 82 to 92. In Table 93 I rank the various verb conjugations in the two discourse genres by the mean anaphoric continuity difference:

TABLE 93

**VERB CONJUGATIONS RANKED BY MEAN
ANAPHORIC CONTINUITY DIFFERENCE**

Amalgamated Clause Type	Genre	Mean Anaphoric Continuity Difference	Mean Topic Persistence Difference
Imperative	Directive	6.01	3.09
<i>yiqtol</i>	Directive	4.93	3.43
<i>weqatal</i>	Directive	3.75	2.31
<i>qatal</i>	Narrative	3.68	1.75
<i>yiqtol</i>	Narrative	3.64	2.03
<i>wayyiqtol</i>	Narrative	3.62	1.79
<i>qatal</i>	Directive	2.69	1.50
Passive <i>qatal</i>	Narrative	-2.72	-0.69
Passive <i>wayyiqtol</i>	Narrative	-3.54	-1.61
Passive <i>yiqtol</i>	Directive	-3.73	-0.22
Passive <i>w eqatal</i>	Directive	-4.13	-0.71

Table 93 ranks the verb conjugations in terms of the relative topicality of actor compared to undergoer, as measured by anaphoric continuity. Imperatives show the greatest difference, with actors being much more topical than undergoers. Next in rank are *yiqtol* and *w eqatal* in directive discourse. They are followed by the three active verb conjugations in narrative, which differ very little in mean anaphoric continuity difference. The active conjugation with the lowest mean anaphoric continuity difference is *qatal* in directive discourse. The negative values for the passive verb forms indicate that undergoers are more topical than actors. The figures for mean topic persistence difference follow a similar pattern, with a few small changes in the rankings.

What factors cause this pattern of varying topicality? It is clear that the active versus passive morphological contrast is directly related to the relative topicality of actor and undergoer. With regard to the differences between the active verb conjugations, it would seem wiser not to posit a direct relationship between choice of verb conjugation

and topicality, but rather to seek other variables which can help explain the differences. For example, imperative verbs require a second person subject, so there is much less scope for subject switching than with other verb conjugations. This helps explain why the actor tends to have quite high anaphoric continuity as compared to other conjugations.

One factor that may help explain the difference in relative topicality between *yiqtol* and *weqatal* in directive discourse is the fact that *weqatal* clauses almost never take fronted clause constituents. Hence clause types with fronted constituents are largely restricted to *yiqtol* in directive discourse. It was shown in Chapter 5 that fronted subjects differ little from postverbal subjects in terms of topic or focal status. So the occurrence of fronted subjects with *yiqtol* will have little effect on the overall pattern of topicality of that conjugation. In contrast to this, fronted objects are strongly associated with low topicality of the undergoer object. The occurrence of this clause type with *yiqtol*, but not with *weqatal*, will tend to reduce the mean topicality of undergoers in *yiqtol* clauses as compared to *weqatal* clauses. This is one factor which contributes to the fact that *yiqtol* clauses rank higher than *weqatal* clauses in terms of the difference in topicality between the actor and undergoer.

The significant difference between the topicality of *yiqtol* in directive discourse and *yiqtol* in narrative is doubtless related to the fact that the latter is predominately the preterite *yiqtol* which is cognate to *wayyiqtol*, of different etymological origin from the *yiqtol* in directive discourse, derived from proto-Semitic **yaqtulu*.³

Implications with Regard to Continuity

The above analysis has implications with regard to claims by Givón (1977) and Butch (1992) that continuity is a key distinction between *wayyiqtol* and *qatal*. Whereas Butch (1992) does not clearly define what he means by continuity, Givón makes it clear he

³ For a discussion of this distinction, see D. Andersen (2000:17-25).

is talking about topic continuity versus topic shifting (1977:210). One way of measuring this is via the referential distance of the actor and undergoer, with a referential distance of one being the signal of topic continuity. If these claims were true, one would expect there would be a big difference between the referential distance figures for *wayyiqtol* and *qatal*. A comparison of Tables 84 and 86 shows that 59% of *qatal* clauses in narrative have a referential distance of one for the actor, versus 68% for *wayyiqtol* clauses. With regard to the undergoer, 29% of *qatal* clauses have a referential distance of one, versus 33% for *wayyiqtol* clauses. Although this shows that *wayyiqtol* clauses have slightly more topic continuity than *qatal* clauses, the difference is not what you would expect if this was a key semantic distinction between the two.

The detailed analysis of many different clause types in the previous chapters has made it clear that distinctions between verb conjugations are a relatively minor factor in determining topicality patterns and topic continuity. The key factor is what functional voice category a particular clause type falls into. The discussion of the topicality patterns of *qatal* and *wayyiqtol* found in Tables 84 to 86 indicated that both verb conjugations are used for a variety of functional voice categories, so that any characterization of the continuity functions of *qatal* and *wayyiqtol* per se is likely to be an overgeneralization. The same applies to *yiqtol* and *weqatal*, which Buth (1992) also claims are distinguished by the feature of continuity. This shows that it is more insightful to analyze topicality and continuity in relation to clause types, rather than merely in relation to contrasting verb forms.

Conclusion of Part II

In Part II, I have analyzed functional voice categories in Biblical Hebrew narrative and directive discourse. In Chapter 3, I used principal component analysis to cluster common clause types. For both types of discourse, I identified an antipassive

functional voice cluster, an active functional voice cluster, a semi-active functional voice cluster, a passive functional voice cluster, and a low topicality active functional voice cluster. An additional cluster found only in directional discourse was a low topicality passive functional voice cluster.

In Chapters 4 to 6, I analyzed various types of amalgamated clause types. In Chapter 4, I found that object marking was related to topicality and functional voice. In particular, I found that objects marked with ~~NK~~ and suffixed objects were associated with high topicality, whereas unmarked objects were associated with low topicality. Zero anaphora of objects was associated with topical referents of low cataphoric importance.

In Chapter 5, I found that constituent order and the nominal or pronominal status of core arguments were related to topicality and functional voice. For example, OV order and OVS order were associated with antipassive functional voice, whereas VOS order was associated with inverse functional voice. SVO order was associated with various functional voices depending on the nominal or pronominal status of the core arguments. If the object is pronominal, it falls into the category of inverse functional voice. If the subject is pronominal, it falls into the category of antipassive functional voice. If both subject and object are nominal, it falls into the category of low topicality active functional voice.⁴

I found that verb conjugation was not directly related to topicality and functional voice, but that differences in the topicality patterns of the verb conjugations can be best explained due to the relative frequency of common clause types belonging to various functional voice clusters.

⁴ For a more detailed summary, see Table 115 in the concluding chapter.

PART III

ANALYSIS OF MORONENE CLAUSE TYPES

Part III consists of my analysis of Moronene clause types. In Chapter 7, I give a brief introduction to Moronene syntax, and discuss various suggestions in the literature as to how to analyze voice in Moronene. In Chapter 8, I spell out adjustments to the methodology needed to make it appropriate for Moronene clause types. In Chapter 9, I apply the statistical procedures used in Chapter 3 to frequently occurring Moronene clause types. I analyze the clause types using principal component analysis, generating a chart showing clusters of clause types. For each cluster, I present and discuss statistics showing the topicality patterns and classify it with regard to functional voice categories.

CHAPTER 7

MORONENE SYNTAX AND THE ANALYSIS OF VOICE

In this chapter I will give a brief introduction to the Moronene language and describe aspects of its syntax which are relevant to the present research. I will then discuss various suggestions in the literature as to how syntactic and functional voice should be analyzed in Moronene and closely related languages.

Moronene Syntax

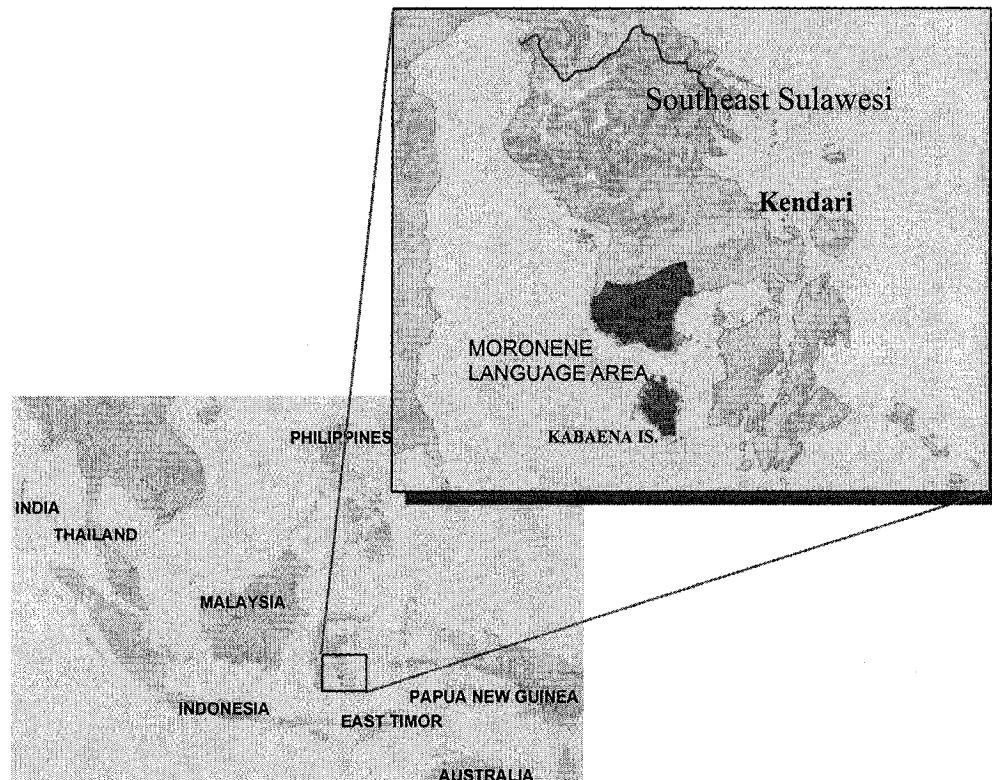
The Moronene language is spoken by 36,000 speakers in Bombana district, Southeast Sulawesi, Indonesia. See Map 1 below. It is an Austronesian language, a member of the Bungku-Tolaki microgroup.¹ Published works relating to Moronene grammar include Muthalib, Pattiasina, Usmar, and Rambe (1991), Mead (1998), D. Andersen (1999), S. Andersen (1999), and S. Andersen and D. Andersen (2005).

David Mead regards the Proto Bungku-Tolaki language as having a split-ergative system in main clauses (2002:156). To some extent, the same analysis is appropriate for Moronene, which is a daughter language of Proto Bungku-Tolaki. This means that there are two ways of coding the subject of intransitive clauses. One way follows the pattern of objects of transitive clauses, namely using an absolute suffix. The other follows the pattern of subjects of transitive clauses, namely using a nominative clitic.² Using

¹ The evidence for the establishment of the Bungku-Tolaki microgroup is found in Mead (1998). See also discussion in Mead (2002).

² Even though this is a partially ergative system, the clitic used to mark subjects of transitive clauses is glossed nominative, reflecting its widespread use with intransitive verbs as well.

alternative terminology, one can say that S is sometimes coded like A, and sometimes like O.



MAP 1

MORONENE LANGUAGE AREA³

Many important distinctions in Moronene syntax are indicated by derivational prefixes on the verb. Some of the more important are: an intransitive *pe-* or *me-* prefix, an action focus *poN-* or *moN-* prefix, an undergoer voice *ni-* prefix, and a resultative *te-* prefix. Another important verb form consists of a transitive verb stem plus an absolute

³ Thanks to Dennis Conroy for preparing this map for me.

suffix designating the object, which I will refer to as a V-Opro form. In the following sections, I illustrate a number of different semantically transitive clause types, subdivided according to the various verb forms. An abbreviation for each clause type is given before the free translation, in anticipation of the clause type classification system which will be described in Chapter 8.

Clause Types with V-Opro Forms

One set of transitive clause types is characterized by indexing the undergoer object with absolute suffixes on the verb stem (symbolized as Opro). The examples below illustrate the distinction between clauses with an object suffix alone (example (1)), and clauses in which the object suffix is coreferential with a nominal object (examples (2) and (3)).⁴

1. tabea po-pate-aku ka'asi osie
except CAUS-kill-1sABS CMS don't
V-Opro 'but please don't kill me' (diu 241b)
2. yo laku ari kea-'o manu
ART civet already bite -3sABS chicken
S,V-Opro 'the civet bit the chickens' (laku11)
3. po-hule-mo wowa-a tuai-'u
INT-go.home-IMPV carry-3sABS younger.sibling-2sPOS
V-Opro,O 'go home, carry your younger sibling' (diu 108)

The examples above do not have the subject marked by a clitic or affix. Examples (4) and (5) below illustrate nominative marking of the subject. In example (4), the nominative clitic is procliticized to the verb, in example (5), it is procliticized to a negative particle, whereas in example (6), it is encliticized to a conjunction.

4. mi-m-pasipole-e iile
2pNOM-PL-undertake-3sABS tomorrow

⁴ Unlike Hebrew examples, which can be easily referred to by Scripture reference, Moronene examples are numbered for ease of reference (except for examples from the Moronene translation of biblical texts).

NOM,V-Opro ‘you take care of it tomorrow’ (laku75)

5. taba tina manu ku-da'a nta balu-'o
only female chicken 1sNOM-NEG FUT sell-3sABS
O,NOM,V-Opro ‘but the hens I won’t sell’ (laku49)
6. nahopo nde'e ka-ndo wawa-hira hai ka-torungku
next indeed then-3pNOM carry-3pABS to NOM-prison
NOM,V-Opro ‘then they took them to the prison’ (Colisi 106)

Examples (7) and (8) below illustrate absolutive marking of the subject. The absolutive morpheme marking the subject is suffixed to an auxiliary. The main verb also has an absolutive suffix marking the object. Note that in the clause type abbreviations, absolutive suffixes marking the subject are represented by the abbreviation ABS, whereas those marking the object are represented by the abbreviation Opro.

7. ari-aku-mo wowa-hira
finish-1sABS-PRF bring-3pABS
Aux-ABS,V-Opro ‘I already brought them’ (laku20)
8. da-hoo susumi-o
be-3sABS follow-3sABS
Aux-ABS,V-Opro ‘she was following him’ (Kada 151.684)

Clause Types with *moN-V* Forms

In contrast to all the examples above, another set of semantically transitive clauses does not have the undergoer indexed on the verb. A transitive verb stem without such an absolutive suffix to mark the object occurs with the *moN-* verb prefix. In almost all cases, a *moN-* prefix and an absolutive suffix referring to an object cannot co-occur. There are two forms of the prefix, *moN-* and *poN-*. The former can be regarded as a nonfinite form (Mead (1998:173) calls it a participle), whereas the latter is finite.⁵ The *moN-* prefix will be glossed AF/NF “action focus/nonfinite,” whereas the alternative *poN-* prefix will be glossed AF “action focus” (implicitly finite). Etymologically, the

⁵ The semantic distinction between the two forms is more complex than this, but a more detailed analysis is beyond the scope of this dissertation.

poN- form is more basic, and the *moN-* form arose from coalescence of the participle marker *-um-* with the *poN-* (Mead 1998:173). But in Moronene, the *moN-* form is more frequent and the *-um-* infix no longer exists as a participle marker, so for convenience I will refer to verbs forms with either prefix collectively as *moN-V* forms. A number of examples of clauses with *moN-V* forms are set out below. Note the contrast between the nonfinite form of the *moN-* prefix in examples (9) and (10), and the finite form *poN-* in example (11). Both are symbolized as **mon** in the clause type abbreviations.

9. mo-'ita puhu, mo-'ita in-isa
AF/NF-ask corn AF/NF-ask UV-pound
monV,O 'he asked for corn, he asked for husked rice' (laku153)
10. osie-mo mo-wada koie karambau-ku
don't-IMPV AF/NF-pay that buffalo-1sPOS
monV,O 'don't pay for that buffalo of mine' (Maegani 224)
11. po-wawa yo boru
AF-carry ART umbrella
monV,O 'take an umbrella' (perc)

In the examples above, the subject is implicit. Just as was illustrated earlier for verbs with object suffixes, clauses with *moN-V* forms have the option of marking the subject either with an absolute suffix or a nominative proclitic. Examples below illustrate the former case. In example (12), the absolute is suffixed to an auxiliary. In examples (13) and (14), it is suffixed to the main verb. In this latter case, it is the presence of the *moN-* prefix on the verb which provides a signal to the language user that this absolute suffix refers to the subject rather than the object.

12. da-hira-po mo-hoho kawasa-no mokole-do
be-3pABS-IMPF AF/NF-worship rich-3sPOS king-3pPOS
Aux-ABS,monV,O 'they still worship the glory of their king' (dic:hoho)
13. nta mo-wewe'u-kita yo wala
FUT AF/NF-make-1piABS ART fence
monV-ABS,O 'we're going to make a fence' (perc)

14. po-lesa-ko-mo ta'i sapi
 AF-step.on-2sABS-PRF feces cow
 monV-ABS,O 'you have stepped on some cow manure' (perc10)

The examples below illustrate the nominative marking of the subject in conjunction with a *moN-V* form. In examples (15) and (16), the nominative is encliticized to a conjunction. In example (17) it is procliticized to an auxiliary. Examples (15) and (16) illustrate the use of a *moN-V* form without any explicit object. In example (15) the noun phrase designates the subject.

15. ka-i po-lo-lawani koie i Maria
 then-3sNOM AF-RED-answer that PI Mary
 'then Mary answered' (Kunini 25b)

16. ka-i po-'oli
 then-3sNOM AF-buy
 'then she bought it' (Icadiu 017)

17. to-daa nta mo-weweu epu
 1pi-be FUT AF/NF-make coconut_oil
 'we're going to make coconut oil' (coco1)

Clause Types with *me-* or *mo-* Prefix

This study is restricted to semantically transitive clauses. As was the case in Hebrew, in Moronene some semantically transitive clauses are syntactically intransitive. Examples of this are clauses with implicit undergoers, such as examples (15) and (16), or clauses with oblique undergoers governed by a preposition. Examples of the latter are given below. As with syntactically transitive clauses, the subject of intransitive clauses may be either unmarked, as in example (18), marked with an absolute suffix, as in example (19), or a nominative clitic, as in example (20). In Moronene, many intransitive verbs are marked with an intransitive prefix.

18. me-pisi i rapa-no
 INT/NF-press at head-3sPOS
V,prepO 'he pressed on his head' (Kada 1C.2076)
19. da-hoo mo-mone⁶ hai otu ng-keu
 be-3sABS NF-climb at top LG-tree
Aux-ABS,V,prepO 'he was climbing to the top of the tree'
 (Sioropa 096)
20. ka-i pe-kekei ka'asi hai hahi
 then-3sNOM INT-dig poor.thing at sand
NOM,V,prepO 'then he dug in the sand, poor thing' (Maegani 063c)

The following is an example of a syntactically intransitive clause with an implicit undergoer.

21. itai me-sisiwi
 together INT/NF-coax
 '[they] joined in in coaxing [her]' (Maegani 335e)

Clause Types with *ni-* or *te-* Prefix

The clauses in this subsection are characterized by the use of the undergoer voice prefix *ni-* (or its allomorph, the infix *-in-*) or the resultative prefix *te-* on the verb.

22. t[in]arima-a moico-si langa-ku
 [UV]-accept-3sABS good-CTR brideprice-1sPOS
UVV-ABS,U 'my brideprice was well accepted' (w:46)
23. nta te-dao-ho-mo koie susu
 FUT RES-cover-3sABS-PFV that breast
UVV-ABS,U 'that breast will be covered over' (diu 137)

The above examples can be regarded as syntactically passive, since the undergoer is the subject or pivot, and the actor is implicit. The same applies to example (24), in which the actor is present as an oblique.

⁶ The semantic significance of the *mo-* prefix on *momone* is somewhat problematical. It is not an action focus *moN-* prefix, because it does not disappear when an absolute suffix is added designating the undergoer, e.g. *momone-o* "climb it." It seems to be a semantically bleached frozen prefix, which only signals the finite versus nonfinite distinction.

24. daa-ko nta ni-rako hai polisi
 be-2sABS FUT UV-catch at police
Aux-ABS,UVV,prepA 'you may be caught by the police' (7a)

More problematical for analysis are clauses with an undergoer voice verb and the actor marked on the verb with a possessive suffix, as in the examples below.

25. da-hoo pe'ico raro-m-punti da in-onto-ngku
 be-3sABS yon group-LG-banana REL UV-look-1sPOS
UVV-POS 'over there there is a group of banana trees which I can see' (sio44)

26. halu ropa iaa nta p[in]oko-'ala-no
 eight fathom he FUT able[UV]-take-3sPOS
 mokole i wonua wita i Moronene
 king at area land at Moronene
U,UVV-POS,A 'a distance of sixteen yards was taken by the king of the region of
 Moronene land' (Kada 151:001)

This construction is commonly found in relative clauses, as in example (25). There are two competing syntactic analyses of this clause type. First, it could be regarded as syntactically passive, with the possessive marking of the actor being analyzed as oblique. Under this analysis, the clause would be classified as intransitive. Second, it could be regarded as a syntactic inverse, with the undergoer as subject or pivot, and the actor as a second core argument. Under this analysis, the clause would be classified as transitive. I discuss the relative merits of these two analyses in the following section.

Analysis of Voice in Moronene

Although relatively little has been written in regard to Moronene syntax, there are several suggestions with regard to the analysis of voice. There are two voice-related verbal affixes for which varying analyses have been given: the *ni-* prefix and the *moN-* prefix. These are discussed in the following subsections.

Passive and Inverse

As mentioned above, there are at least two alternative analyses possible of clauses with the *ni-* prefix. The first is to analyze all clauses with the *ni-* prefix as passive. This is the approach of Mead, who remarks, “The morpheme <*in*> in Bungku-Tolaki serves as both a marker of passive voice and as a nominalizer which profiles the referent in patient role” (1998:157). The passive analysis is straightforward: the *ni-* prefix is labeled as a passive morpheme, and the actor is regarded as oblique, optionally marked on the verb with a possessive suffix.

The passive analysis is most appropriate for those clauses in which the actor is implicit, such as example (22) above. These clearly fit the definition of syntactically passive clause given in Chapter 2, namely:

- An intransitive clause type derived from a lexically transitive verb in which the undergoer is subject/pivot and the actor is oblique or omitted.

This analysis is more problematic for clauses which have the actor marked on the verb with a possessive suffix, as in examples (25) and (26). However one can maintain a passive analysis of those clauses using the following reasoning:

- It is clear that *ni-* verbs are morphologically passive in Moronene, since they are used in prototypically passive clauses.
- Hence, all Moronene clauses with *ni-* verbs will be labeled as passive, including non-prototypical passives which have an explicit actor.

An alternative analysis is to divide clauses with *ni-* verbs into two syntactic categories: passive and inverse. Clauses without an explicit actor, or with an actor governed by a preposition, as in example (24), are regarded as intransitive and classified as syntactically passive. Clauses with an explicit actor marked by a possessive suffix on the verb, as in examples (15) and (16) above, are regarded as transitive, and classified as syntactically inverse. This approach is compatible with the analysis of Suree Andersen

and David Andersen (2005:246), who describe such clauses as transitive clauses using undergoer focus.

There are two main arguments in favor of the combined passive/inverse analysis. First, *ni-* verb clauses with possessive-marked actors do not seem to meet the definitions of syntactic passive mentioned in Chapter 2, in particular Comrie's criterion: "[T]he A[gent] is...minimally integrated into the syntax of its clause" (1988:21). Normally affixal marking on the verb is a feature of core arguments, not peripheral arguments. Hence it is unclear whether the possessive marking of the actor should be regarded as oblique. If the actor is a core argument, then the clause is transitive, in which case it would be more appropriate to classify it as a syntactic inverse voice, rather than passive voice.

The second argument relates to the topicality of actors. One expects actors in a passive construction to have low topicality, whereas actors in an inverse construction usually have relatively high topicality. D. Andersen (2003) gives the following topicality values for *ni-* verb clauses with possessive marked actors, which he refers to as the PasV-POS clause type:

TABLE 94

TOPICALITY VALUES FOR PasV-POS CLAUSES
(D. Andersen 2003:123)

n=17

Referential Distance			Topic Persistence		
Topicality	Actor	Undergoer	Importance	Actor	Undergoer
High (1)	71%	100%	High (3-10)	82%	53%
Medium (2-3)	24%	0%			
Low (4-19)	0%	0%	Low (0-2)	18%	47%
New (20)	6%	0%			

The figures in Table 94 show that the actor in this construction is highly topical. This supports the identification of this clause type as an inverse rather than a passive.

Phil Quick (2005) classifies as inverse a similar cognate construction in Pendau, a language of Central Sulawesi. Note the following example:

27. Si-papa ni-tuju-'u
 PN/ABS-grandpa IV/RE-send-1sGE
 'I sent Grandpa' (Quick 2002:105)⁷

In the above example, the *ni-* prefix is analyzed as inverse voice realis, and the genitive suffix on the verb designates the actor. Quick (2003:350-356) gives several arguments arguing in favor of an inverse analysis as against a passive analysis. These include arguments that the genitive pronouns are not oblique, and that the actors in inverse constructions are highly topical. These arguments are parallel to the arguments mentioned above for Moronene. If one accepts that the *ni-* prefix in Moronene is used both for inverse and passive voice, then both of these can be regarded as types of undergoer voice, since the undergoer is the subject in both constructions. This is the analysis I adopt in this dissertation.

Antipassive and Active

Another voice-related affix in Moronene with varied analyses is the prefix *moN-*. According to Muthalib et al (1991:31), the *moN-* prefix expresses an active transitive activity or action. Mead suggests that in Moronene, verbs with *moN-* or *poN-* prefixes function as an antipassive voice, whereas V-Opro forms are active voice (1998:172-180). According to Mead, one “use of antipassive forms is what may be termed ‘action-focus.’ In such cases any overt reference to a highly backgrounded patient may simply be missing” (1998:177). Mead’s analysis of antipassive and active voice applies not only to

⁷ I have adapted the glosses of this example taken from Quick (2002) to follow the revised glossing system used in Quick (2005).

Moronene, but also to Proto Bungku-Tolaki, which is the proto-language of Moronene. Malcolm Ross agrees with Mead's analysis, and relates these Bungku-Tolaki forms to the Proto Malayo-Polynesian forms they are descended from. He remarks,

the antipassive is clearly the functional descendant of the PMP actor voice and corresponds to the Indonesian-type active in being used only when the undergoer is specific. The active is the functional descendant of the PMP patient voice (!) and corresponds to the Indonesian-type passive as it is the default main-clause transitive form (2002:56).

Mead describes the Proto Bungku-Tolaki **moN*-V form as a transitive indefinite object form, and the *<*um*>-V form, cognate to the Moronene V-Opro form, as a transitive definite object form, remarking,

Transitive indefinite object forms could also be termed 'antipassives' in that they indicate lowered referentiality/topicality of the patient. In Bungku-Tolaki languages they have the same case marking potential as do ordinary intransitives (2002:155).

S. Andersen and D. Andersen (2005) present an extensive discussion of the semantics of the Moronene verbal prefix *moN*-, in particular evaluating to what extent it can be analyzed as an antipassive. This depends on whether one uses a syntactic or functional definition of antipassive. They make the following remarks in relation to *moN*-V constructions in which the actor is marked by the absolute case:

typical antipassive clauses may be objectless, or the undergoer may be verb-incorporated, or it may be marked as oblique....None of these characteristics match the Moronene absolute actor construction. The undergoer appears in the normal position for an object after the verb without any oblique marking...Nor is this construction limited to thematically unimportant objects (2005:254).

They conclude,

The Moronene constructions...are best regarded as transitive clauses, not intransitive. Using a syntactic definition of antipassive, the Moronene *moN*-V forms, even when occurring in the absolute actor construction, are best regarded as something other than antipassive (2005:254-255).

Basically these varying analyzes can be related to the following theoretical question: Is the *moN-V* construction transitive or intransitive? If it is intransitive, it is best analyzed as syntactically antipassive. If it is transitive, it is best analyzed as something else.⁸

Andersen and Andersen (2005) also evaluate the application of a functional definition of antipassive to the *moN-V* constructions based on an analysis of topicality patterns, as shown in Table 95.

TABLE 95
TOPICALITY VALUES FOR MON-V/PON-V CLAUSES
 (Andersen and Andersen 2005:256)

Referential Distance			Topic Persistence		
Topicality	Agent	Patient	Topicality	Agent	Patient
High (1)	74%	30%	High (>2)	85%	17%
Medium (2-3)	23%	15%			
Low (>3)	2%	55%	Low (0-2)	15%	83%

These results are based on a more detailed analysis of topicality patterns in Moronene as found in D. Andersen (2003). The methodology used in D. Andersen (2003) and Andersen and Andersen (2005) differs slightly from that used in this dissertation. The following are the main points in which the earlier investigations differ from this dissertation:

- Referential distance values were not subdivided to distinguish between new and reactivated referents.

⁸ See Ross (2002:24-31) for a discussion of how the identification of an antipassive voice in Tagalog depends on whether the clause type in question is classified as transitive or intransitive.

- The analysis was not restricted to narrative clauses, but also included clauses from other genres in embedded quotations.

Andersen and Andersen make the following comments on the results shown in Table 95:

In terms of topicality, *moN*-V forms in Moronene are somewhat similar to antipassive verbs found in some other languages. But there are also some less typical characteristics. While the patient is usually nontopical, there is a significant minority of topical patients (2005:257).

Based on further semantic analysis, Andersen and Andersen describe the *moN*-V construction as being action focus. Using a photographic analogy, they explain:

But a shift from a V-ABS form to a *moN*-V form does not imply that the photographer simply moves the camera a bit to focus on the actor rather than the undergoer. The actor is not profiled with a *moN*-V form. Rather it implies that the camera is not shifted, but instead the zoom is adjusted to a wider angle to take in the whole scene. Hence we suggest that some better terms to describe the *moN*-V form in Moronene are ‘action focus’ or ‘activity focus’ or ‘scene focus’ (2005:276).

In this dissertation, I follow the above analysis and gloss the *moN*- prefix as action focus. As is clear from the above quotation, in this context, the word “focus” is being used in its general sense, that is, focusing on the action. It should not be confused with other technical meanings of focus, such as sentence focus as defined by Lambrecht. I will touch further on the question of the appropriate classification of *moN*-V forms after the analysis of Moronene topicality patterns in Chapter 9.

CHAPTER 8

ADJUSTMENTS TO THE METHODOLOGY FOR MORONENE

In this chapter I will discuss how the methodology presented in Chapter 2 needs to be adapted to cope with the specifics of Moronene syntax as presented in Chapter 7. I will also describe the texts which make up the Moronene corpus.

Defining Moronene Clause Types

As far as possible, the same features which I used to distinguish Hebrew clause types will be used for Moronene clause types. Although some adjustments need to be made because of differences between Hebrew and Moronene clause syntax, in a number of ways the syntax of the two languages are similar.

In Moronene, just as in Hebrew, clauses may or may not have explicit nominal subjects and objects. There is also considerable variation in constituent order: attested orders in Moronene include SV, VS, VO, OV, SVO, VSO, and VOS. Just as in Hebrew, the object may occur as a suffix on the verb. In Moronene a suffixed object and nominal object often both occur in the same clause referring to the same entity, whereas this is rare in Hebrew.

In Hebrew, clause types are distinguished according to the verb conjugation used, as well as according to whether the verb is morphologically passive. Moronene has undergoer voice verb forms, marked by a *ni-* prefix. For the purposes of this research, these are grouped together with resultative verb forms, marked with a *te-* prefix. Like the forms with a *ni-* prefix, the resultative forms have the undergoer as the subject, and the

actor is usually implicit. Hence they are syntactically passive. Ideally, the topicality patterns of *ni-* forms and *te-* forms would be investigated separately, but in the present corpus, the sample sizes would be too small. Therefore they are grouped together under the label undergoer voice verb (UVV).

Unlike Hebrew, which expresses tense and aspect distinctions through the choice of verb conjugation, in Moronene, such distinctions are primarily expressed through optional auxiliaries. However, as described in Chapter 7, there is an important distinction in Moronene transitive verbs between forms with the action focus prefix *moN-* or *poN-*, and forms without the prefix. This distinction will be reflected in the variables determining the clause types for analysis.

A significant difference between Moronene and Hebrew syntax is how the subject is marked by affixes or clitics. Whereas in Hebrew, the form of subject affixes is completely determined by the choice of verb conjugation, in Moronene there are three options for the grammatical case of the subject affix or clitic, which is either affixed to the verb or cliticized to a conjunction or auxiliary. These are either nominative (NOM), which can index the subject in intransitive clauses or the actor in transitive clauses, absolute (ABS) which can index the subject in intransitive clauses or the object in transitive clauses, or possessive (POS) which can index the actor in transitive clauses with undergoer voice.

The variables which determine the clause types in Moronene can be understood as the answers to the following eight questions:

- Is there an explicit nominal subject or object? (S, O)
- For undergoer voice clauses, is there an explicit nominal actor or undergoer? (A, U)
- What affix or clitic set is used to mark the subject/actor? (NOM, ABS, POS)

- Does the verb take an action focus prefix? (monV)¹
- Does the verb take a *ni-* prefix or *te-* prefix (undergoer voice)? (UVV)
- Does the verb have an object suffix? (Opro)
- Is there an auxiliary carrying a suffix? (Aux)²
- Is there a preposition governing an oblique undergoer or actor? (prep)

Examples of how these variables are used to classify particular clauses were given in Chapter 7.

Other Adjustments to Methodology

The criteria for selection of Moronene clauses to be analyzed for the most part parallel the criteria used for Hebrew. I restrict the analysis to semantically transitive clauses. As in Hebrew, I exclude relative clauses and clauses which take a clause as object. But unlike Hebrew, I do not exclude participial clauses. According to Mead, the nonfinite form of the prefix, *moN-*, is a participle (1998:173). Whereas in Hebrew one factor leading to the exclusion of participial clauses from the analysis was their relative infrequency, in Moronene *moN-V* clauses are quite frequent.

In Moronene, only narrative is analyzed. As in Hebrew, I exclude embedded quotations. One result of this is that there are no clauses with first or second person subjects or objects included in the analysis.

Although it would be attractive to include an analysis of Moronene directive discourse to parallel the Hebrew investigation, there are three reasons I chose not to do so. First, the practical need to limit the time spent on research and analysis, and to limit the length of the dissertation. Second, the relative paucity of directive texts in my

¹ I ignore the distinction between the finite form of the transitive prefix (*poN-*) and the nonfinite form (*moN-*).

² Only auxiliaries with an absolute suffix are included in the clause type abbreviation. Others are ignored, so as not to unnecessarily increase the number of clause types.

collection of Moronene texts. In order to have an adequate sample size, it would have been necessary to record and translate many additional texts. Third, in Moronene, most of the major verb forms occur frequently in narrative, making a parallel investigation of directive discourse less urgent. This is unlike Hebrew, in which a parallel investigation of directive discourse is necessary in order to understand the functioning of important verb forms like *weqatal* and imperative, which are less frequent in narrative.

With regard to defining clause units for counting purposes, I count serial verbs as separate clauses. Parallel to Hebrew, I include relative clauses in the same clause unit as the main clause they modify. Similarly I do not count certain preposed temporal clauses as separate clause units. Whereas in Hebrew the distinguishing characteristic of such temporal clauses is the verb וַיְהִי “and it was” or וְהִיא(וְהִי) “(and) it will be,” in Moronene the distinguishing characteristic is that no participants are mentioned. On the other hand, temporal clauses which mention participants are counted as separate clause units.

Because the study of Moronene is limited in scope, I restrict the statistical analysis of topicality patterns to clause types with nine or more occurrences,³ similar to what was done for Hebrew in Chapter 3. I do not define any amalgamated clause types based on particular syntactic features. Hence the type of analysis found in Chapters 4 to 6 is not done for Moronene.

Texts

I have chosen several texts, or large text extracts, and have investigated most of the clauses within the narrative portions of these texts. I have analyzed two narrative poetry texts, and four narrative prose texts.

³ Because of the relatively small size of the Moronene corpus compared to Hebrew, and the smaller numbers of each clause type, I have reduced the minimum sample size from ten to nine.

The first narrative poetry text is *Kada*, an epic poetry text recounting conflict between Moronene and Tolaki kings in bygone days. “*Kada*” is actually the name of the genre, rather than a specific text. The text is composed in traditional Moronene meter, which means that each line has seven syllables. There is a great deal of poetic synonymous parallelism, so that adjacent lines often express the same meaning using synonymous vocabulary. The text I am analyzing was recited by Nandi in the village of Rau-Rau, Rarowatu subdistrict, in the 1980s. It was recorded, transcribed and translated into Indonesian by Sahido Tambara. This work was part of a project sponsored by Koninklijk Instituut voor Taal-Lande en Volkenkunde (KITLV). The text is found in the KITLV library in Leiden, designated by the code KITLV Or 563. I am grateful to KITLV for giving me permission to use this text. I am also grateful to Sahido Tambara and Nandi’s son Etu for helping me correct the transcription and translation.

This text is a very long text; it was recorded over five successive nights, and the typed transcription and translation is over seven hundred pages long. Therefore I have chosen an extract of the text to use for analysis, consisting of 986 clauses. Within this extract, some passages (particularly fighting scenes), repeat earlier passages almost word for word. I have eliminated these from the analysis. The remaining extract consists of 852 clauses.

The second narrative poetry text is *Kunini*, a Christmas carol composed in the traditional heptasyllabic meter with much poetic parallelism. It was composed by Bawea Ferdinand Powatu, the first Moronene pastor, in the 1930s. It consists of 148 heptasyllabic bicolons. It recounts most of the Christmas story, including the annunciation, the journey to Bethlehem, and the visit of the shepherds and the Magi. It takes about twenty minutes to sing. The text was transcribed and translated into Indonesian by Ndasi.

The first narrative prose text is entitled *Petampu'uno Ica Diu* (The Beginning of the Dugong). It is a traditional folk tale, 478 clauses long, about a woman who changed into a dugong. *Tinano Maegani Miano Cantete* (Maegani's Mother; the Person in the Latrine), 943 clauses long, is about the rescue of a hostage imprisoned in a latrine. *Wuu Sio Ropa* (Nine Fathom Hair), 285 clauses long, is about an orphan boy who married a princess with very long hair. These three stories were recited by Wede in the village of Taubonto, Rarowatu subdistrict. *Colisi* (Pinkie) is 229 clauses long, and is about a boy the size of a pinkie who was rescued after being swallowed by a horse and a tiger. It was recited by Ndasi in the village of Taubonto.

I divide the corpus into a primary corpus and a secondary corpus. The primary corpus consists of the two narrative poetry texts, *Petampu'uno Ica Diu*, *Colisi*, and the first 512 clauses of *Tinano Maegani Miano Cantete*. The secondary corpus consists of the last 431 clauses of *Tinano Maegani Miano Cantete* as well as *Wuu Sio Ropa*.

The reason for the division into two corpora is as follows. In order to be included in the analysis, it is necessary for a clause type to occur at least nine times in the corpus. When all of the 596 semantically transitive clauses in the primary corpus were analyzed, five common clause types occurred more than forty times, whereas all the others had sample sizes of seventeen or fewer. There were a number of clause types which had almost nine occurrences. Therefore I searched the secondary corpus for only the less frequent clause types, to increase the sample sizes and to find the additional examples needed to reach the minimum number of nine. The other more common clause types were skipped in the secondary corpus. I added an additional forty-four semantically transitive clauses from the secondary corpus, bringing the total to 640. Within these clauses, there are fifteen clause types with a sample size of nine or over.

CHAPTER 9

CLUSTERING OF MORONENE CLAUSE TYPES

In this chapter I apply the methodology described in Chapters 2 and 8 to Moronene semantically transitive clauses. I apply the results of principal component analysis. to clause types which occur nine or more times and present them in a chart which shows how clause types with similar topicality patterns cluster together. For each cluster, I present and discuss the statistics showing the topicality patterns and classify the cluster according to functional voice categories.

Before examining the clustering of the topicality patterns of common Moronene clause types, I present in Table 96 the topicality measures for the entire sample of the 640 syntactically or semantically transitive clauses found in the Moronene corpus.

TABLE 96
**TOPICALITY MEASURES FOR MORONENE
 SEMANTICALLY TRANSITIVE CLAUSES**

n=640

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	78%	41%	High: 3-10	74%	40%
2-3	Med.: 9-9.5	9%	15%			
4-19	Low: 1-8	5%	12%	Low: 0-2	26%	60%
>19 Reactiv.	V. Low: 0.5	2%	5%			
20 New	V. Low: 0	6%	27%			
Standard Deviation		2.68	4.45	Standard Dev.	3.08	2.84
Mean Anaphoric Continuity		9.02	6.39	Mean Topic Pers.	5.05	2.71
Mean Anaphoric Continuity Difference		2.63		Mean Topic Persistence Dif.	2.34	
Mean Referential Distance		2.90	7.96			

In examining the tables presenting topicality measures for each cluster of clause types, it may be helpful to compare the figures with those in Tables 96. The weak hypothesis of the present study is that there will be a significant difference between the topicality measures of certain individual clause types as compared to that of the overall samples of clauses. The hypothesis would be sustained if the mean values for the variables in particular clause type clusters differ significantly from the mean values shown in Tables 96. It would also strengthen the hypothesis if the standard deviations of the variables for particular clause type clusters are less than the standard deviation of the overall sample. As was done with the analysis of Hebrew, in the tables in the present chapters I have marked with an asterisk those standard deviation figures which are greater than those of the overall sample found in Table 96.

Principal Component Analysis

As with the analysis of Hebrew, the first step of the analysis of Moronene clause types is to carry out principal component analysis, calculating weightings of the original variables, called PCA loadings, to derive a new set of independent variables, called PCA scores. Each PCA score is a linear combination of the original variables using different PCA loadings. Besides having the property of not being correlated with one another, these PCA scores also have a more normal distribution than the original variables. Each PCA score can be related to the values of a certain combination of the original variables.

Table 97 shows the PCA loadings for three PCA scores derived from the four main variables for the 640 semantically or syntactically transitive clauses in the Moronene corpus.¹

¹ The principal component analysis provided a fourth PCA score, in addition to the three shown, but it showed little variation between the clause types, so is not shown here. In the initial figures given by the R statistical package, PC2 values for Moronene had negative values, just as was the case with directive discourse. Since polarity is arbitrary in principal component analysis, I have adjusted the Moronene PC2 values to positive polarity, so the polarity of the Moronene charts will be the same as the Hebrew ones.

TABLE 97

**PCA LOADINGS FOR FOUR VARIABLES IN MORONENE
CORPUS**

Variable	PC1	PC2	PC3
Actor topic persistence	0.5553013	0.3933045	0.4818318
Undergoer topic persistence	-0.5303362	0.4601261	-0.4217487
Actor anaphoric continuity	0.3897641	0.6552388	-0.4313920
Undergoer anaphoric continuity	-0.5083974	0.4519487	0.6355054

These PCA scores are interpreted the same way for Moronene as they were for Hebrew. To reiterate: PC1 measures the relative topicality of actor versus undergoer. It will have positive values when the overall topicality of the actor, as measured by topic persistence and anaphoric continuity, is higher than the overall topicality of the undergoer. It will have negative values when the overall topicality of the undergoer is higher than that of the actor.

PC2 measures overall topicality. It will have positive values when the overall topicality of both actor and undergoer is relatively high in relation to the total sample of clauses. It will have negative values when their overall topicality is relatively low.

The easiest PCA scores to interpret are PC1 and PC2, so it is illuminating to cluster commonly occurring basic clause types based on these two derived variables.

Clustering Common Moronene Clause Types

Figure 7 shows all basic clause types from the Moronene corpus with a sample size of nine or more plotted according to the mean values of PC1 and PC2 for each clause type. There are fifteen such clause types.

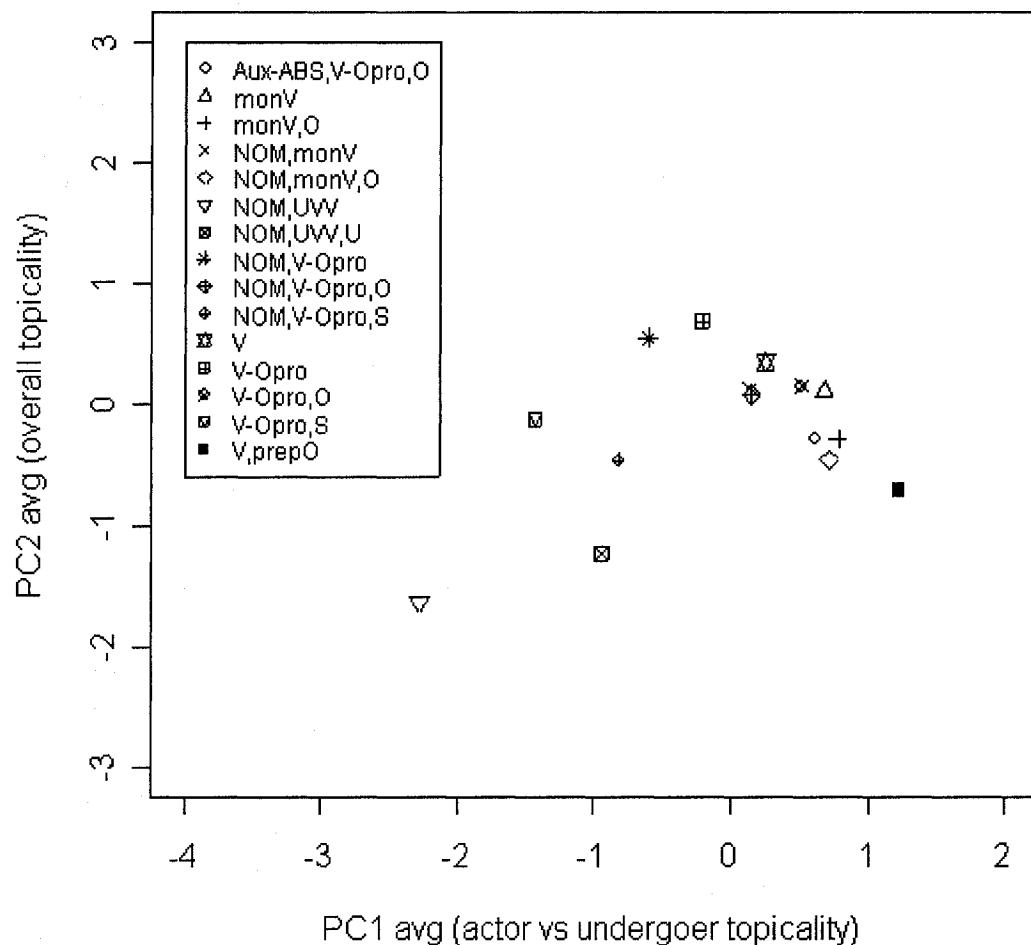


FIGURE 7
**MEANS OF PC1 AND PC2 FOR BASIC CLAUSE TYPES IN
 MORONENE WITH 9+ EXAMPLES**

I will present the data from Figure 7 by dividing the clause types into five small clusters, each consisting of two or three clause types, plus three isolates. Examination of Figure 7 shows four small clusters in the top right hand portion of the plot. The rest of

the clause types are scattered, but I will group the two clause types in the middle left as one cluster, since syntactically they are very similar. That leaves the three other clause types as isolates. These clusters and isolates are examined in the following subsections, starting on the right hand side of the chart and moving counterclockwise.

V,prepO Isolate

The **V,prepO** clause type represents an isolate, located in the right hand part of Figure 7. In terms of PCA scores, the mean PC1 score is 1.223, indicating that the actor is much more topical than the undergoer. The mean PC2 score is -0.713, indicating that overall topicality is low. Syntactically this clause type has no explicit subject and an oblique undergoer governed by a preposition. The following is an example, with the previous clauses provided to show the context:

28. tuuna te-pen-tade,
fall RES-INT-stand

me-tundo-ki i-wita pera ng-kolowiti-no,
INT/NF-heel-APPL at-land all LG-calf-3sPOS
V,prepO 'he fell standing up, and stamped the ground with his heel as deep as his
calf' (Kada151.323ab, Kada151.324)
 RRD Actor: 1 Und.: New TP Actor: 3 Und.: 0

The topicality measures for this clause type are shown in Table 98.

TABLE 98
TOPICALITY MEASURES FOR V,prepO IN MORONENE

n=9

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	78%	11%	High: 3-10	100%	0%
2-3	Med.: 9-9.5	22%	0%			
4-19	Low: 1-8	0%	0%	Low: 0-2	0%	100%
>19 Reactiv.	V. Low: 0.5	0%	11%			
20 New	V. Low: 0	0%	78%			
Standard Deviation		0.44	3.32	Standard Dev.	2.55	0.44
Mean Anaphoric Continuity		9.78	1.67	Mean Topic Pers.	5.33	0.22
Mean Anaphoric Continuity Difference		8.11		Mean Topic Persistence Dif.	5.11	

By both topicality measures the actor is much more topical than the undergoer. There is almost an absolute contrast in topicality, with none of the actors having low topicality by either measure, and virtually all the undergoers having low topicality. The topicality of the undergoer is demoted, with only 11% of undergoers having medium or high anaphoric continuity, and none having high cataphoric importance. This clause type clearly falls into the category of antipassive functional voice.

Antipassive Functional Voice Cluster

The next cluster, in the middle right hand part of Figure 7, is made up of the three clause types shown in Table 99, listed in decreasing order of mean PC1.

TABLE 99

**PC1 AND PC2 AVERAGES FOR ANTIPASSIVE
FUNCTIONAL VOICE CLUSTER IN MORONENE**

Clause Type	Occurrences	Mean PC1	Mean PC2
monV,O	42	0.781	-0.289
NOM,monV,O	17	0.714	-0.457
Aux-ABS,V-Opro,O	16	0.618	-0.281

In terms of PCA scores, the mean PC1 scores are between 0.6 and 0.8, indicating that the actor is more topical than the undergoer. The mean PC2 scores are between -0.2 and -0.5, indicating that overall topicality is slightly on the low side. Syntactically these three clause types share the features of having a pronominal or implicit subject and a nominal object. Two of them use the *moN-V* verb form. An example of each clause type is given below. When a previous clause is included to provide context, the actual example clause is in bold type in the Moronene.

29. da-ho-si modea-ho torea-no manu
 be-3sABS-CTR hear-3sABS crow-3sPOS chicken
Aux-ABS,V-Opro,O 'he heard the crow of a cock' (Maegani 306b)
 RRD Actor: 1 Und.: New TP Actor: 4 Und.: 0

30. da-hoo me'asa tempo **ka-ndo** po-weweū laica
 be-3sABS one time then-3pNOM AF-make house
koide hai uma
 that at farm
NOM,monV,O 'one time they made a house at that farm'
 (Colisi 025)
 RRD Actor: 1 Und.: New TP Actor: 7 Und.: 2

31. mo-wu-wukei sangka, mong-kakasi parewa
AF/NF-RED-open clothing AF/NF-choose clothing
monV,O (twice) 'she took out clothing, she chose garments' (Kada151.626, 627)
RRD Actor: 3 Und.: New TP Actor: 10 Und.: 1
RRD Actor: 1 Und.: 1 TP Actor: 10 Und.: 0

The topicality measures for this cluster of clause types are shown in Table 100.

TABLE 100

**TOPICALITY MEASURES FOR ANTI PASSIVE
FUNCTIONAL VOICE CLUSTER IN MORONENE**

n=75

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	88%	20%	High: 3-10	77%	11%
2-3	Med.: 9-9.5	8%	11%			
4-19	Low: 1-8	4%	11%	Low: 0-2	23%	89%
>19 Reactiv.	V. Low: 0.5	0%	3%			
20 New	V. Low: 0	0%	56%			
Standard Deviation		0.67	4.58*	Standard Dev.	2.91	1.40
Mean Anaphoric Continuity		9.82	3.71	Mean Topic Pers.	5.12	1.12
Mean Anaphoric Continuity Difference		6.11		Mean Topic Persistence Dif.	4.00	

By both topicality measures the actor is much more topical than the undergoer. Actors with high cataphoric importance exceed undergoers by a large margin: 77% - 11% = 66%. The topicality of the undergoer is demoted, with only 11% of undergoers having high cataphoric importance. Even though the demotion of the undergoer is not so clear when measured by anaphoric continuity, the large difference in topicality between actor and undergoer by both measures indicates that this cluster of clause types can be classified as antipassive functional voice.

First Active Functional Voice Cluster

The next cluster, in the upper right hand part of Figure 7, is made up of the two clause types shown in Table 101, listed in decreasing order of mean PC1.

TABLE 101

**PC1 AND PC2 AVERAGES FOR FIRST ACTIVE
FUNCTIONAL VOICE CLUSTER IN MORONENE**

Clause Type	Occurrences	Mean PC1	Mean PC2
monV	13	0.679	0.110
V-Opro,O	136	0.513	0.157

In terms of PCA scores, the mean PC1 scores are between 0.5 and 0.7, indicating that the actor is more topical than the undergoer. The mean PC2 scores are between 0.1 and 0.2, indicating that overall topicality is slightly on the high side. Syntactically these two clause types share the features of having no explicit subject. The following are examples:

32. ka-i daa penda mo-hule ana-no
then-3sNOM be again AF/NF-return child-3sPOS

mo-'ala

AF/NF-take

monV 'then her child would go back again and get some'

(Icadiu 034b)

RRD Actor: 1 Und.: New TP Actor: 8 Und.: 0

33. kuu-kuu-'o simpa, sasari-o laica
RED-cover.all-3sABS intersection wander-3sABS house
V-Opro,O (twice) 'he went to every intersection, he wandered to houses' (Kunini 084a, Kunini 084b)

RRD Actor: 1 Und.: New TP Actor: 9 Und.: 0

RRD Actor: 1 Und.: New TP Actor: 9 Und.: 2

The topicality measures for this cluster of clause types are shown in Table 102.

TABLE 102
**TOPICALITY MEASURES FOR FIRST ACTIVE
FUNCTIONAL VOICE CLUSTER IN MORONENE**

n=149

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	97%	34%	High: 3-10	83%	31%
2-3	Med.: 9-9.5	2%	13%			
4-19	Low: 1-8	1%	14%	Low: 0-2	17%	69%
>19 Reactiv.	V. Low: 0.5	0%	9%			
20 New	V. Low: 0	0%	31%			
Standard Deviation	0.26	4.60*		Standard Dev.	2.87	2.51
Mean Anaphoric Continuity	9.97	5.55		Mean Topic Pers.	5.97	2.03
Mean Anaphoric Continuity Difference	4.42			Mean Topic Persistence Dif.	3.94	

By both topicality measures the actor is much more topical than the undergoer.

Actors with high cataphoric importance exceed undergoers by a large margin: 83% - 31% = 48%. As measured by anaphoric continuity, actors have extremely high topicality, with 99% having high or medium anaphoric continuity. By both measures, undergoers retain considerable topicality: 47% have high or medium anaphoric continuity, and 31% have high cataphoric importance. Hence this cluster matches the category of active functional voice.

Second Active Functional Voice Cluster

The next cluster, in the middle part of Figure 7, is made up of the three clause types shown in Table 103, listed in decreasing order of mean PC1.

TABLE 103

**PC1 AND PC2 AVERAGES FOR SECOND ACTIVE
FUNCTIONAL VOICE CLUSTER IN MORONENE**

Clause Type	Occurrences	Mean PC1	Mean PC2
V	15	0.252	0.346
NOM,V-Opro,O	48	0.149	0.086
NOM,monV	20	0.140	0.134

In terms of PCA scores, the mean PC1 scores are between 0.1 and 0.3, indicating that the actor is slightly more topical than the undergoer. The mean PC2 scores are between 0.0 and 0.4, indicating that overall topicality is slightly on the high side. Syntactically these three clause types share the features of having a pronominal or implicit subject. The following are examples:

34. sampe me-tiihako mbue-do mebinta hai
 until INT/NF-descend grandparent-3pPOS from at
 sangia ari ko-dewata, te-tii **itai me-sisiwi**
 heaven finish have-gods INT-descend help INT/NF-coax
 V 'until their grandfather came down from heaven, from the land of the gods,
 came down to help coax [her]' (Maegani 335e)
 RRD Actor: 1 Und.: 3 TP Actor: 0 Und.: 7
35. ka-i raa renta-ho katora
 then-3sNOM thither pull-3sABS betelnut_container
 saporiti, be'u sang-ko-wulaa
 pinchbeck basket one-have-gold
NOM,V-Opro,O 'then he went over and pulled out a pinchbeck betel nut
 container, a golden basket' (Kada151.601)
 RRD Actor: 1 Und.: New TP Actor: 10 Und.: 0

36. **Ka-i po-'oli.** Po-'oli koie ica
 then-3sNOM AF-buy AF-buy that fish
 mo-koko-ndo'u e'e.
 STV-feel-drink water
NOM,monV 'Then he bought it. He bought that thirst fish.'
 (Icadiu 017)
 RRD Actor: 1 Und.: 1 TP Actor: 7 Und.: 5

The topicality measures for this cluster of clause types are shown in Table 104.

TABLE 104

**TOPICALITY MEASURES FOR SECOND ACTIVE
 FUNCTIONAL VOICE CLUSTER IN MORONENE**

n=83

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	75%	30%	High: 3-10	80%	42%
2-3	Med.: 9-9.5	16%	17%			
4-19	Low: 1-8	8%	19%	Low: 0-2	20%	58%
>19 Reactiv.	V. Low: 0.5	0%	4%			
20 New	V. Low: 0	1%	30%			
Standard Deviation		1.22	4.42	Standard Dev.	2.84	2.72
Mean Anaphoric Continuity		9.61	5.98	Mean Topic Pers.	5.30	2.77
Mean Anaphoric Continuity Difference		3.63		Mean Topic Persistence Dif.	2.53	

By both topicality measures the actor is considerably more topical than the undergoer. Actors with high cataphoric importance exceed undergoers by a large margin: $80\% - 42\% = 38\%$. As measured by anaphoric continuity, actors have quite high topicality, with 91% having high or medium anaphoric continuity. By both measures, undergoers retain considerable topicality: 47% have high or medium anaphoric continuity, and 42% have high cataphoric importance. Hence this cluster matches the category of active functional voice.

High Topicality Active Functional Voice Cluster

The next cluster, in the top middle part of Figure 7, is made up of the two clause types shown in Table 105, listed in decreasing order of mean PC1.

TABLE 105

PC1 AND PC2 AVERAGES FOR HIGH TOPICALITY ACTIVE FUNCTIONAL VOICE CLUSTER IN MORONENE

Clause Type	Occurrences	Mean PC1	Mean PC2
V-Opro	113	-0.208	0.684
NOM,V-Opro	48	-0.600	0.549

In terms of PCA scores, the mean PC1 scores are between -0.2 and -0.6, indicating that the undergoer is more topical than the actor. The mean PC2 scores are between 0.5 and 0.7, indicating that overall topicality is high. Syntactically these two clause types share the features of having a pronominal or implicit subject and a verb with suffixed pronominal object. The following are examples:

37. nde'e wosu n-taa-'o, rasai m-ponae-ho
 indeed whip LG-sword-3sABS flog LG-saber-3sABS
V-Opro (twice) 'indeed he whipped him with his sword, flogged him with his saber' (Kada151.265, Kada151.266)

RRD Actor: 1 Und.: 1 TP Actor: 8 Und.: 4
 RRD Actor: 1 Und.: 1 TP Actor: 7 Und.: 3

38. **ka-ndo raa leha-a**, i'ira polele-e
 then-3pNOM thither lie-3sABS they place-3sABS

pong-kaa-ha-ndo wembe, senona-no kadadi
 AF-eat-LOC-3pPOS goat lair-3sPOS animal
NOM,V-Opro 'then they went over and laid him down, they placed him in a goat's feeding trough, an animal's lair' (Kunini 097a)
 RRD Actor: 1 Und.: 1 TP Actor: 1 Und.: 7

The topicality measures for this cluster of clause types are shown in Table 106.

TABLE 106
**TOPICALITY MEASURES FOR HIGH TOPICALITY
ACTIVE FUNCTIONAL VOICE CLUSTER IN MORONENE**

n=161

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	88%	60%	High: 3-10	81%	61%
2-3	Med.: 9-9.5	7%	20%			
4-19	Low: 1-8	5%	12%	Low: 0-2	19%	39%
>19 Reactiv.	V. Low: 0.5	0%	1%			
20 New	V. Low: 0	0%	7%			
Standard Deviation	0.98	2.77		Standard Dev.	2.82	2.95*
Mean Anaphoric Continuity	9.75	8.77		Mean Topic Pers.	5.35	3.85
Mean Anaphoric Continuity Difference	0.98			Mean Topic Persistence Dif.	1.50	

By both topicality measures the actor is more topical than the undergoer. Actors with high cataphoric importance exceed undergoers by a rather small margin: 81% - 61% = 20%. As measured by anaphoric continuity, actors exceed undergoers in topicality by a similar small margin, with 95% of actors having high or medium anaphoric continuity versus 80% of undergoers. By both measures, undergoers retain high topicality. Hence this cluster matches the category of active functional voice. What distinguishes it from the other two active functional voice clusters is the relatively high undergoer topicality. This is why I label it high topicality active. In this feature it is rather similar to the semi-active functional voice clusters found in Hebrew (Tables 18 and 28). That is why it is further to the left on the plot in Figure 7 than the other active functional voice clauses.

Inverse Functional Voice Cluster

The next cluster, in the middle left hand part of Figure 7, is made up of the two clause types shown in Table 107, listed in decreasing order of mean PC1.

TABLE 107

**PC1 AND PC2 AVERAGES FOR INVERSE FUNCTIONAL
VOICE CLUSTER IN MORONENE**

Clause Type	Occurrences	Mean PC1	Mean PC2
NOM,V-Opro,S	13	-0.818	-0.463
V-Opro,S	13	-1.432	-0.130

In terms of PCA scores, the mean PC1 scores are between -0.8 and -1.5, indicating that the undergoer is significantly more topical than the actor. The mean PC2 scores are between -0.1 and -0.5, indicating that overall topicality is rather low. Syntactically these two clause types share the features of having a nominal subject and a verb with a suffixed pronominal object. The following are examples:

39. ka-i kaa-hira yo ica
 then-3sNOM eat-3pABS ART fish
NOM,V-Opro,S 'then the fish ate them' (Icadiu 303)
 RRD Actor: New Und.: 1 TP Actor: 0 Und.: 0

40. ka-i tealo **anu-o** **tina-no**
 then-3sNOM pass address-3sABS mother-3sPOS

hi daa mo-turi
 COMPL be INT/NF-sleep
V-Opro,S 'then her mother appeared and spoke to her when she was sleeping'
 (Icadiu 215b)
 RRD Actor: 1 Und.: 10 TP Actor: 4 Und.: 8

The topicality measures for this cluster of clause types are shown in Table 108.

TABLE 108
**TOPICALITY MEASURES FOR INVERSE FUNCTIONAL
VOICE CLUSTER IN MORONENE**

n=26

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	46%	62%	High: 3-10	50%	50%
2-3	Med.: 9-9.5	15%	23%			
4-19	Low: 1-8	12%	8%	Low: 0-2	50%	50%
>19 Reactiv.	V. Low: 0.5	12%	4%			
20 New	V. Low: 0	15%	4%			
Standard Deviation	4.27*	2.72		Standard Dev.	2.82	2.78
Mean Anaphoric Continuity	7.02	8.85		Mean Topic Pers.	3.15	3.85
Mean Anaphoric Continuity Difference	-1.83			Mean Topic Persistence Dif.	-0.70	

By both topicality measures the undergoer is more topical than the actor. With respect to topic persistence, both actors and undergoers have an equal proportion of high and low topic persistence, but the mean topic persistence difference has a small negative value, indicating the undergoer is slightly more topical. Actors retain considerable topicality by both measures. Hence this cluster matches the category of inverse functional voice.

NOM,UVV,U Isolate

The **NOM,UVV,U** clause type represents an isolate, located in the middle bottom part of Figure 7. In terms of PCA scores, the mean PC1 score is -0.946, indicating that the undergoer is more topical than the actor. The mean PC2 score is -1.218, indicating that overall topicality is quite low. The following is an example:

41. ka-i tibo die te-'o-'angka Colisi
 then-3sNOM sudden this RES-RED-lift Colisi
NOM,UVV,U 'then Colisi was suddenly lifted up' (Colisi 118a)
 RRD Actor: 1 Und.: 1 TP Actor: 7 Und.: 10

The topicality measures for this clause type are shown in Table 109.

TABLE 109

TOPICALITY MEASURES FOR NOM,UVV,U IN MORONENE

n=12

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	42%	33%	High: 3-10	42%	42%
2-3	Med.: 9-9.5	8%	8%			
4-19	Low: 1-8	0%	25%	Low: 0-2	58%	58%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	50%	33%			
Standard Deviation		5.18*	4.54*	Standard Dev.	3.69*	3.81*
Mean Anaphoric Continuity		4.96	5.79	Mean Topic Pers.	3.17	3.17
Mean Anaphoric Continuity Difference		-0.83		Mean Topic Persistence Dif.		0.00

The topicality measures give a mixed message with regard to the relative topicality of the actor and the undergoer. Although more actors than undergoers have medium or high anaphoric continuity (50% versus 41%), there are also more actors than undergoers with very low anaphoric continuity (50% versus 33%). As measured by the mean anaphoric continuity difference, undergoers are slightly more topical than actors. As measured by cataphoric importance, actors and undergoers have exactly the same topicality. By both measures, significant numbers of both actors and undergoers have high topicality, and significant numbers have low topicality. The high standard deviations for every topicality measure indicate that the values have a wide spread. This clause type cannot be characterized according to any functional voice category.

NOM,UVV Isolate

The NOM,UVV clause type represents an isolate, located in the bottom left hand part of Figure 7. In terms of PCA scores, the mean PC1 score is -2.275, indicating that the undergoer is much more topical than the actor. The mean PC2 score is -1.627, indicating that overall topicality is quite low. Syntactically this clause type is characterized by an undergoer voice verb and a pronominal undergoer subject. The following is an example:

42. ka-ndo po-weweuhakono pua wulu,
 then-3pNOM AF-make-3sBEN blowpipe bamboo
 na-i o-'oleo-hako **ka-i** **te-wotu**
 NEG-3sNOM RED-day-INST then-3sNOM RES-break
 NOM,UVV 'then they made him a bamboo blowpipe, but it wasn't a day before
 it was broken' (Maegani 187)
 RRD Actor: 1 Und.: 0 TP Actor: 1 Und.: 0

The topicality measures for this clause type are shown in Table 110.

TABLE 110
TOPICALITY MEASURES FOR NOM,UVV IN
MORONENE

n=11

Anaphoric Continuity				Cataphoric Importance		
Referential Distance	Anaphoric Continuity	Actor	Undergoer	Topic Persistence	Actor	Undergoer
1	High: 10	9%	55%	High: 3-10	9%	55%
2-3	Med.: 9-9.5	18%	36%			
4-19	Low: 1-8	0%	0%	Low: 0-2	91%	45%
>19 Reactiv.	V. Low: 0.5	0%	0%			
20 New	V. Low: 0	73%	9%			
Standard Deviation	4.44*	2.96	Standard Dev.	1.85	3.54*	
Mean Anaphoric Continuity	2.59	8.91	Mean Topic Pers.	0.73	4.18	
Mean Anaphoric Continuity Difference	-6.32		Mean Topic Persistence Dif.	-3.45		

By both topicality measures the undergoer is much more topical than the actor. Undergoers with high cataphoric importance exceed actors by a large margin: 55% - 9% = 46%. The topicality of the actor is demoted, with all but 27% having very low anaphoric continuity, and only 9% having high cataphoric importance. Hence this clause type matches the category of passive functional voice.

Theoretical Implications

In this chapter I have clustered fifteen frequently occurring basic clause types in Moronene using principal component analysis and classified them in terms of functional voice categories. In doing this, I have tried not to impose the theoretical categories I have posited on data that does not match those categories. This is why I initially grouped them in small clusters according to how they appeared on the plot, even though it turned out that three of those small clusters fell into the category of active functional voice.

As was the case with Hebrew, the active functional voice clusters are syntactically rather diverse. They all share the feature of having a pronominal or implicit subject, but they vary in the verb form and the form of the object. This is explicable in that active functional voice is the unmarked category in the functional voice system. As such, it does not need a distinctive syntactic marking as much as the other marked categories do.

The results reported above are relevant to the problem of the classification of *moN-V* constructions in terms of syntactic and functional voice categories, as discussed in Chapter 7. It can be seen that *moN-V* clauses do not fall into one functional voice category. Some are classified as antipassive functional voice, namely, **monV,O** and **NOM,monV,O**; others are classified as active functional voice, namely **NOM,monV** and **monV**. This represents additional evidence that the *moN-* prefix does not function like a prototypical antipassive morpheme.

It is somewhat paradoxical that those clause types which have an explicit nominal object, and are therefore clearly transitive, fall into the antipassive category, which one expects to have low transitivity. In contrast to this, those clause types with implicit undergoers, and hence arguably syntactically intransitive, fall into the active functional voice category. In these latter two clause types, **NOM,monV** and **monV**, the undergoers are coded by zero anaphora. To explain this paradox, one needs to distinguish between the two common functions of zero anaphora, as mentioned in the discussion of implicit undergoer clauses in Chapter 4. Zero anaphora is typically used either for discourse-active referents which have been mentioned in the immediately previous clauses or else for unidentifiable unimportant referents. An examination of the referential distance figures for undergoers in **NOM,monV** and **monV** clauses reveals that 55% of the undergoers have a referential distance of one. Only 24% of the undergoers are new referents. This indicates that in a majority of cases, these two clause types are used when both actor and undergoer have relatively high topicality, thus falling into the category of active functional voice.

At the end of Part II, I stressed that the analysis of Hebrew showed it was more insightful to analyze topicality and continuity in relation to clause types, rather than merely in relation to contrasting verb forms. The above discussion shows that what is true of Hebrew is also true of Moronene.

Conclusion of Part III

In Part III, I have analyzed functional voice categories in Moronene narrative. Some adjustments to the methodology were necessary to accommodate particular features of Moronene syntax. Some additional features are used to define clause types, namely, the choice of affix or clitic set used to mark the actor, the presence of an action focus prefix, and the use of undergoer voice verb forms. Unlike Hebrew, the selection of

clauses for analysis includes participial clauses. I restricted the analysis to narrative texts.

I have used principal component analysis to cluster common clause types. Most of the clusters identified are similar to those found in Hebrew, namely antipassive functional voice, active functional voice, inverse functional voice, and passive functional voice.

PART IV

MATCHING CLAUSE TYPES IN TRANSLATION

In Part IV, I compare the results of the separate analyses of Hebrew and Moronene as set out in Parts II and III. In Chapter 10, I match the clause type clusters identified for Hebrew in Chapter 3 with those identified for Moronene in Chapter 9. For each Hebrew clause type cluster, I identify Moronene matching clause types, that is, those which are most similar to the Hebrew cluster in their topicality patterns. Other common Moronene clause types are referred to as “non-matching clause types.” I then make a comparison of a Biblical Hebrew text and its translation into Moronene to see to what extent particular Hebrew clause types have been translated by Moronene matching clause types. This comparison is used to identify clauses in the existing translation that are potentially unnatural, and hence should be evaluated for possible revision.

In Chapter 11, I describe how the analysis of functional voice can be applied to the task of improving the quality of a translation. I report the results of a revision process by Moronene translators based on their evaluation of the naturalness of non-matching clause types and rare clause types used in the Moronene translation. I discuss various categories of clauses that needed to be revised and those that were not revised.

CHAPTER 10

MATCHING HEBREW AND MORONENE CLAUSE TYPES

In Part II, I presented an analysis of topicality patterns and functional voice categories for clause types in Biblical Hebrew. In Part III, I presented a similar analysis and classification of Moronene clause types. In this chapter, I match and compare Hebrew and Moronene clause types based on the similarity of topicality patterns. In particular, I focus on the twenty-four common Hebrew narrative clause types which were assigned to various functional voice clusters in Chapter 3. These are compared to the fifteen common Moronene narrative clause types which were assigned to various functional voice clusters in Chapter 9. The purpose of the comparison is to explore the relevance of attempting to match the topicality patterns of clause types when choosing translation equivalents.

I carry out the comparison of Moronene and Hebrew clause types in two stages. First, I use the results of clustering based on principal component analysis to match common Moronene and Hebrew clause types. Second, I examine a Moronene translation of portions of the Biblical Hebrew text to see to what extent matching Moronene clause types are used as translation equivalents of particular Hebrew clause types.

Matching of Clause Types

Since the Moronene corpus is narrative, comparison of Hebrew and Moronene clause types should be restricted to narrative. Therefore the Hebrew directive discourse corpus will not be used.¹

A comparison of Figures 5 and 7 show that both Hebrew and Moronene have a large number of clause types stretching in a band from the antipassive region of the charts to the inverse region. Relatively few clause types are scattered in the lower part of the charts. This can be interpreted to mean that in both languages, the common clause types are carrying a similar functional load in terms of signaling differences in topicality. I will restrict the matching exercise to those Hebrew clause types in the upper part of the chart, where the large number of clause types increases the chances of finding a good match. Specifically this means that the Hebrew clause types to be compared are those from the following narrative clusters: antipassive functional voice cluster (Table 13), active functional voice cluster (Table 15), and semi-active functional voice cluster (Table 17). This makes up a total of eighteen Hebrew clause types to be compared with Moronene clause types.

There are a number of possible approaches which could be used to match Hebrew clause types with Moronene clause types having similar topicality patterns. One approach would be to use quantitative techniques to identify which Moronene clause type is closest to a particular Hebrew clause type as measured by certain variables. One way to do this would be to measure the distance between Hebrew clause types and Moronene clause types in Hebrew PCA space. In order to do this, one would use the Hebrew narrative PCA loadings to adjust the Moronene data. At the same time, both sets of data would be centered and scaled. The effect of this would be to make both sets of data have

¹ Even though I do not use the Hebrew directive discourse corpus for the comparison with Moronene, an analysis of topicality patterns in directive discourse is important to give a complete picture of functional voice categories in Hebrew, especially in relation to *weqatal* and imperative verb forms, which seldom occur in narrative.

the same degree of spread. This would enable one to measure the difference using Euclidean distance.²

If the clustering procedures used in Chapters 3 and 9 had not resulted in similar clause clusters for Hebrew and Moronene, it would probably be necessary to use some such statistical technique to identify matching clause types. But in fact there is a strong similarity between the clause type clusters for the two languages, so for the purposes of the present research, it should be adequate to directly match Hebrew clause type clusters with Moronene clause type clusters having similar characteristics. The results of this procedure are displayed in Table 111. For each Hebrew clause type cluster, I list the Moronene clause type clusters with similar characteristics, together with the individual clause types making up that cluster. The order in which the clause types are listed has no significance; the matching is from cluster to cluster, not clause type to clause type.

² This technique was suggested to me by Marie South.

TABLE 111
MATCHING HEBREW AND MORONENE CLAUSE TYPE
CLUSTERS

Hebrew cluster	Hebrew clause types	Moronene cluster	Moronene clause types
Antipassive (Table 13)	qatal,O O,yiqtol yiqtol,O wayyiqtol,O O,qatal qatal,etO	Antipassive (Table 99)	monV,O NOM,monV,O Aux-ABS,V-Opro,O V,prepO (Table 98)
Active (Table 15)	wayyiqtol,S,O wayyiqtol,etO wayyiqtol,prepO wayyiqtol,S,etO wayyiqtol,S wayyiqtol wayyiqtol,S,prepO	First Active (Table 101)	monV V-Opro,O V NOM,V-Opro,O NOM,monV V-Opro
Semi-active (Table 17)	wayyiqtol,etOpro yiqtol-Opro wayyiqtol-Opro qatal-Opro wayyiqtol-Opro,S	High Top. Active (Table 105) Inverse (Table 107)	NOM,V-Opro NOM,V-Opro NOM,V-Opro,S V-Opro,S

It is quite straightforward to match the Hebrew antipassive functional voice cluster with the Moronene antipassive functional voice cluster, since both of them clearly have similar topicality patterns. The same goes for the match between the two active functional voice clusters. The Moronene **V,prepO** isolate is grouped with the other antipassive functional voice clauses, since it is also classified as antipassive.

There is not such a close match with regards to the Hebrew semi-active functional voice cluster. In terms of Givón's functional voice categories it lies on the borderline between active functional voice and inverse functional voice. Among the common Moronene clause types, there was no cluster occurring on that borderline. But there are two clusters on either side of the borderline. The high topicality active functional voice cluster in Moronene is somewhat different from the other two active clusters in that it has some characteristics similar to the semi-active functional voice cluster, namely very high undergoer topicality. The Moronene inverse functional voice cluster lies on the other side of the borderline. Therefore if we want to match the clusters which have the greatest similarity to each other, even if not matching exactly, it seems best to group these two Moronene clusters with the Hebrew semi-active functional voice cluster.

Comparison of Translation Equivalents

Now that I have identified Moronene clause types which have the same or similar functional voice characteristics to common Hebrew clause types, I am in a position to compare the two in a Moronene translation of portions from the Hebrew Bible. Myhill and Xing (1993) did a similar comparison between Hebrew and the Chinese translation of Genesis with respect to clauses with fronted objects.

This issue can also be related to discussions of how one should translate linguistic devices which signal various types of prominence. Kathleen Callow (1974:49-68) and Mildred Larson (1984:405-420) distinguish three types of prominence: thematic prominence, focus prominence, and emphatic prominence. The first two types can be related to the topicality patterns investigated in this dissertation, that is, the relative degree of topicality of actor and undergoer.

Larson defines thematic prominence as "the information which is prominent because it contributes to the progression of the narrative or argument of the text. The

major events, major procedures and major themes are all part of thematic prominence" (1984:407). Besides these, she also gives an example of thematic prominence in relation to a participant:

In English, the use of the **pronoun** preceding the main noun (or name) is used to show the thematic nature of the participant. Notice the following example from Longacre (1977:5):

1. When *he* came to power, *Augustus*...
2. When *Augustus* came to power...

The meaning is the same. However, in the first, *Augustus* is clearly thematic. The information to follow will be about *Augustus* (Larson 1984:415, emphasis original).

If I describe the above example using the terminology of this dissertation, I could say that the use of the pronoun preceding the main noun signals the high topicality of the actor. The fact that the information to follow will be about this actor can be expressed by saying that the actor has high cataphoric importance; its topic persistence will be high. Hence I can equate high topicality in terms of topic persistence with the concept of the thematic prominence of a participant.

Larson describes focus prominence as follows:

It will choose some part of the material and say, "This is of special importance!"...It marks one participant as more important than another at certain points in the narrative, or one procedure as the crucial one in a procedural text. **Focus** does not carry over a long portion of text. For example, if a participant is in focus, this **focus** may need to be renewed periodically throughout the text (1984:407).

It is important to realize that the way focus is defined by Larson is completely different from Lambrecht's concept of focus which is adopted in this dissertation. The former refers to any type of material which is given temporary prominence in a discourse; the latter to a semantic component of a proposition corresponding to a syntactic domain in a sentence, and conveying information which is different from the presupposition of the proposition. Lambrecht's concept of focus has no necessary relation with prominence.

When Larson's concept of focus prominence is applied to participants, it can be related to the topicality patterns explored in this dissertation. Larson gives the following example:

There is often a natural **focus** which would require special devices to change. For example, the participant which is the AGENT has natural **focus** in English narrative. But if, at a certain point in the discourse, a participant who is the AFFECTED were to be thrown into **focus**, special devices, such as change of order, would be needed to indicate this change of **focus** (1984:407).

If we describe the above example using the terminology of this dissertation, we could say that active functional voice represents the unmarked topicality pattern (Larson's natural focus), with actor somewhat more topical than undergoer. Inverse and passive functional voices are special devices to signal that the undergoer is more topical, in Larson's terms "thrown into focus."

Seen in this context, efforts to match topicality patterns while choosing appropriate clause types for translation equivalents can be regarded as one element in the endeavor "to investigate the usage and significance of all types of prominence, and thus more accurately control their use in translation" (Callow 1974:50). The importance of this endeavor is underlined by Larson:

The greatest amount of mismatch between languages probably comes in the area of devices which signal cohesion and prominence. Only the correct receptor language devices will result in a natural and easily understood translation. A misrepresentation of prominence in the translation can distort the meaning intended by the author, as well as make the translation sound very unnatural (1984:420).

Similarity of Topicality Patterns

What do I hope to achieve by endeavoring to match topicality patterns while choosing appropriate clause types for translation equivalents? If the translation of a particular clause is accurate, it means that the reader of that clause in the target language

will be able to draw many inferences similar to the inferences drawn by a reader of the original language. All the various features of each clause function as signals or clues which help the reader draw the appropriate inferences. The focus of this dissertation is to analyze those features which help the reader draw inferences with regard to the relative topicality of the actor and undergoer. One may therefore propound the following hypothesis: if a Hebrew clause type associated with a certain topicality pattern is translated by a Moronene clause type associated with a similar topicality pattern, there is a good chance the Moronene reader can draw similar inferences with regard to topicality as those drawn by a Hebrew reader. The corollary of this hypothesis is that if a Hebrew clause type associated with a certain topicality pattern is translated by a Moronene clause type associated with a quite different topicality pattern, there is a good chance the Moronene reader may draw quite different inferences with regard to topicality than those drawn by a Hebrew reader.³

Although it seems desirable to try to match clause types with respect to topicality patterns in order to improve the quality of a translation, it does not, however, follow that in a good translation, Hebrew clauses should always be translated by Moronene clause types having the same or similar topicality pattern. There are several reasons why a mismatch of clause types with regard to topicality patterns may occur in a good translation. First, topicality patterns are only one relatively minor semantic feature conveyed by clauses. It may well often be the case that in order to accurately convey other semantic features of the source language clause, it is necessary to have a mismatch in terms of topicality patterns. Or it may be that in a particular context a Moronene clause type with different topicality patterns is more natural than one which has a similar topicality pattern to the source language clause. Good translators know that one may

³ See Ernst-August Gutt (1992) for a discussion of the importance of drawing inferences in the interpretation of translated texts. Gutt uses the theoretical framework of Relevance Theory (Sperber and Wilson 1986) to explain human communication, including translation, in contrast to a code model.

sometimes need to change passive clauses into actives, or vice versa, for the sake of naturalness. In cases where using a passive causes problems in the receptor language, Richard Blight advises translators, "Determine why the passive was used in the source language and try to achieve the same purpose in the receptor language while using active verbs" (1995:43).

Second, the topicality pattern tables presented in the previous chapters make it clear that the correlation of certain clause types with certain topicality patterns is seldom absolute. There is usually a minority of clauses which go against the general pattern. For example, in a clause type classified as antipassive functional voice, one expects the actor to have high topicality and the undergoer to have low topicality. But an examination of Table 14 reveals that in the antipassive functional voice cluster in Hebrew narrative, ten percent of the clauses have undergoers with high anaphoric continuity, and one percent have actors with very low anaphoric continuity. If one were translating such a clause, it might be that using a Moronene clause type with antipassive functional voice might not be the best match with respect to the atypical topicality pattern of that particular Hebrew clause.

Third, efforts to translate using clause types with matching topicality patterns are based on the assumption that the same actor and undergoer which are present in the source language clause are also present in the target language clause. But it may be that as a result of the need to change from metaphorical to non-metaphorical language, or the desire to use a natural idiom in the target language, or some other such major adjustment, there is no longer an identity of participants in the source and target language clauses. A common example of this is when one clause in Hebrew is transformed into two separate clauses in Moronene, due to the Moronene preference for serial clauses. In such cases, it is rather complicated to try to work out how the topicality pattern of one clause should be matched with the topicality patterns of two clauses.

If the Moronene clause used to translate the Hebrew clause is from the same functional voice cluster, we can consider that there is a similarity of topicality patterns. It is when the Moronene clause is from a non-matching cluster that further questions can be raised. Why is there a mismatch of topicality patterns in this case? It could be that one of the factors mentioned above has necessitated a choice of a clause type with a different topicality pattern for the sake of accuracy, or naturalness, or clarity. But it is also possible that this particular case represents a less than ideal choice of target language clause type. Hence it would be beneficial for the translator to evaluate whether a change of clause type to one from a matching cluster would improve the translation. If using such a Moronene clause type does not result in inaccuracy or unnaturalness, then it might well be advisable to revise the translation in that way. Such revisions would be another small increment in the challenging task of producing translations which not only transfer the meanings of words or clauses in an isolated fashion, but which also seek to understand and communicate features of the discourse structure of source texts, signaling them in appropriate ways in the target language, so that the target audience has a better and more delicately adjusted set of linguistic data from which they can draw appropriate inferences and receive a message closer to that which was intended by the original author.

Naturalness and Rare Clause Types

If the translation uses an uncommon clause type, it may well represent a good match of topicality patterns, or it may not. We don't know, because I have not been able to measure the topicality pattern of uncommon clause types. But the very fact that a certain clause type is rather rare raises the possibility that it may be rather unnatural. Hence it may be worth evaluating clauses in the rare category and asking whether a more common clause type would represent a more natural translation.

When selecting a clause type from the target language to translate a particular clause type found in a source text, there is a potential conflict between literal translation and naturalness. If one is aiming for a translation with a very high degree of naturalness, a possible way to measure naturalness in terms of choice of clause types would be to count the frequency of various clause types in natural native-speaker authored texts in the target language. Clause types could be classified according to their frequency: common clause types having high frequency, clause types with medium frequency, and rare clause types with low frequency. If the translation has a similar frequency distribution of clause types to that found in the native-speaker authored texts of the same genre, then it could be considered as having a high degree of naturalness with respect to clause type selection. On the other hand, if many clauses are translated rather literally from the source language with little regard for naturalness, it is likely that the translation would end up with many clauses from clause types which are rare or even never found in natural texts of the target language. A relatively high proportion of rare clause types in a translation would be an indicator that the degree of naturalness may be low. Katherine Barnwell gives the following advice to translators, "When you have discovered the natural pattern of use in your language, use the form in the natural way in the translation. If you observe that it is not a very frequent form, then beware of using it too much in the translation" (1986:134).

Let me illustrate this factor from Hebrew and Moronene. In Hebrew, a relatively high frequency of transitive clauses have both a nominal subject and a nominal object. Out of the 1917 transitive clauses making up the two Hebrew corpora, 316 clauses (16%) fall into this category. Out of the fifty-one common Hebrew clause types from the two Hebrew corpora found in Figures 5 and 6, nine have a nominal subject and object.

In contrast to this, in Moronene relatively few transitive clauses have both a nominal subject and a nominal object. Out of the 640 clauses in the Moronene corpus, only twenty-five (4%) fall into this category. Out of the fifteen common Moronene

clause types found in Figure 7, none have a nominal subject and object. As an alternative to clause types with both nominal subject and object, Moronene often uses serial clauses. Note the following example found in the Moronene translation of a Hebrew clause with both a nominal subject and object.

וַיַּעֲבֹדוּ מִצְרָיִם אֶת-בָּנֵי יִשְׂרָאֵל בְּפְרָךְ
 'And the Egyptians made
 the children of Israel to serve with rigour'
wayyiqtol,S,etO (Ex. 1:13, KJV)

Ka-ndo mo-soko ko'ira miano Mesir,
 then-3pNOM STV-cruel those person Egypt
NOM,V,S 'then the Egyptians were cruel'

pakisaa-'ira m-po-hedo ko'ira miano Israil.
 force-3pABS PL-AF-work those person Israel
V-Opro; monV,S '[and] forced the Israelites to work'

In the above example, the Moronene translation uses three clauses to translate one Hebrew clause. The nominal subject occurs with an initial stative verb, which is followed by a transitive verb with a pronominal object, and the nominal object of the Hebrew clause becomes the subject of a transitive verb in the third clause.

If one found that a relatively large proportion (much more than 4%) of clauses in the Moronene translation had both nominal subjects and objects, one would suspect that this was a result of literal translation of such clause types in Hebrew without making the sort of adjustment illustrated above.

Categorizing Clause Type Matches

The discussion above suggests two useful approaches which can be used to apply the present research in order to evaluate and improve the Moronene translation of Biblical Hebrew texts. The first is to evaluate to what extent the functional voice of clause types used in the translation match the functional voice of the original Hebrew clauses. Despite the effect of the confounding variables described above, I assume that

for a large number of clauses, efforts to match topicality patterns while translating may assist the target language reader to gain a similar understanding of the text as that gained by the source language reader, and as that intended by the source language author.

The second approach is to evaluate to what extent Moronene clause types used in the translation are relatively common clause types. When a rare clause type is used, it is worth evaluating whether that clause type is the most natural to use in that particular context, or whether revising the translation by using a more common clause type would increase the naturalness. For this purpose, I have categorized Moronene clause types according to three degrees of frequency of occurrence. Common clause types are those which occur at least nine times in the Moronene corpus, and consist of the fifteen clause types listed in Figure 7. Medium-frequency clause types are those which occur at least four times in the Moronene corpus, and consist of the following fourteen clause types: **ABS,NOM,V-Opro,O; ABS,V-Opro; Aux-ABS,monV,O; monV,S; NOM,monV,S; NOM,V; NOM,V-Opro,S,O; UVV; UVV-ABS,U; UVV-POS; S,monV,O; S,V-Opro; U,UVV; V-Opro,O,S.**

If a major adjustment has resulted in a significant change in the cast of participants in the Moronene clause as compared to the Hebrew clause, then there is little point in trying to see if the clause types match in terms of functional voice, since the actor and/or undergoer are different. Hence I have eliminated this category from the evaluation.

In the following section I will present the results of comparing the Moronene translation of certain biblical portions with the Hebrew source text. By this comparison I aim to answer the following questions for each of the common Hebrew clause types compared:

1. What percent of the Hebrew clauses are translated by common Moronene clause types from the antipassive functional voice cluster? (Anti.)

2. What percent of the Hebrew clauses are translated by common Moronene clause types from an active functional voice cluster? (Active)
3. What percent of the Hebrew clauses are translated by common Moronene clause types from the high topicality active functional voice cluster or the inverse functional voice cluster? (Inv.+)
4. What percent of the Hebrew clauses are translated by medium-frequency Moronene clause types, the topicality patterns of which I have been unable to measure? (Med.)
5. What percent of the Hebrew clauses are translated by rare Moronene clause types, the topicality patterns of which I have been unable to measure? (Rare)
6. What percentage of the Hebrew clauses have been translated by Moronene clauses in which the identity of the Hebrew actor and undergoer is not preserved due to major semantic or syntactic adjustments, resulting in a significantly different clause structure? (Diff.)

The word in parentheses after each question is used as a column label for the appropriate percentages in Table 112. For the most part I have restricted the comparison to clauses which are in the Hebrew narrative corpus analyzed in this dissertation. Since the Moronene translation of the Old Testament is still underway, only certain portions of this corpus have been translated, namely portions dealing with the life of Moses and David. These portions include selected passages from Exodus 1-19 and 1 Samuel 16-31.⁴ In order to be included in Table 112, there must be a minimum of ten clauses which can be compared, that is, at least ten clauses must occur in portions for which a Moronene translation exists. Only seven clause types out of the eighteen in Table 111 have ten or more clauses. In order to increase the numbers, for four of the clause types which had at least seven clauses available to be compared, I looked for additional clauses of those types in Genesis, since the whole of Genesis is available in Moronene, although it lies outside the narrative corpus under investigation. The column labeled "n" in Table 112

⁴ The Moronene translations of Exodus and 1 Samuel are parts of Scripture portions on the life of Moses and David. The passages included in these Moronene translations are: Exodus 1 – 5, 7:8-13, 11:1 – 12:42, 13:17-22, 14:1 – 17:7, 19:1 – 20:24, 1 Samuel 16:1-13, 17:1 – 19:18, 20:1 – 22:5, 24:1-22, 26:1-25, 31:1-6. At the time this research was done this translation was in third draft.

indicates the number of clauses in the Moronene translation which can be compared with Hebrew. An asterisk indicates that some of the clauses were taken from Genesis.

TABLE 112
MORONENE CLAUSE TYPE USED TO TRANSLATE
COMMON HEBREW CLAUSE TYPES

Clause type	n	Anti.	Active	Inv.+	Med.	Rare	Diff.
Antipassive:							
qatal,O	10*	20%	40%	-	-	20%	20%
wayyiqtol,O	24	33%	29%	-	4%	8%	25%
Active:							
wayyiqtol,S,O	15	7%	-	-	13%	40%	40%
wayyiqtol,etO	40	7%	42%	-	5%	20%	25%
wayyiqtol,prepO	15*	13%	53%	-	-	13%	20%
wayyiqtol,S,etO	74	3%	14%	1%	14%	46%	23%
wayyiqtol,S	11*	-	9%	9%	27%	27%	27%
wayyiqtol	11	-	64%	-	-	27%	9%
wayyiqtol,S,prepO	12	-	17%	8%	8%	67%	-
Semi-active:							
wayyiqtol-Opro	28	-	21%	61%	-	4%	14%
wayyiqtol-Opro,S	11*	-	-	9%	9%	45%	36%

If the figures in the antipassive, active, and inverse+ columns of Table 112 are compared, one can see the degree to which Hebrew clause types from a particular functional voice are predominately translated by Moronene clause types from a matching functional voice. For eight out of the eleven clause types, the percentage in the matching column is higher than the percentages in the two non-matching columns.⁵ This suggests

⁵ The three exceptions are: (1) **qatal,O**, for which the 40% figure in the non-matching active column exceeds the 20% in the matching antipassive column; (2) **wayyiqtol,S,O**, for which the 6% figure in the non-matching antipassive column exceeds the 0% in the active column; (3) **wayyiqtol,S**, for which the 9% in the matching active column is the same as the 9% in the non-matching inverse+ column.

that there is a reasonable degree of matching between Hebrew and Moronene functional voice in the Moronene translation.

Certain clause types have relatively high figures for rare clause types, in particular **wayyiqtol,S,O**, **wayyiqtol,S,etO**, and **wayyiqtol,S,prepO**. The fact that these three clause types have both a nominal subject and a nominal object adds to the suspicion that some of the rare clause types may have arisen due to the influence of the Hebrew clause structure on the choice of Moronene clause type. I confirmed this by a detailed examination of all the rare Moronene clause types used to translate these three Hebrew clause types. Out of these fifty-one Moronene clauses, forty-seven (92%) were clauses with both a nominal subject and object. The naturalness of these clauses will be investigated further below.

To give a better idea of how the clauses are classified, I present several examples below, illustrating a variety of clause types. The following are some examples of Hebrew clause types which were translated by a Moronene clause type from the same functional voice cluster:

וַיַּךְ בְּפֶלְשָׁתִים מֵאֲתִים אִישׁ
‘and killed two hundred Philistines.’
wayyiqtol,O [antipassive] (1 Sa. 18:27c, NIV)

ka-ndo m-pom-pepate rua etu miano Filistin,
then-3pNOM PL-AF-kill two hundred person Philistine
NOM,monV,O [antipassive] ‘then they killed two hundred Philistines’

וַיָּבֹא יְהוֹנָתָן אֶת־דָּוֹד אֶל־שָׁאָל
‘And Jonathan brought David to Saul,’
wayyiqtol,S,etO [active] (1 Sa. 19:7c, KJV)

Yahopo nde'e ka-i wawa-a i Daud hai Saul
next indeed then-3sNOM bring-3sABS PI David to Saul
NOM,V-Opro,O [active] ‘after that he brought David to Saul’

The following is an example of a Hebrew clause type which was translated by a Moronene medium-frequency clause type.

'Then he took his staff in his hand,'
wayyiqtol, O [antipassive] (1 Sa. 17:40a, NIV)

ka-i ala-a i Daud tuko-no
 then-3sNOM take-3sABS PI David staff-3sPOS
NOM,V-proO,S,O [medium] 'then David took his staff'

The following are some examples of Hebrew clause types which were translated by a Moronene clause type of a significantly different structure due to major adjustments in the translation process. In the first example the actor and/or undergoer are no longer the same; in the second and third examples one Hebrew clause has become two clauses in Moronene.

'And Saul lifted up his voice,'
wayyiqtol,S,O [active] (1 Sa. 24:16c, KJV)⁶

nang-kanahi-o i Saul
 SUB-say-3sABS PI Saul
V-ABS,S 'and Saul said'

'At a lodging place on the way,
 the LORD met Moses'
wayyiqtol-Opro,S [semi-active] (Ex. 4:24a, NIV)

Sawali hai laa sala todo-a-ndo m-po-turi,
 but at trunk way stop-LOC-3pPOS PL-INT-sleep

ka-i leu Alata'ala tepo-'awa-akono i Musa
 then-3sNOM come God REC-meet-3sBEN PI Moses
NOM,V,S; V,O 'but along the way at the place where they stopped to sleep,
 God came and met Moses'

'left the flock with a shepherd,'
wayyiqtol,etO [active] (1 Sa. 17:20b, NIV)

וַיִּטְשַׁח אֶת-הַצָּאן עַל-שָׁמֶר

⁶ In the Hebrew versification, this is 1 Sa. 24:17c.

ka-i pon-tena miano
then-3sNOM AF-command person

daga-i-'akono-'o domba-no ronga wembe-no
guard-APPL-3sBEN-3sABS sheep-3sPOS and goat-3sPOS
NOM,monV,O; V-Opro,O 'then he told someone to guard his sheep and goats
for him'

Examples of Hebrew clause types which were translated by Moronene clause types from a non-matching cluster or by relatively rare Moronene clause types are found in the following chapter.

In this chapter I have matched eighteen common Hebrew clause types from three clusters with thirteen common Moronene clause types. I have examined several portions of Biblical Hebrew text as well as the translation of those portions into Moronene and identified and classified the Moronene clause types which have been used to translate each of the eighteen common Hebrew clause types found in these portions. In the following chapter, I present an evaluation of the appropriateness of these particular Moronene clauses as translation equivalents for the corresponding Hebrew clause types.

CHAPTER 11

USING FUNCTIONAL VOICE ANALYSIS TO IMPROVE TRANSLATION QUALITY

In Chapter 10, I classified Moronene clause types used to translate particular Hebrew clause types into various categories, including matching and non-matching clause types, as well as medium-frequency and rare clause types. In this chapter, I report the results of asking Moronene translators to attempt to revise the translation of clauses in which the Moronene translation uses a non-matching clause type or a relatively rare clause type.

Revising Non-matching Clause Types

The discussion in the previous chapter suggests that rare clause types or clause types for which there is a mismatch of functional voice are possible candidates for revision. To evaluate this possibility, I discussed all such clauses with two Moronene translators, Ndasi and Huriana.¹ For each clause, I asked whether they thought it sounded natural in Moronene. In some cases the translator spontaneously suggested an improvement. Otherwise I suggested several alternative renderings, including being changed to one of the more common clause types. After some discussion, some clauses were changed, others were left unchanged. In the discussion, I tried hard not to influence the decision one way or the other, but let the Moronene translators decide which

¹ I discussed some of the clauses with only one of the translators and some with both together.

rendering was most natural, while still being accurate in meaning. The results of this process are shown in Table 113.

TABLE 113
NUMBER OF MORONENE CLAUSES REVISED

Category:	Non-matching cluster		Rare	
	Total	Revised	Total	Revised
qatal,O	4	0	2	0
wayyiqtol,O	7	1	2	1
wayyiqtol,S,O	1	1	6	3
wayyiqtol,etO	3	1	8	5
wayyiqtol,prepO	2	0	2	0
wayyiqtol,S,etO	3	0	34	16
wayyiqtol,S	1	0	3	1
wayyiqtol	0	-	3	3
wayyiqtol,S,prepO	1	0	8	3
wayyiqtol-Opro	6	3	1	1
wayyiqtol-Opro,S	0	-	5	0
Total	28	6	74	33

Table 113 shows that out of the twenty-eight Moronene clauses from non-matching clusters, six were revised (21%). Out of the seventy-four Moronene clauses from rare clause types, thirty-three were revised (45%). The clauses which were revised can be divided into several categories. The first category of revised clauses are those for which the initial Moronene translation used a clause type from a non-matching cluster and was revised by using a clause type from the same functional voice cluster as the original Hebrew. These are listed in the second column of Table 113. There are five

clauses in this category.² In the following examples, the initial Moronene translation is labeled IN and the revised translation is labeled RV.

'and sent her slave girl'
wayyiqtol,etO [active] (Ex. 2:5d, NIV)

וַתִּשְׁלַח אֶת־אֲמָתָה

(IN) nilako-no mon-tena me'asa sangkinaa-no
immediately-3sPOS AF/NF-send one slave-3sPOS
monV,O [antipassive] 'she immediately sent one of her slaves'

(RV) nilako-no tena-'o me'asa sangkinaa-no
immediately-3sPOS send-3sABS one slave-3sPOS
V-Opro,O [active] 'she immediately sent one of her slaves'

'and hid him in the sand.'
wayyiqtol-Opro [semi-active] (Ex. 2:12e, NIV)

וַיִּטְמֹנֵהוּ בַּחַול

(IN) ronga lamo-o koie miano
and bury-3sABS that person
V-Opro,O [active] 'and buried that person'

(RV) ka-i lamo-o
then-3sNOM bury-3sABS
NOM,V-Opro [high topicality active] 'then he buried him'

In the first example, Exodus 2:5d, the initial translation used a **monV,O** clause type, which belongs to the antipassive functional voice cluster. The Moronene translator spontaneously suggested changing it to a **V-Opro,O** clause type, which belongs to an active functional voice cluster, matching the functional voice cluster of the original Hebrew.

In the second example, Exodus 2:12e, by omitting the nominal object, the revised Moronene clause type is one from the high topicality active functional voice cluster, which matches the semi-active functional voice clause type of the Hebrew (see Table 111).

² In Table 112, there are six non-matching clauses listed as being revised, but one of these was revised to become a rare clause type.

The effect of this kind of revision is to increase the accuracy of the translation at the discourse level. By achieving a match of clause types in terms of topicality patterns, the Moronene reader has a better chance of drawing the same sort of inferences regarding the relative topicality of actor and undergoer as would have been drawn by a reader of the Hebrew.

A second category of revised clauses are those in which the initial translation used a relatively rare clause type, whereas the revised translation used a more common clause type from the same functional voice cluster as the original Hebrew clause type. There are nine clauses in this category. An example:

וַיַּלְدֵנָה
‘And she bare him a son,’
wayyiqtol, O [antipassive] (Ex. 2:22a, KJV)

- (IN) Ka-i pom-poko-hina i Zipora me'asa ana ntama
then-3sNOM AF-CAUS-born PI Ziporah one child male
NOM,monV,S,O [rare] ‘then Ziporah gave birth to a son’
- (RV) Ka-i pom-poko-hina me'asa ana ntama
then-3sNOM AF-CAUS-born one child male
NOM,monV,O [antipassive] ‘then she gave birth to a son’

In the above example, the initial Moronene translation used a relatively rare clause type in which a nominal subject and object both occur after the verb. In the revised translation the subject is made implicit. Clarity is not affected since Ziporah is mentioned in the previous clause, and logically she is the only possible subject for this clause. The omission of the nominal subject means that revised translation used a common clause type which belongs to the antipassive functional voice cluster, matching the original Hebrew clause type. This type of revision increases the naturalness of the translation since a relatively rare, and perhaps somewhat unnatural, clause type is replaced by a more common and natural clause type. It also increases the accuracy of the translation at the discourse level as was discussed in the previous example.

A third category of revised clauses are those in which the initial translation used a relatively rare clause type, whereas the revised translation used a more common clause type from a different functional voice cluster as the original Hebrew clause type. There are two clauses in this category. An example:

'So he sent'

וַיִּשְׁלַח

wayyiqtol [active] (1 Sa. 16:12a, NIV)

(IN) Yahopo nde'e i Isai ka-i pon-tena miano
next indeed PI Jesse then-3sNOM AF-send person
S,NOM,monV,O [rare] 'after that Jesse sent someone'

(RV) ka-i pon-tena nde'e miano
then-3sNOM AF-send indeed person
NOM,monV,O [antipassive] 'then he sent someone'

In the above example, the initial Moronene translation used a relatively rare clause type in which a nominal subject precedes the conjunction with the nominative clitic. The revised translation used a more common clause type with a pronominal subject. This revision increases the naturalness of the translation. The functional voice cluster of the revised Moronene translation does not match that of the original Hebrew. This can be explained as a case in which the use of the **wayyiqtol** clause type in this particular context does not fit the prototypical active functional voice topicality pattern in which the undergoer retains significant topicality. It rather represents a secondary use of the **wayyiqtol** clause type with unimportant non-topical undergoers. This secondary use is closer to an antipassive topicality pattern. Hence the appropriate Moronene clause type to use in this context is one from the antipassive functional voice cluster.

A fourth category of revised clauses are those in which the initial Moronene translation used a relatively rare clause type, whereas the revised translation used a medium-frequency clause type. There are three clauses in this category. Because of the relatively low frequency of the revised clause type, one cannot evaluate whether there is a match of topicality pattern with the Hebrew original. An example:

וַיָּקֹרֶא יְשִׁי אֶל־אַבְנָדָב

'Then Jesse called Abinadab'
wayyiqtol,S,prepO [active] (1 Sa. 16:8a, NIV)

- (IN) Yahopo koie i Isai ka-i boboi-ho
 next that PI Jesse then-3sNOM call-3sABS
 i Aminadab ana-no
 PI Aminadab child-3sPOS
S,NOM,V-proO,O [rare] 'after that Jesse called Abinadab his son'
- (RV) Ka-i boboi-ho koie i Isai
 then-3sNOM call-3sABS that PI Jesse
 i Aminadab ana-no
 PI Aminadab child-3sPOS
NOM,V-proO,S,O [medium] 'then Jesse called Abinadab his son'

In the above example, the shifting of the subject from preverbal position to postverbal position results in a more common clause type, which was felt to be more natural in this context. This type of revision increases the naturalness of the translation.

A fifth category of revised clauses are those in which the initial Moronene translation used a relatively rare clause type, whereas the revised translation used a different rare clause type which was felt to be more natural. There are eighteen clauses in this category. Because of the relatively low frequency of the revised clause type, one cannot evaluate whether there is a match of topicality pattern with the Hebrew original. An example:

וַיִּקְחֵה שָׂאֵל אֶת־הַחֲרָב

'so Saul took his own sword'
wayyiqtol,S,etO [active] (1 Sa. 31:4i, NIV)

- (IN) Nangkua-mo nde'e koie i Saul ka-i ala-a
 so-PFV indeed that PI Saul then-3sNOM take-3sABS
 taa-no
 sword-3sPOS
S,NOM,V-proO,O [rare] 'so Saul took his sword'

- (RV) Nangkua-mo nde'e ka-i ala-a taa-no
 so-PFV indeed then-3sNOM take-3sABS sword-3sPOS
 koie i Saul
 that PI Saul
NOM,V-proO,O,S [rare] ‘so Saul took his sword’

Out of the eighteen clauses in this category, for six of them the revised clause was the **NOM,V-proO,O,S** illustrated above. This indicates that this clause type is considered to be very natural. This suggests that the fact that a particular clause type rarely occurs in a limited corpus of natural texts, does not necessarily mean it is unnatural. Another example with different clause types:

וְתָלַחَ מִיכָּל אֶת־הַתְּרֵפִים
 ‘Then Michal took an idol’
wayyiqtol,S,etO [active] (1 Sa. 19:13a, NIV)

- (IN) ka-i po-'ala i Mikhal ka'apu-apu
 then-3sNOM AF-take PI Michal idol
NOM,monV,S,O [rare] ‘then Michal took an idol’
- (RV) Yahopo i Mikhal ka-i po-'ala ka'apu-apu
 next PI Michal then-3sNOM AF-take idol
S,NOM,monV,O [rare] ‘after that Michal took an idol’

In the above example, the shifting of the subject from postverbal position to preverbal position was associated with a change in conjunction, which was felt to be more natural in this context.

Non-matching Clause Types that Were not Revised

An examination of Table 113 reveals that out of twenty-eight non-matching clauses, twenty-two were not revised. Similarly out of seventy-four clauses from relatively rare clause types, forty-one were not revised. There are a number of reasons why the Moronene translators felt that there was no need to revise the clause structure of these clauses. Examples are given below of clauses falling into various categories.

The first category is where the Hebrew clause is not a prototypical example of the functional voice cluster to which it belongs, but has some of the characteristics of a different functional voice. Hence it is appropriate to use a Moronene clause type from the different non-matching functional voice in the translation. An example:

וַיְכַבֵּסוּ שִׁמְלָתָם
 'and they washed their clothes.'
wayyiqtol,O [antipassive] (Ex. 19:14c, NIV)

ronga men-tatapi-o pakea-do
 and PL-wash-3sABS clothes-3pPOS
V-Opro,O [active] 'and they washed their clothes'

In this example, the object is definite and possessed, a feature more characteristic of active functional voice rather than antipassive functional voice, and this may be a factor why the V-Opro form is felt to be more natural in Moronene.

A second category is where the Moronene translation uses a relatively rare clause type, but this clause type is judged to be very natural in the context. It must be remembered that the Moronene corpus analyzed is relatively small, so that only fifteen clause types are counted as being common. Quite a number of other clause types would also count as being common if a larger corpus were analyzed. In any event, even though it is fair enough to suspect that a rare clause type may be unnatural, there is no reason why certain rare clause types may not be quite natural in certain rare contexts. An example:

'On the sixth day, they gathered
 twice as much'
qatal,O [antipassive] (Ex. 16:22a, NIV)

Oleo ko-'onoo po-ruru-'ira-mo nta meng-kinaa-ndo
 day ORD-six AF-gather-3pABS-PRF FUT PL-food-3pPOS
 luku m-pendua me'alu-no
 times LG-twice many-3sPOS
monV-ABS,O [rare] 'the sixth day they gathered twice as much for their food'

The above example uses a relatively rare clause type in which the subject is marked with an absolute. Such clauses can be regarded as syntactically antipassive. Although rare, such clause types are perfectly natural in a context where the Hebrew uses an antipassive functional voice clause type.

A third category is where the Moronene clause uses a particular verb which is restricted in its potential for syntactic variation. Most Moronene transitive verbs occur frequently with both the prefixed *moN-V* form as well as the suffixed V-Opro form. There are a few verbs, however, in which one form or the other is highly dominant, and the other form seldom occurs. This means that clause types using the non-dominant verb form are unlikely to occur, and would be regarded as unnatural. Two verbs which fall into this category are *onto* 'see,' and *wee* 'give,' both of which almost always occur with the V-Opro form. An example:

וַיּוֹרֶא אִישׁ מִצְרַי מֵכָה אִישׁ־עַבְרִי מִאֲחֵי
 'He saw an Egyptian beating
 a Hebrew, one of his own people.'
wayyiqtol, O [antipassive] (Ex. 2:11d, NIV)

Ka-i onto-o me'asa miano Mesir
 then-3sNOM see-3sABS one person Egypt

da langku-o miano Ibrani, yo petila-no-si
 REL beat-3sABS person Hebrew ART sibling-3sPOS-CTR
NOM,V-Opro,O [active] 'then he saw an Egyptian who was beating a Hebrew,
 one of his relatives'

In the above example, it would not be appropriate to try to match the functional voice of the Hebrew clause by using a Moronene clause type from the antipassive functional voice cluster, such as **monV,O** or **NOM,monV,O**, because the *moN-V* form *po'onto* 'see' would be quite unnatural.

Implications for Translation

In this chapter, I have applied the analysis of functional voice and topicality in Hebrew and Moronene to the task of improving the quality of translations of biblical texts. Besides the specific benefit of revising several dozen verses, conducting this type of analysis of Moronene clause types has made me more aware of some of the factors which affect the naturalness of certain clause types. As a linguistic consultant assisting the Moronene translation team, I anticipate that this will help me improve the quality of the Moronene translation, especially in terms of naturalness.

One may raise the question: is the effort expended worth the improvements which have been achieved? The comparisons of Hebrew and Moronene clauses which I have described in Chapter 10 resulted in the revision of the clause structure of thirty-nine clauses in the Moronene translation. At one level, one might feel that if one was only aiming at improving translation quality, the hundreds of hours which I spent analyzing thousands of clauses was not a very efficient way of revising those clauses. But one should consider that most of those hours were spent analyzing the source text. Such analysis will not only benefit the Moronene translation, but also many other translations. If an analysis of the functional voice categories of Hebrew clause types were made available to translators in some sort of computerized database, it could contribute to a more efficient means of improving translation quality. If a linguist analyzed the topicality patterns of a score or so of the most common clause types in the target language, this information could be compared with the analysis of the source language to aid the translators in considering the implications of various possible choices of clause type.

This raises the possibility of evaluating the consistency of choices of clause types in a manner similar to how translators evaluate the consistency of choices of translation equivalents for key terms. In the computer program *Paratext*, Version 6.0 (*Paratext*

2003), there is a checklist entitled NT Keyterms for checking the consistency of key terms. The computer skips from one verse to the next where a certain key term occurs, and the translator can quickly see the various ways that it has been translated into the target language. Certain equivalents are tagged as acceptable, and any places which use other equivalents can be quickly found and evaluated. I can envisage a similar process being used to evaluate the equivalents used for particular clause types in the source language. Imagine that all the clauses in the Hebrew text in *Paratext* were labeled according to a system of clause type classification similar to that used in this dissertation. One could then skip from verse to verse examining and comparing the target language clause types used to translate one particular Hebrew clause type. It would be even better if there was a facility for tagging the target language clauses with clause type labels, and designating certain clause types as acceptable equivalents, others as dubious, and others as uncertain. One could then focus on the dubious clause types as candidates for revision.

Conclusion of Part IV

In Part IV, I have applied the results of analyzing functional voice categories in Hebrew and Moronene to the question of improving the quality of a translation of biblical texts into Moronene. In Chapter 10, I was able to match three functional voice clusters of Hebrew narrative clause types (antipassive, active, and semi-active) with similar clusters of Moronene clause types. Each Hebrew cluster was matched with a combination of two Moronene clusters, or one cluster plus an isolate. I examined clauses from those Hebrew clusters found in portions of biblical texts, and compared them with the Moronene clause types used to translate them. I found that the translation used a higher proportion of clause types from matching clusters, as compared to clauses from non-matching clusters.

At the same time, in some cases a relatively large number of rare clause types were used by the Moronene translation.

In Chapter 11, I reported the results of a revision process undertaken with Moronene translators to evaluate the naturalness of 34 clauses in the Moronene translation from non-matching clusters, and 107 clauses from rare clause types. As a result of this process, 21% of the non-matching clauses were revised, and 45% of the rare clauses were revised. I analyzed the clauses which were not revised, and identified several factors which could explain why no revision was felt necessary: (1) the Hebrew clause was not a prototypical example of its functional voice cluster; (2) the rare Moronene clause type used was felt to be natural in that context; (3) the particular Moronene verb used was restricted in its voice paradigm.

CONCLUSION

In this concluding chapter I will summarize the results that I have set forth in the previous chapters and make some suggestions for further research.

Summary of Results

I will first summarize the procedures used and results obtained in this research, subdivided into four topics: Hebrew, Moronene, functional voice theory, and translation. Then I will examine whether the hypotheses set forth in Chapter 2 have been demonstrated or not.

Hebrew

My investigation of topicality and functional voice in Biblical Hebrew was based on the analysis of 991 semantically transitive clauses from narrative and 926 semantically transitive clauses from directive discourse. I calculated the referential distance and topic persistence of the actor and undergoer of these clauses. I transformed the referential distance values into the derived variable anaphoric continuity. This provided the answer to the first research question mentioned in the Introduction.

In Chapter 3, I used principal component analysis of these variables to cluster Hebrew clause types occurring ten or more times in the corpus. I did this separately for twenty-four clause types in narrative and twenty-seven clause types in directive discourse. I used Givón's functional voice categories to classify five clause type clusters and one isolate in narrative. In directive discourse I classified six clause type clusters and

one isolate. I presented the topicality patterns of all these in tables and described their characteristics. For both corpora there were an antipassive functional voice cluster, an active functional voice cluster, a semi-active functional voice cluster, a passive functional voice cluster, and a low topicality active functional voice cluster. In addition to these, for directional discourse there was also a low topicality passive functional voice cluster. These results provided the answer to the second research question.

I compared narrative clause types using *qatal* and *wayyiqtol* with equivalent directive discourse clause types using *yiqtol* and *weqatal*. Out of twelve pairs of syntactically active clause types, for eleven the narrative and directive discourse member of the pair had the same functional voice classification. Such matching of functional voice classification was not evident for the syntactically passive clause types. This suggests that *qatal* in narrative functions similarly to *yiqtol* in directive discourse in relation to topicality patterns, and the same applies to *wayyiqtol* in relation to *weqatal*.

The above analysis excluded clause types occurring less than ten times in the corpus. In order to include these in the investigation I defined two types of amalgamated clause types: one set based on object marking, and another set based on constituent order and on whether the subject and object were pronouns or nouns. In Chapters 4 and 5, I presented the topicality patterns of all these in tables, described their characteristics, and classified them using Givón's functional voice categories. I analyzed narrative and directive discourse amalgamated clause types separately. These results provided the answer to the third research question. The number of amalgamated clause types falling into each functional voice category for each genre is shown in Table 114.

TABLE 114
**NUMBER OF AMALGAMATED CLAUSE TYPES IN EACH
 FUNCTIONAL VOICE CATEGORY**

Functional voice category	Narrative Amalgamated Clause Types	Directive Amalgamated Clause Types
Antipassive	4	4
Antipassive/active	0	4
Active	4	0
Low topicality active	1	1
Active/inverse	0	3
Semi-active	1	0
Inverse	5	2
Low topicality inverse	0	1
Passive	1	0
Low topicality	0	0
No match	1	1

As mentioned in the Introduction, the central research issue of this dissertation is the classification of Biblical Hebrew and Moronene clause types in terms of topicality patterns and functional voice categories. By comparing the common clause types and amalgamated clause types falling into particular functional voice categories, I can identify certain syntactic features of Hebrew clause types associated with certain categories. These associations are tendencies, not absolute correlations. I summarize these below.

- Features associated with antipassive functional voice: unmarked object, fronted object, lack of nominal subject.
- Features associated with active functional voice: object marked with **מִן** or preposition, nominal subject.

- Features associated with semi-active functional voice: pronominalized object.
- Features associated with inverse functional voice: pronominalized object, nominal subject, VOS constituent order.
- Features associated with passive functional voice: morphologically passive verb form.

In relation to the last point, I was able to determine that out of nine common syntactically passive clause types, only three closely matched the category of passive functional voice (see Table 19), whereas a majority did not. The same was true of the syntactically passive amalgamated clause types. Of those which did not closely match the passive functional voice category, some were characterized by low topicality of both actor and undergoer, and the enigmatic **U,qatal-Pas** clause type had actor topicality higher than undergoer topicality. This suggests that the discourse functions of morphologically passive clauses in Hebrew may be significantly different from those typically associated with syntactic passives in other languages.

In Chapter 6, I presented the topicality patterns for amalgamated clause types based on verb conjugation and morphological voice. Because most of these amalgamated clause types consist of a combination of clause types representing different functional voices, it was not appropriate to identify the amalgamated clause types with particular functional voices. Rather I showed how the relative topicality of particular verb conjugations is influenced by certain clause types from particular functional voice clusters. In terms of the relative topicality of actor as compared to undergoer, as measured by the mean anaphoric continuity difference, the highest ranking verb conjugations are imperative and *yiqtol* in directive discourse. Ranking somewhat lower are the other syntactically active verb conjugations: *weqatal*, *qatal*, *wayyiqtol*, and the predominately preterite *yiqtol* found in narrative. In contrast to these, the syntactically

passive verb conjugations are characterized by negative mean anaphoric continuity differences, indicating that the undergoer is more topical than the actor.

The following are a number of other specific conclusions with regard to topicality in Hebrew which can be derived from the present study:

- Subjects and objects coded pronominally are more topical than subjects and objects coded nominally.
- Two active clause type clusters, one passive clause type cluster, and one basic clause type isolate are characterized by relatively low topicality of both actor and undergoer. Functional voice theory needs to develop categories to classify such topicality patterns.
- Variations in constituent order are related to topicality patterns. Some examples: (1) Object fronting usually signals low object topicality. (2) The postverbal order subject-object usually signals that the subject is more topical than the object, whereas the order object-subject usually signals that the object is more topical than the subject.
- Variations in object marking are related to topicality patterns. For pronominal objects, suffixed objects are usually more topical than those marked with **תְּ** or with prepositions. For nominal objects, those marked with **תְּ** or by prepositions tend to be more topical than unmarked objects.

In Chapters 4 and 5, I presented several supplementary investigations arising out of some of these findings. In relation to object marking, I showed that the use of **תְּ** to mark objects may be related to the degree of animacy of the object, its use being greater with sentient objects as compared to nonsentient objects. In relation to constituent order, I showed that the fronted position of the subject has a significant correlation with focal status in narrative transitive clauses, but there is not a clear correlation in directive discourse. I also showed that the fronted position of the object has a significant correlation with focal status in directive discourse, but there is not a clear correlation in narrative.

Moronene

My investigation of topicality and functional voice in Moronene was based on the analysis of 640 semantically transitive clauses from several narrative texts, both prose and poetry. As was done with Hebrew, I calculated the referential distance, anaphoric continuity, and topic persistence of the actor and undergoer of these clauses. This provided the answer to the fourth research question.

In Chapter 9, I used principal component analysis of these variables to cluster fifteen Moronene clause types occurring nine or more times in the corpus. I used Givón's functional voice categories to classify five clause type clusters and three isolates. I presented the topicality patterns of all these in tables and described their characteristics. I classified the clusters as an antipassive functional voice cluster, two active functional voice clusters, a high topicality active functional voice cluster, an inverse functional voice cluster, and a low topicality active functional voice cluster. I classified one of the isolates as being antipassive functional voice, one as passive functional voice, and one as not matching any category. These results provided the answer to the fifth research question.

By comparing the common clause types falling into particular functional voice categories I identified certain syntactic features associated with certain categories. These associations are tendencies, not absolute correlations. These are summarized below.

- Features associated with antipassive functional voice: pronominal or implicit subject, nominal object, *moN-V* verb form.
- Features associated with active functional voice: pronominal or implicit subject.
- Features associated with high topicality active functional voice: pronominal or implicit subject, verb with a suffixed pronominal object.
- Features associated with inverse functional voice: nominal subject, verb with a suffixed pronominal object.

- Features associated with passive functional voice: morphologically passive verb form, pronominal undergoer subject.

Functional Voice Theory

In this dissertation, I have presented an application of Givón's theory of functional voice. I have shown that functional voice categories can be usefully applied to a language like Hebrew which does not have many syntactic voice categories, as well as to a language like Moronene which has more syntactic voice distinctions.

The methodology used in this study incorporates a number of significant changes as compared to the methodology used in Givón (1994b), as well as more recent works such as Wouk (2002) and Quick (2002, 2003, 2005). The most important developments are summarized below:

Wide variety of clause types

Previous studies have only compared a limited variety of clause types. The maximum number of different clause types distinguished in the studies of various languages compiled in Givón (1994b) was seven, as set out in the investigation of functional voice in Koyukon by Chad Thompson (1994:53). In this dissertation, I have used a large set of features to define the clause types. This has allowed more flexibility in searching for features which are associated with distinctive topicality patterns. The fact that I used four chapters to report the topicality patterns of Hebrew is due to the rich gamut of clause types investigated.

Measuring anaphoric continuity

I have used a new measure of anaphoric continuity to complement the measure of referential distance. The new measure has several advantages:

1. It distinguishes between new referents and reactivated referents.
2. It has the same polarity as topic persistence, so that high values indicate high topicality and low values low topicality.
3. It has the same range as topic persistence, from zero to ten.
4. It is therefore relatively easy to conduct principal component analysis in a parallel fashion on both variables, and the resulting plots are relatively easy to interpret.

Principal component analysis

The use of principal component analysis has allowed a more insightful presentation of the data. The graphing of clause types based on PCA scores has enabled clause types to be clustered. This has the advantage of providing a visual picture of the similarities and differences between clause types, so the reader is not simply wallowing in endless statistics.

New functional voice categories

This study has shown that the four functional voice categories posited by Givón are inadequate. They do not encompass the whole range of topicality patterns as exemplified by Hebrew and Moronene clause types. I have suggested several new categories such as: semi-active, low topicality active, and low topicality passive. There were also several clause types which it was difficult to characterize using Givón's labels.

Through this study I have shown that the question of the relative topicality of actor and undergoer is more complex and varied than Givón's exposition suggests. One possible response to this finding would be to interpret the functional voice categories as fuzzy categories, with Givón's definitions providing the prototypical central features. On this view, it would only be expected that there would be marginal members of the categories in which some features matched the definitions and some did not. Further study of functional voice categories in other languages could shed light on this matter. If

some of the additional categories I have identified turn up frequently in other languages, this might lend support to the establishment of several more basic functional voice categories, or alternatively, the broadening of the definition of some of Givón's categories so as to encompass marginal members.

Translation

In Part IV, I showed how the analysis of topicality patterns in Hebrew and Moronene can be applied to the task of improving the quality of a translation from Biblical Hebrew texts into Moronene. In Chapter 10, I matched common Hebrew clause types from three functional voice clusters with common Moronene clause types. The six Hebrew clause types from the antipassive functional voice cluster were matched with three Moronene clause types from the antipassive functional voice cluster plus one isolate. The seven Hebrew clause types from the active functional voice cluster were matched with five Moronene clause types from the first and second active functional voice clusters. The five Hebrew clause types from the semi-active functional voice cluster were matched with four Moronene clause types from the high topicality active functional voice cluster and the inverse functional voice cluster.

For eleven of these Hebrew clause types, I examined all the Moronene clause types used as translation equivalents in portions of Exodus and 1 Samuel which were available in Moronene, supplemented from Genesis. I classified these translated Moronene clauses based on two criteria: (1) whether the Moronene clause type was common, medium frequency, or rare; (2) whether the Moronene clause type was from a matching or non-matching functional voice cluster as compared to the original Hebrew clause (this criterion could be applied only to the common clause types).

There were twenty-eight Moronene clauses falling into the category of non-matching cluster and seventy-four in the category of rare clause types. As described in

Chapter 11, all of these were examined and discussed with two Moronene translators to see if the naturalness of the translation would be improved by revising the clause structure. As a result, six of the non-matching clauses were revised and thirty-three of the rare clause types were revised. I classified the revised clauses into various categories and also presented several reasons why it was not appropriate to revise the remainder of the clauses. This analysis and revision process provided the answer to the sixth research question, and also relates directly to the goal of the study as stated in the Introduction, namely: to identify factors relating to topicality and functional voice that help determine the choice between different clause types in Biblical Hebrew and Moronene, and hence give a better understanding of which Moronene clause types may be appropriate equivalents for which Hebrew clause types in translation.

Hypotheses

The purpose of the study as stated in the Introduction is: to use measures of topicality to test various hypotheses about the functions of clause types in Biblical Hebrew and Moronene as well as to propose new hypotheses arising from the analysis. The weak hypothesis I presented in Chapter 2 was that anaphoric continuity and topic persistence will differ significantly with respect to certain basic clause types or amalgamated clause types. I have clearly demonstrated this hypothesis. It is clear that there are very significant differences in the topicality patterns for many different clause types. The corollary to this is that the null hypothesis has been shown to be false.

The strong hypothesis is that a majority of basic clause types and amalgamated clause types will have values for anaphoric continuity and topic persistence which closely match the four functional voice categories defined by Givón. Whether or not the strong hypothesis has been demonstrated can be seen from the tabulation in Table 115. I have listed each clause type cluster and amalgamated clause type and given a characterization

of its functional voice category. If the category is one of the four functional voice categories defined by Givón, the number of clause types in the cluster is entered under the "Match" column. If the cluster or clause type falls between two categories, or has some other characterization, its number is entered under the "No match" column. Amalgamated clause types are only counted as one, since sometimes they are made up of clause types which occur infrequently. Altogether there are thirty-four amalgamated clause types, and sixty-six frequently-occurring basic clause types occurring in clusters or as isolates, making a grand total of one hundred.

TABLE 115
**CLAUSE TYPES MATCHING GIVÓN'S FUNCTIONAL
 VOICE CATEGORIES**

Corpus/Table	Name of Cluster or Clause Type	Category	Clause types	
			Match	No match
Narrative Tab. 13	Antipassive	antipassive	6	
Narrative Tab. 15	Active	active	7	
Narrative Tab. 17	Semi-active	semi-active		5
Narrative Tab. 19	Passive	passive	3	
Narrative Tab. 21	U,qatal-Pas	"enigmatic"		1
Narrative Tab. 22	Low topicality active	low topicality active		2
Directive Tab. 24	Antipassive	antipassive	5	
Directive Tab. 26	Active	active	9	
Directive Tab. 28	Semi-active	semi-active		5
Directive Tab. 30	Passive	close to passive		2
Directive Tab. 32	Low topicality passive	low topicality passive		3
Directive Tab. 34	Low topicality active	low topicality active		2
Directive Tab. 36	yiqtol,S,etO	low continuity active		1
Narrative Tab. 38	Implicit undergoer	active	1	
Directive Tab. 39	Implicit undergoer	antipassive/active		1
Narrative Tab. 40	Oblique nominal und.	active	1	
Directive Tab. 41	Oblique nominal und.	antipassive	1	
Narrative Tab. 42	Oblique pronom. und.	inverse	1	
Directive Tab. 43	Oblique pronom. und.	inverse	1	

Narrative Tab. 44	Unmarked object	antipassive	1	
Directive Tab. 45	Unmarked object	antipassive	1	
Narrative Tab. 46	Nominal object w. תְּ	active	1	
Directive Tab. 47	Nominal object w. תְּ	antipassive/active		1
Narrative Tab. 48	Pronom. object w. תְּ	inverse	1	
Directive Tab. 49	Pronom. object w. תְּ	active/inverse		1
Narrative Tab. 50	Suffixed object	inverse	1	
Directive Tab. 51	Suffixed object	active/inverse		1
Narrative Tab. 55	VO nominal object	antipassive	1	
Directive Tab. 56	VO nominal object	antipassive/active		1
Narrative Tab. 57	VO pronominal object	semi-active		1
Directive Tab. 58	VO pronominal object	active/inverse		1
Narrative Tab. 59	OV nominal object	antipassive	1	
Directive Tab. 60	OV nominal object	antipassive	1	
Narrative Tab. 61	VSO	active	1	
Directive Tab. 62	VSO	antipassive/active		1
Narrative Tab. 63	VOS pronom. object	inverse	1	
Directive Tab. 64	VOS pronom. object	inverse	1	
Narrative Tab. 65	SVO nomin. subj./obj.	low topicality active		1
Directive Tab. 66	SVO nomin. subj./obj.	low topicality active		1
Narrative Tab. 67	SVO pronom. object	inverse	1	
Directive Tab. 68	SVO pronom. object	low topicality inverse		1
Directive Tab. 69	SVO pronom. subject	antipassive	1	
Narrative Tab. 70	OVS	antipassive	1	
Narrative Tab. 71	VU passive	passive	1	
Narrative Tab. 72	UV passive	no match		1
Directive Tab. 73	VU passive	low topicality		1
Directive Tab. 74	UV passive	no match		1
Moronene Tab. 98	V,prepO	antipassive	1	
Moronene Tab. 99	Antipassive	antipassive	3	
Moronene Tab. 101	First active	active	2	
Moronene Tab. 103	Second active	active	3	
Moronene Tab. 105	High topicality active	active	2	
Moronene Tab. 107	Inverse	inverse	2	
Moronene Tab. 109	NOM,UVV,U	no match		1
Moronene Tab. 110	NOM,UVV	passive	1	
Total:			64	36

The totals in Table 115 show that out of one hundred clause types or clusters, sixty-four closely match Givón's functional voice categories. Hence the strong hypothesis has been demonstrated, since a clear majority of basic clause types and amalgamated clause types do have values for anaphoric continuity and topic persistence which closely match Givón's four functional voice categories.

If I subdivide the tabulation in Table 115 according to corpus, I get the figures shown in Table 116. I have distinguished the amalgamated clause types from the frequently occurring basic clause types, which were clustered in Chapters 3 and 9.

TABLE 116
**CLAUSE TYPES MATCHING GIVÓN'S FUNCTIONAL
 VOICE CATEGORIES, BY CORPUS**

Corpus	Clause Type	Matching	No Match	Percent
Narrative	Frequently occurring	16	8	66.7%
Narrative	Amalgamated	14	3	82.4%
Directive	Frequently occurring	14	13	51.9%
Directive	Amalgamated	6	11	35.3%
Moronene	Frequently occurring	14	1	93.3%

The figures in Table 116 indicate that a higher percentage of clause types in Hebrew narrative closely match Givón's functional voice categories than do clause types in directive discourse. And there is an even higher percentage of clause types in Moronene which match than there is in Hebrew narrative. What are the implications of this?

First one must take into account the fact that Givón defined his categories on the basis of research which was done mostly on narrative texts. I am not aware of any research which has investigated functional voice in relation to directive discourse. If

functional voice has somewhat different dynamics in directive discourse, it is understandable that the categories do not match the definitions as well. A closer examination of the characterizations of functional voice for directive discourse in Table 115 show that in many of the cases, the reason there is no match is because the clause type or cluster lies on the borderline between two categories. There are four cases characterized as antipassive/active, and four cases characterized as active/inverse or semi-active (that is, on the borderline between active and inverse). This suggests that in directive discourse, many clause types tend to cluster at a slightly different spot on the topicality spectrum as compared to what happens in narrative. In other words, the calibration of topicality is slightly different in directive discourse. One factor which may contribute to this different calibration is the overall topicality of actors and undergoers. A comparison of Tables 9 and 10 in Chapter 3 shows that the topicality gap between actors and undergoers is greater in directive discourse than it is in narrative. This can be seen, for example by comparing the mean anaphoric continuity differences, 3.40 for directive discourse versus 2.80 for narrative. Similarly with the mean topic persistence differences, 2.42 for directive discourse versus 1.44 for narrative. If actors in directive discourse have a greater tendency to be much more topical than undergoers, it means that there is a greater tendency for clause types to be more like antipassive rather than active. And indeed, an examination of Table 115 shows that in three of the cases when a directive discourse amalgamated clause type is classified as antipassive/active, the equivalent narrative amalgamated clause type is classified as active.¹ The same phenomenon occurs in two cases when a directive discourse amalgamated clause type is

¹ The three cases are the implicit undergoer amalgamated clause type, the nominal object with *EN* amalgamated clause type, and the VSO amalgamated clause type.

classified as active/inverse, whereas the equivalent narrative amalgamated clause type is classified as inverse.²

What is the implication of the almost complete match of categories for Moronene? This can be related to the fact that in many Western Austronesian languages, including Moronene, the functional voice categories are also syntactic voice categories. In fact the seminal research on functional voice was done on a Western Austronesian language (Cooreman (1983, 1987) on Chamorro).³ It is understandable that the categories match better when applied to a language closely related to a language where the categories had their initial theoretical formulation.

Suggestions for Further Research

In the Introduction, I stated that the significance of this research would be in relation to applications in discourse analysis theory, translation theory, and the task of Bible translation. The following are a few suggestions for further research rising out the theoretical framework and methodology I have used throughout this dissertation. Some of them relate to unanswered questions raised in this study. I was tempted to include some of these as supplementary investigations in this dissertation, but I chose not to do so because of limitations of time and the desire to keep the dissertation to a reasonable length.

² The two cases are the pronominal object with **DN** amalgamated clause type, and the suffixed object amalgamated clause type.

³ Other studies of functional voice in Western Austronesian languages using a methodology similar to that of Givón include Payne (1994) on Cebuano, Brainard (1994) on Karao, Wouk (2002) on Sasak, and Quick (2002, 2003, 2005) on Pendau. In contrast to this, I am not aware of any such study investigating functional voice in the Semitic or Afrasian language families to which Hebrew belongs. The studies of the Semitic language, Amharic (Gasser 1983), and the Afrasian language, Hausa (Jaggar 1983), as well as Fox (1983) on Biblical Hebrew, all use an earlier version of Givón's methodology which focuses on the nominal coding of participants rather than on functional voice.

Hebrew

One suggestion I can make is that future research on discourse analysis in Hebrew or other languages would benefit by a more detailed breakdown of the data into many clause types, and investigating each one separately using quantitative techniques. Hence conclusions can be backed up with statistical evidence, and there is less likelihood of imposing simplistic solutions on the rich complexity of discourse functions which are found in human discourse.

In this dissertation, I have used Floor's focus structure categories to classify certain clause types. It would be instructive to use Floor's topic and focus categories in a more comprehensive fashion by classifying every Hebrew clause in the narrative and directive discourse corpora both in terms of topic categories as well as focus structure categories. In this way one could gain insights by using two complementary systems to classify topic and focus patterns: the quantitative system of Givón and the qualitative system of Floor.

In the present research, I have restricted the analysis to certain finite semantically transitive clause types. It would be instructive to expand the analysis by investigating relative clauses, participial clauses, infinitival clauses, and semantically intransitive clauses, among others. Since the passive clause types show some enigmatic properties, it would be instructive to do a more comprehensive study of topicality patterns of passives. Since they are relatively rare, it might be necessary to study them throughout the Hebrew Bible to get an adequate sample. The same would apply to other uncommon clause types for which there were less than ten examples in the present corpora.

In this dissertation, I have restricted the analysis to narrative and directive discourse. It would be enlightening to expand this study to more discourse genres. Of particular interest would be prophetic and procedural discourse.

This dissertation sheds some light on how word order differences may be related to different topicality patterns. But topicality alone cannot explain the differences between various constituent orders in Hebrew. A better understanding of Hebrew word order could be gained by combining the approach found in the present study with an investigation of other factors which influence word order.

In this dissertation, I have investigated three types of Hebrew discourse: narrative prose, narrative poetry, and directive discourse. It would be enlightening to use the data gathered in this study to compare and contrast the syntax and discourse structure of these three genres in a systematic fashion, not only in terms of differing topicality patterns, but also in terms of many other contrasting features.

Other Languages

In this dissertation, the investigation of Moronene was somewhat limited in scope, since it was supplementary to the main investigation of Hebrew. A better understanding of functional voice and topicality in Moronene could be gained by applying the methodology to a larger corpus including a wider variety of discourse genres.

In the present research, the comparison of Moronene translation equivalents was restricted mainly to certain portions of the Hebrew narrative corpus for which a Moronene translation was available. Such a comparison could be profitably done for other portions which have been translated into Moronene, such as Genesis and portions of 2 Samuel. If the necessary background research is done, such comparisons could be profitably done in relation to translations of the Old Testament into any language.

An obvious follow-up to the present study would be to do a similar study on the other languages of the Bible, Greek and Aramaic. One might even hope that eventually a topicality analysis such as this could be done for every clause in the entire Bible and integrated with a syntactic database of the biblical text so that one could conduct

comprehensive investigations of the interaction of topicality patterns with a wide variety of syntactic features.

Besides that, since the present study represents a new approach to the analysis of functional voice, it would be of interest to apply this particular methodology to any language, whether it be a language for which some investigation of functional voice has already been done, or a language for which no such research has ever been done.

APPENDIX A

DIRECTIVE SPEECH UNITS

This appendix lists the sixty-one directive speech units which make up the directive discourse corpus. In forming the corpus, my goal was to have more than nine hundred semantically transitive clauses from both legal and non-legal directive texts. Initially I selected all directive speech units fulfilling the criteria from Genesis, Exodus 1-19, Joshua, Judges, Ruth, 1 & 2 Samuel, 1 & 2 Kings (no texts in Judges fulfilled the criteria). These non-legal texts consist of 880 clauses, including 380 semantically transitive clauses. I selected the legal directive texts from Exodus 20-40, Numbers 1-18, Leviticus 1-19, excluding procedural texts. These texts consist of 957 clauses, including 546 semantically transitive clauses. I did not select texts from the latter chapters of Numbers and Leviticus since the corpus had already attained the desired size. The entire corpus consists of 1837 clauses including 926 semantically transitive clauses.

In some cases the directive speech unit is part of a larger embedded quotation which also includes speech units of another type. Sometimes these speech units are a sequence of conversational turns by two speakers. In these cases clauses in the larger unit are counted for purposes of calculating referential distance and topic persistence, but only clauses within the directive speech unit are included in the corpus of clauses to be analyzed. In the list that follows, the larger unit is given first, and the directive speech unit in parentheses after it. Some directive speech units have quoted utterances of other types embedded within them. Again, the clauses of these quotations within quotations are counted for purposes of calculating referential distance and topic persistence, but not

included within the corpus. These embedded quotations within quotations are not mentioned below.

Gen. 6:13b-21; God wants Noah to make an ark.

Gen. 9:1c-7; God wants Noah's sons to be fruitful.

Gen. 17:2-14 (dir.: 9-14); God wants Abraham to circumcise males.

Gen. 32:8b-12 (dir.: 9b-12); Jacob wants God to deliver him from Esau.

Gen. 43:7b-10 (dir.: 8b-10); Judah wants Jacob to send Benjamin.

Gen. 43:11b-14; Jacob wants his sons to take gifts to Egypt.

Gen. 45:9-13; Joseph wants his brothers to bring Jacob to Egypt.

Gen. 45:17b-20; Pharaoh wants Joseph's brothers to bring Jacob to Egypt.

Ex. 7:14b-18; God wants Moses to strike the Nile.

Ex. 8:16b-19; God wants Moses to speak to Pharaoh.

Ex. 9:13b-19; God wants Moses to speak to Pharaoh.

Ex. 12:2-20; God wants Moses to spell out Passover regulations.

Ex. 12:21-27d; Moses wants the Israelites to put blood on their lintels.

Ex. 12:43b-49; God wants only Israelites to keep the Passover.

Ex. 13:3c-16; Moses wants the Israelites to eat unleavened bread.

Ex. 14:11b-18 (dir.: 15b-18); God wants Moses to divide the sea.

Ex. 18:17b-23; Jethro wants Moses to delegate his judging.

Ex. 20:2-17; God wants the Israelites to obey his covenant rules.

Ex. 20:22b-26; God wants the Israelites to make an altar.

Ex. 21:1-23:33; God wants the Israelites to obey his laws.

Ex. 31:13-17; God wants the Israelites to observe his sabbaths.

Ex. 32:7b-13 (dir.: 11c-13); Moses wants God to turn from his anger.

Ex. 34:9b-26 (dir.: 10b-26); God wants the Israelites to worship no other god.

Lev. 11:2-47; God wants the Israelites not to eat unclean food.

Lev. 17:2-16; God wants the Israelites to sacrifice at the Tent of Meeting.

Lev. 18:2-30; God wants the Israelites not to uncover nakedness of close relatives.

Lev. 19:2-37; God wants the Israelites to be holy.

Num. 6:2-21; God wants Nazirites to keep the rules of separation.

Num. 8:6-19; God wants Moses to purify the Levites.

Num. 9:10b-24; God wants all the Israelites to celebrate the Passover.

Num. 11:16b-20; God wants Moses to gather elders and consecrate the people.

Num. 14:11b-19 (dir.: 13b-19); Moses wants God to forgive Israel.

Num. 15:18-31; God wants the priest to make atonement for the Israelites.

Num. 18:1b-32; God wants Aaron and his sons to take care of the offerings.

Jos. 1:2a-9; God wants Joshua to be courageous.

Jos. 7:10b-15; God wants Joshua to consecrate the people.

Jos. 8:4b-8; Joshua wants his troops to ambush the city.

Jos. 18:3b-7; Joshua wants men to describe the land.

Jos. 20:2-6; God wants the Israelites to designate cities of refuge.

Jos. 22:16-20; Phinehas and chiefs want eastern tribes not to rebel against God.

Jos. 23:2c-16; Joshua wants the Israelites to be faithful to God.

Ruth 1:11b-13; Naomi wants her daughters to return home.

1 Sa. 6:4d-9; Priests want Philistines to send a gift of tumors and rats with the ark.

1 Sa. 12:20b-25; Samuel wants the people to fear God.

1 Sa. 17:8d-10; Goliath wants the Israelites to choose a champion.

1 Sa. 20:2d-8 (dir.: 5b-8); David wants Jonathan to explain his absence to Saul.

1 Sa. 20:18b-23; Jonathan wants David to meet him secretly in the field.

1 Sa. 23:21b-23; Saul wants the Ziphites to find out where David is hiding.

1 Sa. 25:5c-8; David wants the young men to visit Nabal.

1 Sa. 25:24c-31; Abigail wants David to forgive her offense.

- 1 Sa. 26:17c-20 (dir.: 18b-20); David wants Saul to stop chasing him.
- 2 Sa. 7:18c-29 (dir.: 25-29); David wants God to bless his house forever.
- 2 Sa. 17:6c-13 (dir.: 8b-13); Hushai wants Absalom to delay attacking.
- 2 Sa. 19:5c-8 (dir.: 6c-8); Joab wants David to go out and speak to his men.
- 1 Kg. 1:11b-14; Nathan wants Bathsheba to speak to David.
- 1 Kg. 2:2-9; David wants Solomon to punish his enemies.
- 1 Kg. 8:23b-53; Solomon wants God to hear, forgive, and act.
- 1 Kg. 18:21c-24c; Elijah wants the people to choose between God and Baal.
- 2 Kg. 3:16b-19; God wants Jehoram to make the valley full of trenches.
- 2 Kg. 18:28c-35; King Sennacherib wants the Israelites to surrender.
- 2 Kg. 19:15c-19; Hezekiah wants God to deliver the Israelites from Sennacherib.

GLOSSARY

Accessible	The activation state of a referent of which a person has a background awareness
Activation state	The degree to which a referent is in a person's focus of consciousness
Active voice (functional)	A clause type in which the actor is more topical than the undergoer, but the undergoer retains considerable topicality
Active voice (syntactic)	A transitive clause type in which the actor is subject/pivot and the undergoer is a core argument
Actor	The argument which expresses the participant which performs, effects, instigates, or controls the situation denoted by the predicate
Agent	An argument which performs or controls the action denoted by a semantically transitive predicate
Anaphoric continuity	(1) The degree to which a referent has continuity with previous clauses (2) A variable derived from referential distance, with reversed polarity
Antipassive (functional)	A clause type in which the actor is more topical than the undergoer, and the undergoer is extremely non-topical
Antipassive (syntactic)	An intransitive clause type derived from a lexically transitive verb in which the actor is subject/pivot and the undergoer is oblique or omitted
Argument-focus structure	A sentence form in which the focus identifies the missing argument in a presupposed open proposition

Assertion	The proposition expressed by a sentence which the hearer is expected to know as a result of hearing the sentence uttered
Cataphoric importance	How important a referent will be in the following clauses
Core argument	An obligatory clause argument as determined by the case frame of the predicate
Directive discourse	A discourse which constitutes an attempt by the speaker to get the hearer to bring about a desired situation
Dislocated	A clause constituent fronted outside the clause boundary
Discourse active	The activation state of a referent in a person's focus of consciousness
Focus domain	The syntactic domain in a sentence which expresses the focus component of the proposition
Focal element	A semantic element which is part of the focus component of a proposition
Focus	The semantic component of a proposition whereby the assertion differs from the presupposition
Fronting	The occurrence of a clause constituent before the verb
Functional voice	A property of clause types based on the relative topicality of actor and undergoer
Inactive	The activation state of a referent in a person's long-term memory
Inverse voice (functional)	A clause type in which the undergoer is more topical than the actor, but the actor retains considerable topicality
Inverse voice (syntactic)	A transitive clause type in which the undergoer is subject/pivot and the actor is a core argument
Obviate	A pronoun used for less topical referents
Passive voice (functional)	A clause type in which the undergoer is more topical than the actor, and the actor is extremely non-topical

Passive voice (syntactic)	An intransitive clause type derived from a lexically transitive verb in which the undergoer is subject/pivot and the actor is oblique or omitted
Patient	A clause argument affected by the predicate
PCA loadings	Weightings for the original variables used to derive a new set of independent variables called PCA scores
PCA score	A linear combination of the original variables which have a more normal distribution
Pivot	The clause constituent most crucially involved in the syntactic or morphological operations of the clause
Predicate-focus structure	A sentence form in which the predicate is the focus and in which the subject (plus any other topical elements) is in the presupposition
Presupposition	The set of propositions lexicogrammatically evoked in a sentence which the speaker assumes the hearer already knows at the time the sentence is uttered
Primary topic	A topic expression, usually the subject, referring to an identifiable accessible referent
Principal component analysis	A statistical technique which derives PCA scores expressing underlying differences between variables, after common correlations are extracted
Proximate	A pronoun used for more topical referents
Relative topicality	The topicality of the actor as compared to the undergoer as measured by anaphoric continuity and topic persistence.
Referential distance	The number of clauses before its present occurrence that a referent last occurred in the preceding text
Secondary topic	A topic expression in addition to the primary topic, usually the object or indirect object, referring to an identifiable accessible referent
Semantically transitive	A nonstative clause with a volitional potent agent and an affected patient.

Semi-active	A referent of which a person has a background awareness (same as accessible)
Semi-active functional voice	A clause type in which the actor and the undergoer have about the same topicality, and both retain considerable topicality
Sentence-focus structure	A sentence form in which the focus extends over both the subject and the predicate (minus any topical non-subject elements)
Sentence topic	The topic of the proposition expressed by a sentence
Tail topic	A lexical topic expression positioned at the end of the clause containing information about the topic referent
Topicality	The degree to which a referent is a matter of standing current interest, as measured by frequency of mention
Topic expression	A clause constituent which refers to a referent which is the topic of the proposition expressed by the clause
Topic frame	A presupposed, topical referent that sets a frame for another topic
Topic of proposition	A referent which is a matter of standing current interest or concern, and in relation to which the proposition expresses relevant information and increases the addressee's knowledge thereof
Topic persistence	The number of times a referent recurs within the next ten clauses following its present occurrence
Topic shift	A change of primary or secondary topic from one clause to the next
Undergoer	The argument which expresses the participant which does not perform, initiate, or control any situation but rather is affected by it
Verb conjugation	A Hebrew verb stem expressing semantic distinctions involving voice, causation, iterativity, and so on
Zero anaphora	When a clause argument is not coded in the surface structure by any explicit expression

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