

Roles and Relations in Biblical Law: A Study of Participant Tracking, Semantic Roles, and Social Networks in Leviticus 17-26

CHRISTIAN CANU HØJGAARD



UNIVERSITY OF
CAMBRIDGE

Faculty of Asian and Middle
Eastern Studies



<https://www.openbookpublishers.com>

©2024 Christian Canu Højgaard



This work is licensed under an Attribution-NonCommercial 4.0 International (CC BY-NC 4.0). This license allows you to share, copy, distribute, and transmit the text; to adapt the text for non-commercial purposes of the text providing attribution is made to the authors (but not in any way that suggests that they endorse you or your use of the work). Attribution should include the following information:

Christian Canu Højgaard, *Roles and Relations in Biblical Law: A Study of Participant Tracking, Semantic Roles, and Social Networks in Leviticus 17-26*. Cambridge, UK: Open Book Publishers, 2024, <https://doi.org/10.11647/OBP.0376>

Further details about CC BY-NC licenses are available at <http://creativecommons.org/licenses/by-nc/4.0/>

All external links were active at the time of publication unless otherwise stated and have been archived via the Internet Archive Wayback Machine at <https://archive.org/web>

Any digital material and resources associated with this volume will be available at <https://doi.org/10.11647/OBP.0376#resources>

Semitic Languages and Cultures 25

ISSN (print): 2632-6906

ISSN (digital): 2632-6914

ISBN Paperback: 978-1-80511-149-8

ISBN Hardback: 978-1-80511-150-4

ISBN Digital (PDF): 978-1-80511-151-1

DOI: 10.11647/OBP.0376

Cover image: A fragment of a Hebrew Bible manuscript (Leviticus 18.15-19.3) from the Cairo Genizah (Cambridge University Library, T-S A3.30). Courtesy of the Syndics of Cambridge University Library.

Cover design: Jeevanjot Kaur Nagpal

The main fonts used in this volume are Charis SIL, SBL Hebrew, and SBL Greek.

3. TRACKING THE PARTICIPANTS

1.0. Introduction

For a social network analysis of the Holiness Code, participant tracking is the obvious first step.¹ The people of the Holiness Code are members of an implied social network, and in order to investigate their interactions, it is necessary that they first be consistently delineated. This is the task of participant tracking. In everyday reading or conversation, participant tracking may seem like a trivial task. After all, readers hardly spend much time pondering ‘who is who’ when reading a text or engaging in dialogue. They intuitively rely on grammatical understanding, semantic knowledge, and cultural conventions to subconsciously organise the participants in their minds. The subtle interaction of grammatical cohesion and cultural or literary convention is a challenge, however, to the study of participants from ancient texts like the Holiness Code, because we cannot be sure whether our cultural and literary awareness is aligned with the text or imposed by the modern reader. In relying on intuition, there is an inherent risk of misreading the text or perhaps harmonising complexities in it which could otherwise reveal interesting rhetorical or ideological concerns.

¹ This may even be true for exegesis: “To a large extent one could even call exegesis a kind of participant analysis: who is who in a text and how do the various participants, the writer and the reader included, interact?” (Talstra 2016a, 245).

An instructive example is found in Lev. 25.17: “You shall not cheat one another, but you shall fear your God; for I am YHWH your God.” At first glance, the sentence seems straightforward. A cursory reading will associate the “I” with YHWH. After all, the “I” is explicitly identified with YHWH. The sentence is perplexing, however, for at least two reasons. Firstly, “you shall fear your God” puts God in the third person, as if this “God” is different from the “YHWH your God” identified with the first-person reference. Are the addressees simply commanded to fear whatever god(s) they observe? Or is the same God referred to in both the first and third person in the same verse? Secondly, the verse is part of a speech which Moses is commanded to speak on behalf of YHWH (25.1–2). V. 17 is thus part of Moses’ speech. This observation would explain why the first instance of “God” is put in the third person in v. 17, since Moses would logically refer to God in the third person. A disturbing thought emerges, because if this interpretation is indeed true, is Moses then the “I”? Does he refer to himself as “YHWH your God”? Why would Moses not simply say “You shall fear God, for *he* is YHWH your God”? Is the complexity evidence of a rhetorical device purposefully employed by the author to put YHWH in the first person for some communicative reason? Or are Moses and YHWH deliberately conflated or associated for theological purposes? This issue will be discussed further below (§3.6), but it illustrates well the complexities of texts—Biblical texts included—which too often evade the eyes of the reader. The procedure of participant tracking proposed in this chapter, then, is all about formalising the otherwise intuitive process of identifying participants. The purpose of doing

this is to reveal the complexities of the text by suspending the tendency for human readers to harmonise discrepancies. To assist participant tracking, a computational approach will be presented and discussed. The benefit of computational approaches is that computers excel at tracking formal grammatical connections, e.g., the links between subjects and predicates based on morphological agreement, but they cannot normally identify connections between participant references on the basis of semantics. For example, they cannot usually track down synonyms, because synonyms are not formally connected, but rely on the meaning evoked in the mind of the hearer/reader. For this reason, a computational approach can help the researcher to be aware of the border between syntax and semantics.

The participant-reference analysis undertaken in this study stands on the shoulders of Eep Talstra, who pioneered the study of participant tracking in the Hebrew Bible. He is the creator of several computer programs that can track and systematise the participants of a text, from the smallest linguistic entities to text-level participants. Talstra kindly created a state-of-the-art dataset for the purposes of the present study—a dataset now freely accessible online (2018b). The dataset reveals important issues pertaining to participant tracking, and the aim of this chapter is twofold. On the one hand, the complexities seen in the dataset will be reviewed, and resolutions will be suggested whenever possible. On the other hand, abnormalities may not be resolved by strict linguistic and structural analysis, but may rather point to pragmatic functions, which will be discussed accordingly.

2.0. Methodology and Data

2.1. Methodology

Despite the fact that the ‘who is who’ question must be fundamental to exegesis and translation, only a minority of studies have been dedicated to a systematic analysis of participant references in the Hebrew Bible. Here I will briefly mention the most important ones, before presenting Talstra’s procedure in more detail. In his study of the Joseph story (Gen. 37; 39–48), Robert E. Longacre (2003; originally published 1989) proposed an “apparatus” for participant references (including nouns, proper names, pronominal elements, and null references, among others) as well as a ranking of participants with respect to their roles in the narrative. Informed by social linguistics, Longacre showed how linguistic entities were consciously employed to introduce or track a participant with a certain role.² Lénart J. de Regt (1999a) documented both usual patterns and special patterns of participant-reference shifts throughout the Hebrew Bible, with reference to the marking of major and minor participants and their (re)introductions in the text (see also De Regt 2001; 2019). Steven E. Runge (2006) investigated the encoding of participants in Gen. 12–25 and Exod. 1–12. In particular, his study provided a discourse-functional description of the encoding of participants based on semantic and cognitive constraints. Oliver Glanz (2013)

² Longacre (2003, 141) lists seven “operations” that can be performed in Biblical narratives using the “apparatus” of participant references: 1) introduction; 2) integration; 3) tracking; 4) reinstatement; 5) confrontation; 6) contrastive status; and 7) evaluation.

studied the participant-reference shifts in Jeremiah with respect to unexpected changes of grammatical person, number, and gender. De Regt's and Glanz's insights are relevant for the discussion of divine communication patterns in Leviticus (see §3.6). Most recently, Christiaan M. Erwich (2020) has created an algorithm for parsing Biblical texts to detect all sorts of referring entities, called mentions (i.e., all entities with marking of person, gender, and/or number), and to resolve co-referring entities. Although his research focused on the Psalter, the algorithm is applicable to all books of the Hebrew Bible. The algorithm certainly does not solve all exegetical problems pertaining to participant references, but it clearly shows the scope of formal participant tracking and where literary analysis should rightly begin. In contrast to De Regt and Glanz (and Talstra; see below), however, Erwich does not discuss the patterns of reference shifts. Moreover, most probably for practical reasons, he does not consider the complexities of synonyms and part-whole relationships, as is done in Talstra's research and the present study (see §§3.8–3.9). Regrettably, due to the time constraints of the present project, I have not had the opportunity to relate Erwich's findings more specifically to my own participant data from Leviticus.

The most important contributions to the systematic study of participant tracking in the Hebrew Bible were made by Talstra. Because Talstra's dataset of participants in Lev. 17–26 will form the backbone of the present participant analysis, his methodology deserves an introduction. Talstra has always opted for a bottom-up methodology for the grammatical description of linguis-

tic structures. This procedure was implemented at the very beginning of the creation of the WIVU database of the Hebrew Bible at the Werkgroep Informatica at Vrije Universiteit in Amsterdam.³ According to this methodology, text parsing begins with a structural analysis of the distributional entities of the text, words and morphemes. At later stages, the objects are parsed into word groups (phrases), clauses, and sentences. The distributional approach is followed by linguistic analysis to calculate the functions of words, phrases, and clauses by means of identifying patterns of linguistic behaviour. Thus, the methodology can be termed a form-to-function methodology.⁴ The form-to-function approach has also been the basis for Talstra's manifold experiments in participant tracking, which include works on Zechariah (2018a), Exod. 16 (2014), and Exod. 19 (2016a; 2016b). Talstra has described his procedure in one of his articles on Exod. 19 (2016b). The procedure follows eight steps, as briefly outlined here:

1. **Identification:** All possible participant-reference candidates (PRef) are selected on the basis of grammatical features marking person, gender, and/or number. Clear

³ For a detailed account of the methodology, see Talstra and Sikkel (2000; see also Talstra 2004). For a technical description of the data creation process, see Kingham (2018).

⁴ "I decided not to try to begin with the design of a set of grammatical rules, to be applied by a computer programme in performing the morphological and syntactic parsing. But from that very start and continually so in the group of the colleagues that joined me in the project, we have tried to use the Biblical texts as an area of testing proposals of syntactic parsing" (Talstra 2003, 8)—a draft kindly shared with me by Eep Talstra. For the published, shortened version, see Talstra (2004).

cases are finite verbs, personal pronouns, and pronominal suffixes. Cases with gender and number information only are also included, that is, demonstrative pronouns, nouns, and NPs. Some phrases, called ‘compound phrases’ or ‘complex phrases’ (the latter designation employed in this study), contain multiple subunits and require further analysis, since the components of the phrase may themselves be referring to entities apart from the phrase itself. This issue is discussed further below (§3.1).

2. **Testing:** It is tested how the PRefs can be matched to one another. There are generally three mechanisms: Firstly, suffixes may refer back to another suffix or a noun phrase. Secondly, subjects co-refer with their verbal predicates. And thirdly, lexemes co-refer with identical lexemes in the text. While identical lexemes can easily be mapped across the entire text, the two former linking procedures normally apply only within the same textual domain.⁵ Nominal clauses offer a separate challenge, since the subject and the non-verbal predicate need not be co-referring. Thus, additional analysis is required for nominal clauses (see §3.2).

⁵ A textual domain is formed by one or more sentences and comprises an entire stretch of discourse (narrative or direct speech). A text is formed by one or more textual domains which form a textual hierarchy. Direct speech domains are often embedded in narrative speech introductions, and direct speeches may even contain portions of narrative or embedded direct speech. The recognition of textual domains is imperative for a successful participant-tracking analysis, because participant references usually change across domain boundaries (see step 4 below).

3. **Participant sets:** Sets of PRefs matched by any of the linking mechanisms described in step 2 are combined into so-called participant sets (PSet). By implication, PRefs with no matches are skipped (see further discussion in §3.3). However, first-person and second-person references are always accepted as PSets. In most cases, they refer back to references in other domains. The linking procedure sometimes encounters different referents with identical references. Further analysis is needed to disambiguate these references (see §3.4). Finally, each PSet is given a relevant label derived from the text (most commonly, proper name, NP, or pronoun).
4. **Communication patterns:** PSets are linked across domains by introducing new linking rules. While third-person references can easily be mapped onto identical lexemes in other textual domains, first- and second-person references require a different set of rules. In particular, when the border between a narrative domain and a direct speech domain is crossed, the participant references normally change. Firstly, the speaker of a quotation is normally introduced in the third person in a narrative domain and referred to in the first person within the quotation itself. Secondly, the audience is introduced in the narrative domain in the third person and normally addressed in the second person in the quotation domain. Therefore, speaker and audience must be linked across domains by taking these participant-reference shifts into account.

5. **Lexical identity:** The remaining PSets that are not part of any communication patterns are linked beyond domain level. Typically, third-person references are linked across domains based on lexical identity.
6. **Participant actors:** The connected PSets are connected at a higher linguistic level using the label ‘participant actor’ (PAct). This step subsumes the linking mechanisms of steps 4 and 5 (communication patterns and lexical identity). At this stage of participant tracking, a number of linguistic phenomena require additional analysis, most significantly because of divergences from normal communication patterns. In Lev. 17–26, abnormalities have been encountered with respect to both sender/speaker (§3.6) and addressee/audience (§3.7). The crucial question is whether these phenomena represent syntactic patterns to be handled in a formal participant tracking algorithm or can only be resolved by recourse to semantics or literary analysis.
7. **Synonyms:** Some PActs are likely to be co-referring despite their different labels. The most frequent issue is probably יהוה ‘YHWH’ and אֱלֹהִים ‘God’, which cannot be combined on the basis of lexical identity but nevertheless refer to the same participant. The collocation of synonymous PActs enters a domain where linguistic and literary analysis meet, since a purely formal analysis can hardly account for all relevant cases. Moreover, the collocation of synonymous PActs evokes literary and rhetorical con-

siderations, because different references to the same participant may serve pragmatic purposes (e.g., the references יהוה ‘YHWH’ and אֱלֹהִים ‘God’ may not simply be employed for the sake of variation; rather, each reference may carry its own theological import). A number of such phenomena are encountered in Leviticus (see §3.8).

8. **Participant clusters:** Some PActs are similar but not entirely synonymous. Rather, they constitute part-whole relationships (e.g., ראש הַהָר ‘top of the mountain’ is part of הַהָר ‘the mountain’). These references denote a specific part or member of a participant and thus form clusters of related participants. The clustering of related participants allows for a distinction between main actors (e.g., ‘the mountain’) and dependent actors (‘top of the mountain’). The implications of this for Lev. 17–26 are discussed in §3.9.

2.2. The Dataset

The Talstra dataset of Lev. 17–26 consists of 4,092 rows and 370 different participant actors (PActs). A sample of the dataset is found in Table 1 (excluding book, chapter, and verse references for the sake of space). The second column, ‘surface text’, contains the surface text of the Hebrew text. ‘Line’ refers to the so-called clause atom, but relative to the chapter; that is, the first clause atom of a chapter is the first line.⁶ ‘Pred’ contains the verbal predicate of the clause, while ‘lexeme’ supplies the lexemes of the

⁶ The clause atom annotation is the result of the distributional analysis of the Hebrew text represented in the ETCBC database. The numbering

surface text. ‘PSet’ contains the participant sets calculated in step 3 (see Talstra’s eight-step methodology above). ‘PAct’ refers to the participant actors calculated in step 6. In many cases, apart from the sample below, a reference is not given, because only references with co-referring matches are included in the analysis. The two last columns provide the first and last slot of the participant reference relative to the line.

Table 1: The first five rows of the participant tracking dataset (Lev. 17.1–2a)

Ref	Surface Text	Line	Pred	Lexeme	PSet	PAct	First Slot	Last Slot
1	יָדַבֵּר ‘[he] said’	1	דָּבַר	דָּבַר	3sm = יהוה ‘YHWH’	יהוה ‘YHWH’	2	2
2	יהוה ‘YHWH’	1	דָּבַר	יהוה	3sm = יהוה ‘YHWH’	יהוה ‘YHWH’	3	3
3	אֶל-מֹשֶׁה ‘to Moses’	1	דָּבַר	אֶל מֹשֶׁה	0sm = מֹשֶׁה ‘Moses’	מֹשֶׁה ‘Moses’	4	5
4	לְאמֹר ‘saying’	2	אָמַר	לְאמֹר	3sm = יהוה ‘YHWH’	יהוה ‘YHWH’	1	2
5	יָדַבֵּר ‘speak’	3	דָּבַר	דָּבַר	2sm =	מֹשֶׁה ‘Moses’	1	1

3.0. Participant-Tracking Phenomena in Lev. 17–26

In what follows below, important linguistic phenomena concerning the participant tracking of Lev. 17–26 will be discussed and related to Talstra’s eight-step procedure outlined above. I have not had access to Talstra’s computer programs, so the present

of clause atoms thus follows the distributional order of the text. Each clause fragment is considered a clause atom, and one or more clause atoms form a complete clause (see Talstra and Sikkell 2000).

analysis relies on a systematic cross-validation of the dataset to detect patterns of participant tracking. The cross-validation involves both computational detection of general patterns and manual inspection of the annotations.

3.1. Complex Phrases

Complex phrases are phrases with multiple constituents, which pose a fundamental challenge to participant tracking. Talstra (2016b, 13) hints at the issue in his consideration of the prepositional phrase לְזִקְנֵי הָעָם ‘to the elders of the people’ (Exod. 19.7), which is a complex phrase comprised of two nouns in a construct chain.⁷ The question is whether both nouns should be considered participants. In Exod. 19, which is the text under consideration in Talstra’s study, עַם ‘people’ occurs in other constructions, suggesting that the noun is a referring entity and not merely modifying the elders. זֶקֶן ‘elder’ is not an independent reference and does not occur elsewhere in Exod. 19, so it is not treated as a referring entity. Thus, the complex phrase לְזִקְנֵי הָעָם consists of two referring entities, ‘people’ and ‘elders of the people’. It is clear, then, that complex phrases can be operating at various levels of grammar, in this case the phrase level and the word level.

⁷ A construct chain is formed by two or more nouns juxtaposed. In its simplest form, the chain consists of a noun in the construct state followed by a noun in the absolute state, e.g., בְּנֵי יִשְׂרָאֵל ‘sons of Israel’. The absolute state is the base form of the word, whereas the construct state is a derived form that signals a constructional relationship with the subsequent word. Here, the first member of the construct chain will be called the *nomen regens* and the last member the *nomen rectum*. For further explanation, see Van der Merwe et al. (2017, §25).

may indeed refer to participants of the text, but this is not necessarily so. Semantically, the phrase is curious, because it appears that Aaron, Aaron's sons, and the Israelites are three distinct entities. One might actually, on the other hand, expect Aaron and his sons to be members of 'all the sons of Israel'. In fact, when a new participant, *בֵּית יִשְׂרָאֵל* 'the house of Israel', is introduced in the following verse (v. 3), does that participant refer merely to 'all the sons of Israel', or does it include Aaron and his sons? In other words, the semantic delineation of these participants is anything but clear. With respect to participant tracking, the question is whether the complex phrase concerns three distinct participants, or perhaps one major participant ('all the sons of Israel') with two specified subspecies. Although curious, the phenomenon is not rare in literature and speech. Indeed, it is a common feature of speech to vary between the use of group-references of which the participant is a member, and individual references to the participant in question. In light of the present project, the three participants are considered distinct. This choice allows for the analysis of the roles of Aaron, his sons, and the Israelites (excluding Aaron and his sons) over against one another (see chapter 7, §5.1.2). One implication of this choice is that the laws of Lev. 18–20 are treated as addressed solely to the lay Israelites, excluding the priests. Obviously, the laws apply to all members of the society, including the priestly class. On the other hand, the sons of Israel and the priests (Aaron and his sons) sometimes refer explicitly to two different entities (e.g., 22.2–3). In

all the sons of Israel', *כָּל-* 'all', *בְּנֵי יִשְׂרָאֵל* 'the sons of Israel', *בְּנֵי* 'the sons', and *יִשְׂרָאֵל* 'Israel'.

short, therefore, participants are not always distinct and may even overlap. In some cases, a semantic overlap may be dealt with by specifying part-whole relationships (see §3.9). In any case, since the present project relies on a clear delineation of participants, the resulting list of participants bears evidence of compromise (see §3.10).

Returning to the complex phrase of Lev. 17.2, one wonders whether ‘Israel’ is a real, independent participant or whether it merely qualifies ‘the sons’. In fact, the lexeme ‘Israel’ occurs eight times in Lev. 17 and only in genitival constructions, including ‘sons of Israel’ (17.2, 5, 12, 13, 14) and ‘house of Israel’ (17.3, 8, 10). Furthermore, is לֵאלֹהֵי ‘all/anyone’ a participant reference, or does it rather modify ‘sons of Israel’? That is, should the phrase be translated ‘the entirety of the sons of Israel’ or ‘all the sons of Israel’? Strictly speaking, since לֵאלֹהֵי is a noun and part of a noun chain, it could be considered a member of ‘sons of Israel’; hence, ‘the entirety of the sons of Israel’. Logically, however, לֵאלֹהֵי does not denote a participant other than ‘sons of Israel’, but simply signifies that the entire people is addressed. In this case, therefore, we should treat לֵאלֹהֵי as a modifier rather than a participant reference on its own. The policy implemented by Talstra (2016b, 13) is to treat לֵאלֹהֵי as a modifier except in cases where the word is used as an independent noun phrase. More generally, the solution to dealing with complex phrases lies with the matter of formal dependency. A formally independent participant is a participant that occurs either as an independent noun phrase or as the last noun of a construct chain, the so-called *nomen rectum*. Formally

dependent participants, by contrast, never occur in these constructional slots. For this reason, 'Israel' is in fact considered an independent participant in Lev. 17, because it is always the last word of the construct chains. By contrast, 'sons' never occurs independently in that chapter. There are no בְּנֵי 'sons' apart from 'his sons' (17.2) and 'sons of Israel'. Therefore, 'sons' is not considered a participant on its own. Neither is כָּל 'all/anyone', which is also formally dependent in Lev. 17.2a. Although the lexeme occurs eight times in the chapter, it occurs only in construct chains, including כָּל-בְּנֵי יִשְׂרָאֵל 'all the sons of Israel' (17.2), כָּל-דָּם 'any blood' (17.10), כָּל-נַפְשׁ 'any soul' (17.12, 15), כָּל-בָּשָׂר 'any/all flesh' (17.14 [$\times 3$]), and כָּל-אֹכְלֵי 'anyone eating it' (17.14).

In sum, the use of independency as a criterion allows for the automatic disregarding of nouns that are not independently referring to a textual participant. Thus, rather than all four sub-phrases of 'all the sons of Israel' being considered participants, only two are: בְּנֵי יִשְׂרָאֵל 'sons of Israel' and יִשְׂרָאֵל 'Israel'.

3.2. Nominal Clauses

The second step of the participant-tracking procedure is to test linking mechanisms for matching co-referring entities within the same domain, including subjects and predicates. Not surprisingly, in the dataset, subjects and their verbal predicates normally refer to the same referent (95.57% of the cases). For nominal clauses, the picture is different.⁹ In nominal clauses with explicit subject and predicate, only 56.47% of the predicates refer

⁹ Scholars disagree as to the precise definition of nominal clauses. While it is generally acknowledged that a nominal clause distinguishes itself

to the referent of the subject. In the remaining nominal clauses, predicate and subject are annotated differently.¹⁰ The difference is striking and points to an important issue. In many cases, it is reasonable to consider the subject and its non-verbal predicate to refer to the same referent, for example the common declaration אֲנִי יְהוָה ‘I am YHWH’ (1). In this case, both references refer to the same participant. In other cases, however, the relationship between the subject and the predicate is less identical (2):¹¹

(1) אֲנִי יְהוָה

‘I **am** **YHWH**.’ (Lev. 18.6)

from verbal clauses by containing a non-verbal predicate, the non-verbal predicate has been defined in various ways. While Richter (1980, 12) argues that the term ‘nominal clause’ should be reserved for clauses without any verbal morpheme, it has been common to at least include the copula *היה* ‘be’ (Joüon and Muraoka 1993, §154; Dyk and Talstra 1999). De Regt (1999a) excludes participles from his definition of nominal clauses (see also Gross 1980), while Niccacci (1999, 243) treats clauses with verbal predicates in the second position as nominal clauses, because, according to him, the verb “plays the role of a noun.” Baasten (2006) argues that what is normally called a ‘nominal clause’ should rightly be called a ‘non-verbal clause’, because the predicate of a non-verbal clause can be a nominal, a prepositional, or an adverbial phrase, among other things. An introduction by Miller (1999) summarises the “pivotal issues” in the analysis of the nominal clause (‘verbless clause’ in her terminology). In the present discussion, a nominal clause is defined as a clause with a subject and a non-verbal predicate, though this includes participles and the copula *היה* ‘be’.

¹⁰ The calculation does not take into account those clauses where the subject is not annotated.

¹¹ The predicate is highlighted in red.

(2) כְּאַזְרַח מִמֶּם יְהִי־לָכֶם הַגֵּר | הַגֵּר אִתְּכֶם

‘Like a native of you shall the sojourner sojourning among you be to you.’ (Lev. 19.34)

The meaning of the nominal clause in (2) is not that the sojourner and the native Israelite are the same—quite the opposite. The distinction is maintained, but the sojourner is to be treated as if he were a native. Thus, in this case, the subject and the predicate refer to two different participants. More precisely, the predicate *qualifies* the subject by relating the subject to the group expressed by the predicate. The difference between the two examples just given can be captured as the distinction between *identifying* predicates and *classifying*—or *descriptive*—predicates that has been noted by several linguists (Waltke and O’Connor 1990, §8.4; Joüon and Muraoka 1993, §154ea; Andersen 1970, 31–34).¹² Francis I. Andersen, who introduced the terms to explain the semantic relationship between subjects and predicates in nominal clauses, explained that an identifying predicate supplies the identity of the subject and has a total semantic overlap with the subject. A classifying predicate, on the other hand, only has a partial

¹² Joüon and Muraoka (1993, §154ea) use the term ‘descriptive’ for classifying predicates because, according to them, this designation accounts better for existential and locative sentences. Moreover, their use of ‘identification’ differs significantly from other accounts in that, for the clause to be identifying, the predicate needs to *uniquely* indicate and identify the subject. They offer ‘I am Joseph’ as an example of a sentence that would normally be interpreted as an identification clause but, according to their definition, could also be a descriptive clause, if the subject were construed as belonging to the class of men called Joseph.

semantic overlap with the subject and “refers to the general class of which the subject is a member” (Andersen 1970, 32). Bruce K. Waltke and Michael P. O’Connor (1990, §8.4) provide examples to show the difference:

(3) הַיֵּאֱצֹרִי

‘It **is Zoar**.’ (Gen. 14.2)

(4) הַיֵּאֱצֹרִי טָמֵא

‘He **is unclean**.’ (Lev. 13.36)

In (3) the proper noun identifies the pronoun, that is, the referent of the pronoun is identified as the town Zoar.¹³ In (4), the predicate (טָמֵא) classifies the subject (הַיֵּאֱצֹרִי) as a member of a larger group defined as unclean. However, the two examples also raise a more fundamental question: How are the phrase functions, subject and predicate, to be determined in the first place? Andersen (1970) answered the question with respect to the notions of ‘old’ and ‘new’ information. Accordingly, the subject expresses the old or known information to which new information is added (the predicate). Old and new information relate to definiteness, because already known information is likely to be more definite than new information. However, as objected by J. Hoftijzer (1973), definiteness is not a purely formal category for Andersen, but also requires logic and semantics. Hoftijzer himself abandons

¹³ Apparently, in contrast to Waltke and O’Connor, Hoftijzer (1973, 492) interprets this example (Gen. 14.2) as classifying.

the traditional notions of subject and predicate in favour of entirely formal ones.¹⁴ More recently, Janet W. Dyk and Eep Talstra (1999) presented a paradigm for identifying subject and predicate in nominal clauses on the basis of purely formal criteria: phrase type and definiteness. Their proposal involves a basic hierarchy of definiteness based on phrase types, with 10 levels ranked from the most definite: suffix¹⁵ > demonstrative pronoun > personal pronoun > definite NP > proper noun > indefinite NP > interrogative pronoun > adjective > PP > locative. According to Dyk and Talstra, in relation to the choice between subject and predicate, suffixes are always the subject, while prepositional phrases and locatives are normally only the predicate.¹⁶ The remaining forms can be either subject or predicate depending on the other referring phrase in the clause. That is, the phrase with the highest level of determination will be the subject. For clauses with two phrases of identical type, more analysis is required. As a rule, the entity that is most deictic is determined to

¹⁴ The notion of ‘subject’ and ‘predicate’ for distinguishing the constituents of nominal clauses has also been critiqued by Van Wolde (1999) who favours the cognitive categories ‘given’ and ‘new’.

¹⁵ More specifically, suffixes attached to the particles *ישׁ* ‘[particle of existence]’, *אין* ‘[particle of non-existence]’, *הִנֵּה* ‘behold’, *עוֹד* ‘still’, and locatives.

¹⁶ According to Janet W. Dyk (personal conversation), the term ‘locatives’ refers to anything that can indicate a location, including toponyms and nouns like *אֶרֶץ* ‘earth/land’. Until now, however, this particular information has not been sufficiently encoded in the database. Hence, further research is needed to validate the decision tree for choosing between subject and predicate.

be the subject. For example, for a clause with two personal pronouns, a first person pronoun ranks higher than a second person pronoun, which ranks higher than a third person pronoun (Dyk and Talstra 1999, 179). The benefit of this paradigm is that it effectively separates the subject-predicate determination from the semantics of the clause (classifying vs identifying).¹⁷ Moreover, the paradigm does not rely on the word order of the clause, which has often been the case in other paradigms (e.g., Andersen 1970; Joüon and Muraoka 1993, §154; Waltke and O'Connor 1990, §8.4). In fact, word order more likely correlates with information structure and, in particular, the marking of topic and focus (Lambrecht 1994).¹⁸

¹⁷ It should be noted that Dyk and Talstra's paradigm is not reflected perfectly in the version of the database used in the present project (BHSAc). Even the corpus treated in Dyk and Talstra's paper was either not completely parsed with the suggested algorithm or was later overwritten with new annotations. For example, Dyk and Talstra (1999, 153) determined the demonstrative pronoun in הַאֲתָהּ הַזֶּה 'is this you?' (1 Kgs 18.7) to be the subject, due to its relatively higher degree of definiteness. However, in the current version of the database (accessed 6 June 2023), the personal pronoun is annotated as the subject.

¹⁸ Information structure is the component of sentence grammar that conceptualises the pairing of mental propositions (or states of affairs) with the lexicogrammatical structures of the sentence. The term was first coined by Halliday (1967), but the theory received its most profound treatment in Lambrecht (1994). According to this theory, syntax is not autonomous, but rather a vehicle for expressing mental ideas. That is, the speaker employs word order, among other lexicogrammatical tools, to utter a proposition in accordance with what he assumes the

I suggest, then, that the participant-tracking analysis of nominal clauses must proceed in two steps. Firstly, subject and predicate are determined on the basis of relative definiteness. Secondly, the meaning of the clause can be determined according to the definiteness of the predicate. If the predicate is an indefinite NP, or less definite according to Dyk and Talstra's hierarchy, then the predicate is classifying. If the predicate is a proper name or more definite, the predicate is identifying. This paradigm helps to sort out some difficult nominal clauses in Lev. 23:

(5) מועדי יהוה אשר תקראו אתם מקראי קדש

'The appointed times of YHWH, which you shall proclaim, **are holy convocations.**' (Lev. 23.2)

(6) ומנחתו שני עשרנים סלת בלולה בשמן

'Its grain offering **is two-tenths of choice flour mixed with oil.**' (Lev. 23.13)

(7) אף בעשור לחדש השביעי הזה יום הכפרים הוא

'Now, on the tenth [day] of this seventh month, **the day of atonement** it is.' (Lev. 23.27)

In (5), the subject is identified as מועדי יהוה 'appointed times of YHWH' because its *nomen rectum*, יהוה 'YHWH', is more definite

hearer to already be cognitively aware of or not. Among the key components of information structure are topic and focus, the former referring to the information presupposed to be known by the hearer and the latter to the new assertion. The concept of information structure was adopted in RRG, where it was proposed that languages have specific inventories of syntactic structures available for the speaker to communicate a particular proposition (Van Valin 2005, 13).

than the *nomen rectum* of the second constituent, קֹדֶשׁ ‘holy’, which is an undetermined noun. Since the predicate is indefinite, it is reasonable to interpret the appointed times of YHWH as belonging to the class of ‘holy convocations’, hence a *classifying* clause. In (6), the first constituent, מִנְהַרְוֹ ‘its grain offering’, is definite, in contrast to the second constituent, which is an indefinite noun phrase. Therefore, the first constituent is the subject, and the predicate *classifies* or describes the grain-offering, that is, the grain offering is one of choice flour. The sentence in (7) consists of three constituents: a complex time phrase, a definite noun phrase, and a personal pronoun. The main challenge is to identify the antecedent of the personal pronoun (הוּא ‘he/it’). Probably, the antecedent must be inferred from the time phrase which presupposes the noun יוֹם ‘day’, marked by the square brackets in the translation. If this interpretation is true, the time phrase is a *casus pendens* that reactivates the time frame (notice the demonstrative pronoun הַזֶּה ‘this’) first introduced in v. 24.¹⁹ According to the paradigm, then, the personal pronoun is the subject, and the

¹⁹ The *casus pendens* is a dislocated constituent preceding the clause, and is commonly accepted as a means for a speaker/writer to reactivate a topic (Khan 1988; Westbury 2014; Jensen 2017). According to Givón (2001, II:265), the *casus pendens* (or ‘left dislocation’) is a referent-encoding device with one of the highest anaphoric distances. This means that the left dislocation can pick up a topic over a long distance in the discourse. With respect to the HB, instances of *casus pendens* occur “particularly frequently” in the legal material (Khan 1988, 98; see in particular his appendix on extraposition in legal formulae, pp. 98–104).

noun phrase the predicate. Given the definiteness of the predicate, the predicate is *identifying*; hence, the specific day referred to by the pronoun is identified as the day of atonement.

In sum, the two-step procedure proposed here on the basis of Dyk and Talstra's paradigm for determining subject and predicate proves useful for interpreting the nominal clauses of Lev. 17–26. This task is useful not only for exegesis but also for participant tracking, because it provides the means by which to discern whether the clause contains two participants (classifying) or only one (identifying).

3.3. One-Time Participants

The participant-tracking methodology proposed by Talstra is essentially about clustering participant references according to co-reference. By implication, any participant must have at least two references; otherwise, no clusters will be formed, and no textual participant will be derived. The advantage of this procedure is that many non-referential nouns are left out of the analysis simply due to their infrequency. The dataset contains 370 unique PActs, and that number would probably have been much higher if all references were included. The downside of the approach is the neglect of participants which are indeed referential but only occur once in a chapter. In the analysis of Lev. 17.2a above, (§3.1) the reference 'his sons' was only briefly considered. The subphrase refers to Aaron's sons, who are members of the group of addressees in the clause 'speak to Aaron, and to his sons, and to all the sons of Israel'. While 'Aaron' occurs twice in the chapter and 'sons of Israel' multiple times, 'his sons' only occurs once. As

a consequence of the participant-tracking methodology, ‘Aaron’s sons’ is not considered a participant in the analysis, because of its single attestation. Other participants are also ruled out on this account, including אֶזְרָח ‘native’ (18.26), עָנִי ‘poor’ (19.10), בְּלָתוֹ ‘his daughter-in-law’ (20.12), אֱלֹהִים ‘God’ (22.33), and שְׁלֹמִית ‘Shelomith’ (24.11), none of which occurs more than once in their respective chapters. As for the last example, it is particularly interesting. While most participants in H are anonymous, a few are named, including Moses, Aaron, and YHWH. To this narrow group belongs Shelomith, the mother of the blasphemer in the narrative of Lev. 24.10–23. However, although she is named, she is only named with respect to her relationship with the blasphemer, so she does not have an independent role in the text. Therefore, the program may do well in skipping this reference. As for the second example in the list above, ‘the poor’, it is skipped, even though it is grammatically definite and, hence, referential. Moreover, ‘the poor’ occurs in parallel to גֵּר ‘sojourner’, which is in fact tracked because it reappears in 19.33. Thus, the neglect of referents with only one occurrence sometimes leads to the omission of a participant. A solution to this issue may therefore be to consider the definiteness of one-time, independent participant references, since definiteness signals referentiality. In the present study, the relevant participants have been included manually in the pile of human/divine participants under consideration.

A slightly different phenomenon is found in Lev. 23. In this chapter, the noun קִצִּיר ‘harvest’ occurs four times, but always with different genitival modifiers: קִצִּירָה ‘its harvest’, that is, the

harvest of the land (23.10), קְצִירְכֶם 'your (Pl) harvest' (23.10), אֶת-קְצִיר אֲרָצְכֶם 'the harvest of your (Pl) land' (23.22), and קְצִירְךָ 'your (Sg) harvest' (23.22). Thus, although קְצִיר occurs multiple times, it is always modified by different nouns or suffixes and is therefore not considered a participant.

Another problem arising from the 'one-time reference issue' is that actors that only occur once in a chapter may actually have co-referents in other chapters of the text. For instance, while אֲזָרָה 'native' only occurs once in Lev. 18, it also occurs in 17.15; 19.34; 23.42; 24.16, 22. Because the computer programs only work at chapter level, they will not map co-referring entities from different chapters in the larger context. The speech in Lev. 25–26 is another example of this issue. Despite the fact that the speech in Lev. 25 is continued and concluded in chapter 26, the two chapters are treated separately in the dataset. As a consequence, the audience is labelled differently in Lev. 25 and 26. In the first chapter, the audience is labelled בְּנֵי יִשְׂרָאֵל 'sons of Israel' because of the speech introduction in v. 2, whereas in the second chapter, the audience is only implied and is therefore labelled אַתֶּם 'you', probably based on the 2MPI suffixes in 26.1. This issue points to the intrinsic relationship between participant tracking and discourse structure. A discourse may cover multiple chapters, such as Lev. 25–26, or may even be reduced to a few verses, such as the three speeches in Lev. 22 (vv. 1–16, 17–25, 26–33). In the latter case, the participants are reintroduced, and identical participant references cannot automatically be mapped across the borders of the speeches. Therefore, when conducting participant tracking for multiple chapters (or multiple discourses within the

same chapter), one will need to consider whether the participants of one chapter are the same as similar-looking participants in another chapter. For the participant analysis of Lev. 17–26, this is a crucial step, since it can be reasonably hypothesised that these chapters form a literary unit within the book of Leviticus and that the participants recur throughout the chapters. It is therefore necessary to introduce a new step of participant tracking where actors are fetched from each chapter of a longer discourse and mapped onto identical actors in other chapters.

3.4. Identical References

The genre of H poses a specific challenge for participant tracking. As a law text, the text involves numerous abstract participants in order to present legal cases. Commonly, an abstract participant is introduced by an indefinite NP, e.g., *איש* ‘a man/anyone’. Other options are the indefinite *כל* ‘anyone’ (17.14), *נַפְשׁוֹ* ‘soul’ (17.15), *אָדָם* ‘human being’ (18.5), or *אִישׁ אִוְּאִי־אִשָּׁה* ‘a man or a woman’ (20.27). In contrast to individuals such as Moses or Aaron, these entities do not refer to a person in the ‘real’ world. It is questionable whether these words should be considered participants at all, because when they claim to refer to ‘anyone’, they operate on a different level to real participants like Moses and Aaron, ontologically speaking. They cannot be delineated as participants, because ‘anyone’—in fact, ‘everyone’—is included in them. On the other hand, it is interesting to observe how the text itself carefully distinguishes these vague references. ‘Anyone’ is not always ‘anyone’. Indeed, the text introduces delineations which have le-

gal value and social implications and thus contribute to the analysis of the social network implied by the text. With these caveats in mind, indefinite, pronominal NPs are included in the analysis.

Lev. 17 offers the first example where ‘anyone’ is not simply ‘anyone’. The chapter contains four case laws, each introduced by *כִּי־אִשׁ* ‘anyone’ (vv. 3, 8, 10, 13). A fifth case is given in 17.15, now introduced in a more generalised way by referring to *כָּל־נַפְשׁ* ‘any soul’. The case laws all deal with cultic regulations on animal slaughter, each one dealing with different aspects: slaughtering of animals outside the Tent of Meeting (vv. 3–7), burnt offerings outside the Tent of Meeting (vv. 8–9), eating of blood (vv. 10–12), hunting of animals (vv. 13–14), and purification (vv. 15–16). Much scholarship has focused on the diachronic relationship between Lev. 17 and Deut. 12.²⁰ From a participant-tracking point of view, another issue is likewise complicated. A simple participant-tracking algorithm may treat the references to *כִּי־אִשׁ* as referring to the same participant. This procedure can indeed be followed in some instances. However, it is common in law texts to specify the referent if needed. In 17.3, ‘anyone’ is specified as someone belonging to the ‘house of Israel’, but in the remaining cases, additional phrases are employed to specify that ‘anyone’ is someone from ‘the house of Israel or from the sojourners living

²⁰ Milgrom (2000, 1319–67), in particular, has argued for the priority of Lev. 17 over Deuteronomy (see also Kilchör 2015), while Otto (1999; 2008; 2015) has argued for the opposite view, namely, that the prohibition against profane animal slaughter in Lev. 17 is a revision of the Deuteronomic legislation. For a discussion of their views, see Meyer (2015a).

among them'. For this reason, participant tracking can be quite complicated, since it must take into account complex constructions, including restrictive relative clauses.

Lev. 25 provides a similar case that is even more difficult. The chapter contains nine attestations of *איש* 'a man/anyone'. The first two are found in v. 10, where the lexeme is used in two elliptic clauses and should probably be translated 'anyone': "And you shall return, anyone to his property; and anyone to his clan, you shall return." In neither of the cases is the reference further modified. The attestations in vv. 13, 14, and 17 are similar. In v. 26, a case law is introduced by the identical *איש*. In this case, however, the reference is followed by a description: 'Anyone without a kinsman redeemer' (lit. 'A man, when there is no kinsman redeemer for him'). To make things more complicated—at least for a computational algorithm—the description is not put in a typical relative clause but in a clause introduced by the conjunction *כי* 'that/when/for'. Thus, the participant is not directly specified, but only by means of a circumstantial or temporal clause. In the subsequent verse (v. 27), *איש* 'anyone' is now going to return the rest of his debt *לְאִישׁ אֲשֶׁר מָכַר-לּוֹ* 'to the man to whom he sold [his property]'. The introduction of another *איש* is not arbitrary, because the reference comes with a restrictive relative clause specifying the other man as the buyer of the property. Nevertheless, as in Lev. 17, the algorithm needs to be able to include relative clauses in the computation to keep track of the various purviews of *איש*. Finally, in v. 29, another case law is introduced by *איש* 'anyone': "A man [anyone], when he sells a dwelling

house of a walled city.” Again, one wonders whether this ‘anyone’ is the same as the ‘anyone’ in v. 26. On the one hand, the references do not refer to ‘real’ participants, so the question remains hypothetical. On the other hand, a consistent participant analysis needs to ponder this question in order to disambiguate or collocate the references. In Talstra’s dataset, the two references are indeed collocated, a reasonable choice given the lack of any restrictive relative clauses or complex phrases such as are found in the case laws of Lev. 17. The approach undertaken by the present analysis has been restricted to considering only complex phrases and relative clauses. Accordingly, *שׁוֹרֵץ* refers to two different participants in Lev. 17 (‘anyone of the house of Israel’ and ‘anyone of the house of Israel or of the sojourners’) and to two different participants in Lev. 25 (‘anyone’ in vv. 10, 13, 14, 26, 29 and ‘the man to whom he sold the property’ in v. 27). For a more fine-grained analysis, other types of modifiers need to be brought into the computation, including temporal/circumstantial clauses, if possible.

3.5. References with Same Gender or Person

The rigidity, positively speaking, of the algorithm that produces the participant dataset of H prompts many interesting exegetical and linguistic questions. Because the program does not allow for ambiguity, every reference needs to refer explicitly to only one participant, even in cases where the text itself is ambiguous. Lev. 21.8 offers one such case in which the interpretation has rather significant implications. In this verse, a second-person reference suddenly appears in *וְאַתָּה דַּלְתָּ* ‘and you (Sg) shall consider him

holy'. The addressees of the chapter are the priests, but they are for some reason addressed in the third person. The program, therefore, has linked the 2MSg reference to the most probable antecedent in this discourse, Moses. By contrast, most commentators interpret the reference as referring to the Israelites, even though they are not directly addressed in this particular speech (e.g., Milgrom 2000, 1808; Hartley 1992, 348).²¹ To be sure, Moses is not an optimal antecedent, since 21.8 is part of Moses' speech to "the priests, the sons of Aaron" (21.1). On the other hand, since the addressees of Moses' speech are in the plural, Moses is the only referent so far having a 2MSg reference (21.1). The disagreement between the computer and human commentators should serve as a caution against far-reaching interpretations dependent upon this particular reference. It has been argued, for example, that the people is responsible for "transferring" holiness to the priests, thus diminishing the special status of the priests (Christian 2011, 368–69; see the discussion in chapter 2, §6.5). However, given the uniqueness of Lev 21.8 and the ambiguity of the text, one should be cautious about drawing historical and theological implications.

In some cases, a degree of ambiguity is apparently allowed for by the computer program in that a reference is not necessarily linked to a possible referent. The same verse (21.8) ends with a 2MPI suffix, which would logically refer to the priests as the addressees of the speech (see v. 1). However, for some reason, the dataset does not contain this connection, but simply labels the

²¹ The Israelites, in the plural, are mentioned in 21.24 in a compliance report that seems to conclude chapters 17–21.

reference ‘2MPI’, probably due to the fact that the priests have so far been referred to in the third person.

In sum, the rigidity of a computational procedure reveals complexities in the text which could easily be ignored by an ordinary reading of the text. In these cases, it may not be possible to decide on a referent with certainty. If more precise results cannot be achieved by further analysis, interpreters should at least treat these cases with caution.

3.6. Divine Communication Patterns

An important component of participant-tracking is the matching of participants across domains. By default, a quotation domain is introduced by a short narrative introduction specifying sender and addressee, for example, “YHWH spoke to Moses, saying” (Lev. 19.1). In the subsequent quotation, first-person references likely refer to the speaker (= sender) and second-person references to the audience (= addressee), for example, “Speak to all the congregation of the sons of Israel and say to them” (19.2ab), where the second-person imperative refers to Moses, the addressee of the narrative introduction.²² In the next sentence, however, the pattern breaks down: “You shall be holy because I, YHWH your God, am holy” (19.2cd). According to the pattern, the first-person reference should refer to the speaker, Moses, as implied by

²² There are exceptions to this pattern, e.g., the unexpected plural suffix in אֲבוֹתֵיכֶם ‘your fathers’ in Zech. 1.2, because the preceding speech introduction has the prophet Zechariah as the addressee. There is thus no antecedent to ‘your’ (PI). For a discussion of this phenomenon, see Talstra (2018a) and Jensen (2016).

19.2ab, but that cannot be true. For some reason, Moses uses the first-person reference to refer to YHWH. While commentators have stressed the rhetorical and structural purposes of the *Selbstvorstellungsformeln* (Hartley 1992, 291–93; Milgrom 2000, 1517–18), the subtle breakdown of the normal communication pattern is not discussed in any commentary on Leviticus that I am aware of. But it is indeed curious that Moses frequently, though not exclusively, refers to YHWH in the first person. At times, YHWH is also referred to in the third person (19.5, 8, 21, 22, 24).²³ Thus, since there is no simple rule that YHWH only holds either first-person or third-person position, we need to study the phenomenon further.

The challenge for a participant-tracking analysis is that no rule seems to be able to account for this unusual communication pattern. As Talstra (2014, 551, 560) notes with respect to an identical phenomenon in Exod. 16, it is “a linguistically unmarked change of speaker” and a case “where linguistic analysis and literary interpretation meet.” In fact, the only way to discern whether the first-person reference refers to Moses or YHWH is to look at the content of the utterances. Another surprising participant shift is found in 17.10, where a verb in the first person is employed to express that “I will set my face against that soul who

²³ As for the reference לַיהוָה ‘to YHWH’ in 19.5, Milgrom (2000, 1619) notes that the referent has been explicitly specified because the Israelites were accustomed to sacrifice to goat-demons (see 17.7) and needed an explicit correction. However, a first-person suffix would be more suitable, since YHWH already holds the first-person position at this point in Lev. 19.

eats the blood, and I will remove it from the midst of its people.” Does the ‘I’ refer to Moses, the direct speaker, or YHWH, the original speaker? Although all commentaries take it for granted that YHWH is the implied speaker, this interpretation is not the only option, since YHWH has frequently been referred to in the third person so far in the chapter (17.4 [$\times 2$], 5 [$\times 2$], 6 [$\times 2$], 9). With regard to the identical case in Exod. 16, Talstra (2014, 563) explains that the unmarked participant shifts between Moses and YHWH bear on a controversy as to who is responsible for the liberation from Egypt.²⁴

Jacob Milgrom (2000, 1518, 1523) likens the *Selbstvorstellungsformel* ‘I am YHWH’ with the prophetic phrase נִאֲמַם יְהוָה ‘utterance of YHWH’ and argues for a primarily structural function of the expression.²⁵ In fact, according to Milgrom, all but one of the *Selbstvorstellungsformeln* in Lev. 17–26 mark the end of a unit.²⁶ Some of these utterances, however, come in such close sequence that they are not likely to mark the end of a paragraph (e.g., 18.4, 5, 6). As for the possible prophetic parallel נִאֲמַם יְהוָה ‘utterance of YHWH’, Glanz (2013) has analysed its distribution and function

²⁴ In several cases, Moses is actually blamed for the exodus (e.g., Exod. 14.11), even by God (Exod. 32.7; 33.1).

²⁵ De Regt (2019, 25–26) notes that the shift between third- and second-person references to YHWH in the Song of the Sea (Exod. 15) serves a structural purpose.

²⁶ The only exception is the one in 18.2b, where the phrase precedes a legal pericope (Milgrom 2000, 1518). Sailhamer (1992, 349) argues that Lev. 19 can be structured according to the *Selbstvorstellungsformeln*, which occur 14 times in the chapter.

in Jeremiah. He argues that the utterance is a “macro-syntactical marker” employed by the speaker to “remind the reader/listener in an objective way [...] that he is still speaking and demanding attention” (Glanz 2013, 264). In Jeremiah, the use of *נְאֻם־יהוה* often entails a participant shift from first person to third person. Glanz interprets the shift as a rhetorical means of “objectivization;” for example, when YHWH encourages the people to pray to him, it is never formulated with a first-person reference (e.g., ‘pray to me’), but always in the third person, even in contexts where YHWH already holds the first-person reference (e.g., Jer. 29.7; Glanz 2013, 281). This particular participant shift is also used to mark discourse shifts, for example the shift from descriptive to explanatory discourse, with the latter argued to be more objective (Glanz 2013, 282).

Some of Glanz’s observations resonate with the participant shifts in Lev. 17–26. For one thing, apart from the *Selbstvorstellungsformeln* and speech introductions, all proper-name references to YHWH concern cultic instructions, most frequently the numerous instructions regarding offering of sacrifices *לַיהוה* ‘to YHWH’.²⁷ The third person is also used to mark YHWH as the beneficiary of sabbaths and feasts (23.3, 5, 6, 17, 34, 41; 25.2, 4) as well as of the rejoicing of the people (19.24; 23.40). The sacrifices are holy *לַיהוה* ‘to YHWH’ (23.20), and atonement is made *לְפָנֵי יְהוָה* ‘before YHWH’ (23.28). The kindling of the lampstand and the arranging of bread in the Sanctum are *לְפָנֵי יְהוָה* ‘before YHWH’ (24.3, 4, 6, 8). Finally, the third person is used to denote

²⁷ 17.4, 5 (×2), 6, 9; 19.5, 21, 22; 22.3, 15, 18, 21, 22 (×2), 24, 27, 29; 23.8, 11, 12, 13, 16, 18 (×2), 20, 25, 27, 36 (×2), 37, 38; 24.7.

YHWH's ownership of the sanctuary (17.4), the altar (17.6), the sacrifices (19.8; 21.6, 21; 24.9), the holy feasts (23.2, 4, 37, 39, 44), and his name (24.16). This bias towards cultic contexts suggests that the distribution of the proper name YHWH is more than merely coincidental. In light of this pattern, only once is a first-person reference used where a third-person one would be expected:

- (8) וַיְדַבֵּר יְהוָה אֶל־מֹשֶׁה לֵאמֹר: דַּבֵּר אֶל־אַהֲרֹן וְאֶל־בָּנָיו וְיִנְזְרוּ מִקֹּדְשַׁי בְּגַי־
 יִשְׂרָאֵל וְלֹא יְחַלְלוּ אֶת־שְׁמִי קֹדֶשׁי אֲשֶׁר הֵם מִקְדָּשִׁים לִי אֲנִי יְהוָה:
 'YHWH spoke to Moses, saying: Direct Aaron and his sons to deal respectfully with the sacred donations of the sons of Israel—so that they do not profane **my holy** name—which they dedicate **to me**. I am YHWH.' (Lev. 22.1–2)

In all other instances where YHWH is portrayed as the beneficiary of a sacrifice or as the 'owner' of his name, the proper name is used. The exception in 22.2, however, is due to the fact that the quotation is not one of direct speech but indirect speech.²⁸ In indirect speech, there are not normally participant-reference shifts, that is, the participants continue to hold the same grammatical person in the narrative introduction and the indirect speech event. Moses, the implicit speaker of the indirect speech, continues to hold the second-person role, while the addressees (Aaron and his sons) remain in the third person. It is thus logical that the direct speaker (YHWH) holds the first-person role in the indirect

²⁸ For the syntax of indirect speech in Biblical Hebrew, see Petersson (2017).

speech quotation.²⁹ The exception in 22.2 shows that reference to YHWH in the third person is the default, or neutral, option in direct speech. By implication, in cases where the third person would be expected (e.g., in Moses' direct speeches), first-person references to YHWH could most likely be rhetorical devices.

In general, first-person references to YHWH occur much more frequently in H than third-person references. Moreover, the first-person references occur in rather diverse semantic contexts compared to the third-person references, which occur exclusively in cultic contexts. Most first-person references to YHWH are found in chapter 26, the long exhortatory discourse where YHWH urges the Israelites to adhere to the law using promises and warnings. In the rest of H, all divine threats of punishment are formulated in the first person,³⁰ as well as all God's provisions, be it the atoning

²⁹ The only other example of an indirect speech in H is found in 24.2–4. This case illustrates that the implied speaker of the indirect speech, Moses, retains his second-person position. There is no first-person reference to the direct speaker (YHWH) within the indirect speech quotation. YHWH is referred to twice by a proper name (לִפְנֵי יְהוָה 'before YHWH'), which would seem to run counter to the argument made here. לִפְנֵי יְהוָה, however, is a frequent phrase in the priestly material (e.g., Lev. 1.3, 5, 11; 3.1, 7, 12; 4.4, 6, 7) and is generally thought of as indicating a place rather than referring to YHWH. As Milgrom (1991, 238) explains with reference to Lev. 4.7, "That 'before the Lord' can refer to the interior of the Tent is shown by Exod. 27.21; 28.35; 30.8; 34.34; 40.23, 25." J. W. Watts (2013, 188) does not want to distinguish between location and theology and treats the phrase as one of "ritual location," that is, when the worshipper stands before the Sanctum, he ritually stands before YHWH.

³⁰ 17.10 (× 3); 18.25; 20.3 (× 3), 5 (× 3), 6 (× 3); 22.3; 23.30.

blood (17.11), the land (20.24), the law (20.25), booths in the wilderness (23.43), or agricultural blessings (25.21). Whenever YHWH is presented as the saviour from Egyptian bondage, this is done in the first person (19.36; 25.38, 42, 55; 26.13, 45). Frequently, YHWH is portrayed as the ‘owner’ of the law,³¹ as well as of the covenant (26.9, 15, 42 [$\times 3$], 44), the sabbath and holy feasts (19.3, 30; 23.2; 26.2), and the sanctuary (19.30; 21.23; 26.2, 11). The shifts to first-person references are strong rhetorical devices. Above all, they create the impression that YHWH speaks directly to his people, although the speeches are always mediated by Moses.³² Through the use of first-person references, the addressees get the feeling of hearing YHWH himself. More specifically, the first-person references establish and strengthen the relationship between YHWH and the people, most explicitly stated in the *Selbstvorstellungsformel* ‘I am YHWH your God’. This utterance is sometimes accompanied by reference to the exodus in order to further anchor the relationship in the shared history (“who brought you out of the land of Egypt;” e.g., 25.38). A few times, a first-person reference is used to redirect the speech, for example, “But I have said to you” (20.24; see also 17.12, 14), perhaps in order to enhance the contrast between the preceding verse and

³¹ 18.4 ($\times 2$), 5 ($\times 2$), 26 ($\times 2$), 30; 19.19, 37 ($\times 2$); 20.8, 22; 22.9, 31; 25.18 ($\times 2$); 26.3, 15 ($\times 2$), 43 ($\times 2$).

³² Even modern scholars can be persuaded by the reality-mimicking function of the first-person references, e.g., Christian (2011), who argues that the role of the priests is diminished because the Israelites have received direct revelation from YHWH, thereby overlooking the fact that Moses is in fact mediating the revelation (see chapter 2, §6.5 n. 67).

the following. The immanence of YHWH is likewise felt in the first-person warnings where YHWH personally promises to ‘cut off’ the culprits. The rhetorical force of the shift between third and first person is seen clearly in 23.28–30:

(9) וְכַל־מְלָאכָה לֹא תַעֲשׂוּ בְּעֶצְמָם הַיּוֹם הַזֶּה כִּי יוֹם כִּפּוּרִים הוּא לְכַפֵּר עֲלֵיכֶם
 לִפְנֵי יְהוָה אֱלֹהֵיכֶם: כִּי כָל־הַנֶּפֶשׁ אֲשֶׁר לֹא־תִעַנֶּה בְּעֶצְמָם הַיּוֹם הַזֶּה וְנִכְרְתָהּ
 מֵעַמּוּתָהּ: וְכָל־הַנֶּפֶשׁ אֲשֶׁר תַּעֲשֶׂה כָל־מְלָאכָה בְּעֶצְמָם הַיּוֹם הַזֶּה וְהָאֱבֹדֶתִי אֶת־
 הַנֶּפֶשׁ הַהוּא מִקֶּרֶב עִמָּה:

‘You shall not do any work during this whole day, because it is the day of atonement to atone for you before **YHWH** your God. For any soul, who does not humble himself during this whole day, he shall be cut off from his kinsmen. And any soul who does any work during this whole day, **I will destroy** that soul from the midst of his people.’ (Lev. 23.28–30)

In 23.28–30, the reference ‘YHWH’ is neutral and to be expected from the fact that Moses is speaking. The shift to the first person adds a severe motivation for proper observance of the day of atonement, because YHWH personally confronts the listener with the warning of destruction.

In sum, the various instances of first-person references to YHWH within the speeches of Moses are pragmatic devices to create a strong impression of imminence. By making Moses refer to YHWH in the first person, YHWH comes closer to his audience and can thereby draw his audience into a personal dialogue.³³ By

³³ Similarly, “The אֲנִי יהוה formula is at the core of this strategy since it makes the audience constantly aware that they are directly addressed

creating an impression of immanence, the frequent first-person references likely serve to strengthen the personal relationship between YHWH and the people and to enhance the motivations for strict adherence to the law. In this respect, the third-person references are the default references to YHWH in Moses' direct speeches and hardly carry any pragmatic significance. As argued, the first-person references to YHWH in the indirect speech of 22.2 support this idea. In conclusion, then, one can hardly expect a computer program to be able to attribute the first-person references in Moses' speeches to YHWH. On the other hand, a computational analysis can effectively identify occurrences of abnormal communication patterns that belong to the domain of rhetorical analysis.

3.7. The Audience

The Holiness Code contains interesting shifts between plural (2MPl) and singular (2MSg) references to the audience, בְּנֵי יִשְׂרָאֵל, 'the sons of Israel'.³⁴ As explained in chapter 2, §6.1, the participant shifts have traditionally been interpreted as indicators of redactional activity, and more recently as intentionally-employed rhetorical devices. The participant shift is an obstacle for a participant-tracking algorithm, because the connection between the

by YHWH himself" (Müller 2015, 79). Müller (2015, 84) argues further that the full rhetorical effect of the יהוה אֱלֹהֵי הַיְהוּדָה-formula is only achieved by oral performance of the text.

³⁴ See chapter 2, §6.1, where the audience was defined as the sons of Israel, although Aaron and the sons of Aaron are at times also included in this group.

explicit addressee of the discourse (בְּנֵי יִשְׂרָאֵל) and the singular reference (2MSg) is vague. The references share gender (M), and the shift from third to second person can be accounted for by regular linking rules for linking narrative that introduces speech and direct speech (see step 4 in §2.1). The shift from plural to singular is unexpected and requires the semantic inference that the singular addressee is a member of the sons of Israel. For some reason, the linking procedure has had a successful outcome in some parts of Talstra’s dataset. In Lev. 25, all second-person references are linked to the addressees of the text (בְּנֵי יִשְׂרָאֵל ‘the sons of Israel’) irrespective of grammatical number. In chapter 18, on the other hand, plural and singular addresses are distinguished, so that 2MPl references refer to the addressees (בְּנֵי יִשְׂרָאֵל ‘the sons of Israel’), while 2MSg references refer to an unspecified singular addressee. It is not clear to me why the participant shifts are handled differently in different chapters, but it surely illustrates the complexity of the text.

As noted, it has become more common among scholars to emphasise the rhetorical function of this type of participant shift. In general, the second person address is considered a rhetorical device for persuading the hearers, since the “hearers and readers are likely to feel directly addressed and therefore obliged to respond” (Watts 1999, 64).³⁵ Norbert Lohfink (1963, 248) explained the participant shifts between plural and singular address

³⁵ In addition, Gane (2017) explains the participant-reference shifts with respect to the covenant: YHWH has made a covenant with the people as a whole, but he has also made a covenant with each individual member of the people, and each of them is his covenant vassal. Accordingly, the

in Deut. 5–11 as markers of intensification. Thus, at critical places in the text, the singular address is employed to attract the attention of the hearer or reader. This interpretation was accepted by De Regt (1999b, 85–88), who also argued that the distribution of singular and plural addresses closely corresponds to the content matter of the book.³⁶ In his study of people and land in the Holiness Code, Jan Joosten (1996; see also 1997) likewise argued that the shifts between singular and plural addresses serve specific rhetorical and communicative purposes.³⁷ In particular, according to Joosten, the default address to the addressees is the plural reference, while the singular address is employed to address each member of the community personally. In one ‘anomalous’ case (25.7–9), the singular is apparently used to address the community (Joosten 1996, 48). Joosten admits that it is not possible to make a complete distinction, since Lev. 19 at least has a blend of plural and singular references, and he would not dare to postulate that “thou shalt rise up before the hoary head” (19.32) is more individualising than “ye shall not steal” (19.11). Nevertheless, Joosten shows that certain nouns such as שָׂדֵה ‘field’, כֶּרֶם ‘vineyard’, בְּהֵמָה ‘cattle’, עֶבֶד ‘slave’, רֵעַ ‘neighbour’, and family

“second-person address establishes a direct link between the speaker and the hearer/reader” (Gane 2017, 84).

³⁶ In particular, the plural addresses are applied in contexts of Israel’s history, while singular references abound in passages dealing with cultic and ritual matters (De Regt 1999b, 86–87).

³⁷ See also Barbiero (1991, 206–8), who applies Lohfink’s distinction in his analysis of rhetorical functions of the *Numeruswechsel* in Lev. 19.

members, occur with verbs and pronominal suffixes in the singular. By contrast, nouns such as מושבת 'dwelling places', דרת 'generations', ערים 'cities', and מקדשים 'sanctuaries' occur in contexts with plural verbs and pronominal suffixes (Joosten 1996, 49). According to Joosten, then, it means that the community is addressed as a group within the larger domains of the exodus, the cult, the festivals, the cities, and the land, while the members of the community are addressed individually within the domains of personal relations, property, and behaviour. Esias E. Meyer (2005), although not entirely convinced by Joosten's categorisation, likewise regarded the singular address as a rhetorical, individualising device.³⁸ Above all, Meyer (2005, 144) regards the number shifts as "power-conscious" devices, as the text "zooms in on those people who really have the power to make a difference."

In sum, even if a computer program can be developed to track the references to the addressees irrespective of number shifts, it is still useful to retain the distinction, insofar as the shifts are most likely intentional, rhetorical devices. If, in fact, Joosten

³⁸ Meyer (2005, 117) remarks with respect to Lev. 25 that "a word like אחי ['brother'] occurs with both the singular and the plural" and that "Even Joosten does not really know what to do with vv. 7–9, which according to his theory should be plural, but which are addressed to the singular." In his own attempt to solve the disturbing case of 25.7–9, Meyer (2005, 117–24) argues that the singular references are used both as a persuasive way of addressing the individual landowners and for the sake of making a smooth transition from the laws on the sabbatical year (addressed to the individual landowners) to the jubilee laws, which concern the community of landowners as a whole (plural references).

is right that the variation correlates with specific domains (communal vs personal), these participant shifts are within the interests of a social network analysis, which is concerned with the social domains of the participants. Thus, for the present analysis, the singular and plural references are kept distinct for further research (see chapter 7, §5.1.2).

3.8. Synonyms

Steps 7 and 8 of Talstra's participant-tracking procedure are concerned with semantic relationships beyond purely formal ones. More concretely, step 7 deals with different, yet synonymous, participant actors (PActs), while step 8 looks at participant actors with a certain amount of semantic overlap, essentially forming part-whole relationships. These two steps provide an obvious challenge for a computer program, since there are not necessarily linguistic cues (e.g., morphology or lexical identity) to suggest a semantic relationship. Nonetheless, since synonyms and part-whole relationships refer respectively to the same referent or membership of a referent, a profound participant analysis needs to take these phenomena into account. As a matter of fact, part-whole relationships have also been discussed with regard to SNA. In their SNA of *Alice in Wonderland*, Apoorv Agarwal et al. (2012) discuss whether a group of birds should be considered a group of which each bird is considered a member. And if so, if the group loses one member, should the remaining group of birds be marked as a new entity? These considerations are important for capturing the complexity and dynamics of a network of participants. The present study will therefore proceed a step further

than Agarwal et al. by proposing a hierarchy of participants from which to extract participant information. The issue of part-whole relationships will be discussed in the next section (§3.9). The present section will consider synonyms.

To illustrate the issue of synonyms, I shall first discuss the cases found in Lev. 17. The most distinctive is the curious shift from *איש* ‘anyone’ to *נפש* ‘soul’ in v. 10:

- (10) *וְאִישׁ אִישׁ מִבֵּית יִשְׂרָאֵל וּמִן־הַגֵּר הַגֵּר בְּתוֹכָם אֲשֶׁר יֹאכַל כָּל־דָּם וְנָתַתִּי
פָּנָי בְּנֶפֶשׁ הָאֹכֶלֶת אֶת־הַדָּם וְהִכְרַתִּי אֹתָהּ מִקִּרְבֵּי עַמָּהּ:*
‘[If] **anyone** of the house of Israel or of the sojourners sojourning among them eats any blood, I will put my face **against the soul** who eats the blood, and I will remove it from the midst of its kinsmen.’ (Lev. 17.10)

In (10), there is a subtle shift from ‘anyone’ to ‘soul’.³⁹ The only explicit indication of co-reference is the participle *הֹאכֵלֶת* ‘eat’, which relates ‘soul’ to the man of Israelite or foreign origin. While a reader will intuitively connect *איש* ‘anyone’ and *נפש* ‘soul’, due to the fact that both participants are described as eating blood, the collocation is difficult to formalise. An algorithm would need to identify the clause *בְּנֶפֶשׁ הָאֹכֶלֶת אֶת־הַדָּם* ‘against the soul who eats the blood’ with a complex clause ‘anyone of the house of Israel or of the sojourners sojourning among them who eats any blood’. Although the two references clearly refer to the same person, one needs to consider the implications of collocation. As regards the shift from *איש* ‘anyone’ to *נפש* ‘soul’, it may be that the

³⁹ I ignore for the moment the fact that the participant *איש* should rightly be labelled ‘anyone of the house of Israel or of the sojourners’ (see §3.4).

shift has a literary purpose. It has been suggested that *שֶׁמֶת* ‘soul’ in conjunction with eating has to do with the root meaning of *שֶׁמֶת*, which is ‘throat/appetite’ (Milgrom 2000, 1471), or that *שֶׁמֶת* signals a deep connection between the blood, which is the *שֶׁמֶת* ‘life’ of the animal (17.11), and the life of the human being punished by YHWH as a revenge for eating blood/life (Wenham 1979, 244–45). In any case, these interpretations illustrate a consequence of participant tracking and, particularly, of participant clustering. Through the process of collocating semantically related participants, information is inevitably lost. On the other hand, by reducing the number of participants, other aspects of the text can be analysed. At this level of analysis, therefore, the granularity of the participant analysis must be defined by the aim of the researcher. The aim of the present study is not to explore the internal composition of the participants (i.e., word senses attached to individual participants) but rather to contrast distinct participants (e.g., the native Israelite and the sojourner). For this reason, *אִשָּׁרְאֵל* ‘anyone’ and *שֶׁמֶת* ‘soul’ are collocated, despite the possible theological significance attached to *שֶׁמֶת*.

There is one important exception to this heuristic choice of granularity, because it is in fact relevant for investigating the internal composition of one participant, namely the addressees, the sons of Israel. Recall that the sons of Israel are sometimes addressed in the second person (singular and plural) and sometimes in the third person. The participant shifts may bear on certain rhetorical and theological concerns, as discussed above (§3.7). The second-person plural address likely refers to the Israelites as a group, while the second-person singular reference addresses

each Israelite personally. In addition, the third-person reference is commonly used in case laws to exemplify a legal case. With respect to the addressees, therefore, a somewhat more fine-grained strategy is applied than for other participants in H. That is, the plural address to the Israelites (2MPI), the singular address (2MSg), and the singular, indirect address (3MSg) are handled separately. The benefit of this strategy is that it allows for analysis of the individual references independently within the network.

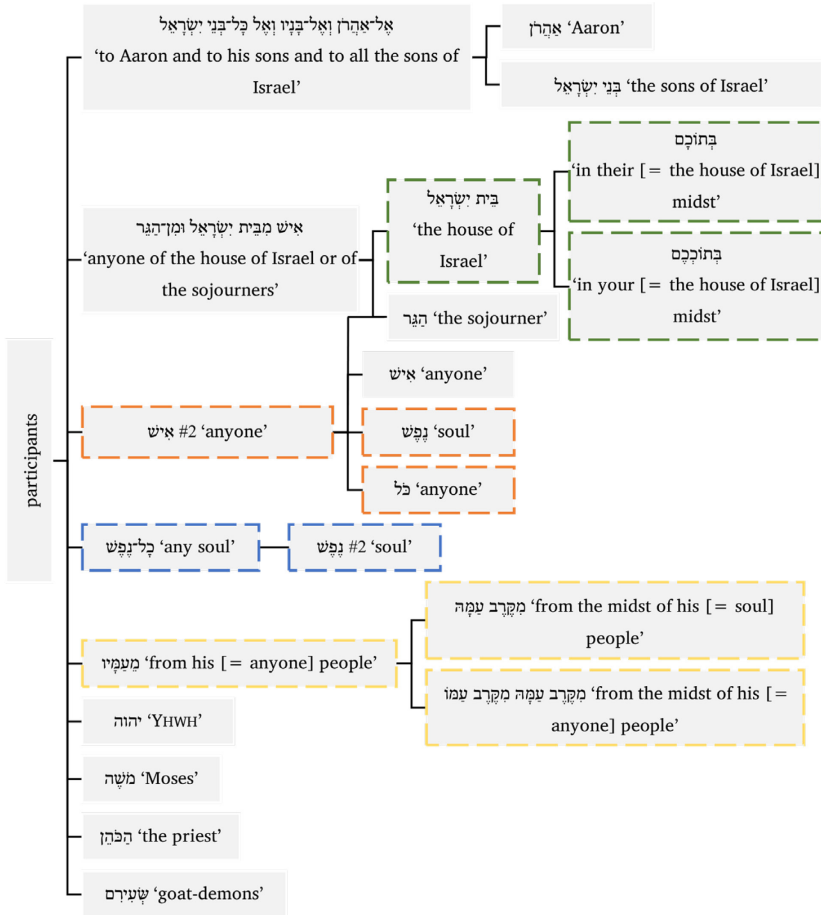
The participant tracking of Lev. 17 illustrates the trade-off between accuracy and simplicity well. Talstra's dataset of Lev. 17–26 contains 250 participant references for Lev. 17. Talstra's own analysis results in 34 participant actors (PActs). Still, some participants are semantically related and could reasonably be collocated, including, for example, *איש* 'anyone' and *נַפְשׁוֹ* 'soul' (see above). Furthermore, if 'anyone' and 'soul' are collocated, the references to the kinsmen of 'anyone' (e.g., 17.4) and the kinsmen of 'soul' (e.g., 17.10) should likewise be collocated.

These considerations in mind, the list of participants in Lev. 17 can be reduced to 14 human/divine participants.⁴⁰ Figure 2 shows the resulting semantic hierarchy of the participants in Lev. 17. The semantic hierarchy captures both synonyms, marked by

⁴⁰ The 14 human/divine actors are *אֶל־אֶהְרֹן וְאֶל־בָּנָיו וְאֶל כָּל־בְּנֵי יִשְׂרָאֵל* 'to Aaron and to his sons and to all the sons of Israel', *בְּנֵי יִשְׂרָאֵל*, 'Aaron', *אֶהְרֹן*, 'the sons of Israel', *אִישׁ מִבֵּית יִשְׂרָאֵל וּמִן־הַגֵּר* 'anyone of the house of Israel or of the sojourners', *בֵּית יִשְׂרָאֵל* 'the house of Israel', *הַגֵּר* 'the sojourner', *אִישׁ* 'anyone', *אִישׁ #2* 'anyone', *כָּל־נַפְשׁוֹ* 'any soul', *מֵעַמּוֹ* 'from his [= 'anyone'] people', *יְהוָה* 'YHWH', *מֹשֶׁה* 'Moses', *הַכֹּהֵן* 'the priest', and *שְׂעִירִם* 'demon'. For the difference between *אִישׁ* and *אִישׁ #2*, see §3.9.

dashed boxes, and part-whole relationships, marked by lines. Part-whole relationships will be the topic of the next section.

Figure 2: Left-to-right hierarchy of human/divine participants in Lev 17. The lines represent part-whole relationships, and dashed boxes represent synonyms.



Another issue involving synonyms concerns the ‘foreigners’, which is a composite group in Leviticus. In the last part of Lev. 18, the audience is warned against pursuing a moral lifestyle similar to that of the people living in the land of Canaan before

the conquest. These people are referred to as הגוֹיִם ‘the nations’ (18.24), יְשֵׁבֵי הָ, ‘its [= the land] inhabitants’ (18.25), and אֲנָשֵׁי הָאָרֶץ ‘the men of the land’ (18.27). Previously, the audience had been warned against imitating the immoral deeds of the Egyptians (18.3). The Egyptians and the Canaanites are certainly two different ethnic groups and therefore not the same participant. However, in terms of ethics and their role in chapter 18, Egyptians and Canaanites are similar. That is, both groups represent a lifestyle not to be imitated by the Israelites, and they thus function as an ethical contrast to the sons of Israel. For this reason, it is sensible to collocate the references, even if some information is lost.

The final example is the well-known command to love one’s fellow as oneself (Lev. 19.18). In the immediate context, a list of prohibitions concretises this rule. The list involves a range of participants, including אָחִיךָ ‘your brother’, עַמִּיתְךָ ‘your fellow countryman’, בְּנֵי עַמְּךָ ‘sons of your people’, and רֵעֶךָ ‘your fellow’. It has been discussed whether these terms specify distinct persons to whom the individual addressee has distinct obligations (chapter 2, §6.3). Most commentators, however, hold that the references are ‘near synonyms’ (Milgrom 2000, 1655; see also Magonet 1983). The term ‘near synonyms’ illustrates well the point being made here. There are hardly any ‘real’ synonyms, because an author is likely to employ different words in order to accentuate a nuance in the portrayal of a participant. Therefore, the collocation of ‘nearly synonymous’ participants comes at the expense of accuracy. On the other hand, with these participants collocated,

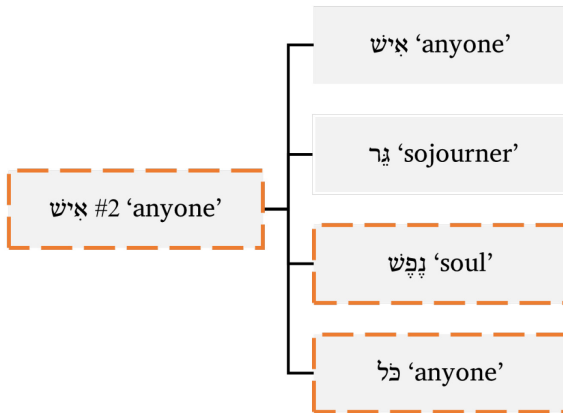
the text becomes readily accessible for analysis of the relationships among those participants that are relatively more distinct than near synonyms. Above all, the degree of granularity depends on the research question.

3.9. Part-Whole Relationships

The last step of Talstra's participant-tracking analysis concerns semantic relationships between participants that are not purely synonymous. In an example from Exod. 19, Talstra (2016b, 21) mentions הָהָר 'the mountain', הַר סִינַי 'mount Sinai', רֹאשׁ הָהָר 'top of the mountain', and תַּתְּהֵיית הָהָר 'bottom of the mountain', which form a cluster with 'the mountain' as the main actor and the remaining references as dependent actors. These relationships are still formal by nature in that they form *regens-rectum* constructions, and they can therefore probably be captured by a computer algorithm. Another kind of part-whole relationship is the member-group relationships which occur frequently in Lev. 17–26. The most apparent example is the complex addressee phrase in Lev. 17.2, as already discussed (see §3.1): 'to Aaron and to his sons and to all the sons of Israel'. In this example, three distinct members form a group of addressees. The members of this group can be tracked through the text by means of lexical or morphological marking. However, apart from semantic relationships like this one that are signalled by linguistic structure and grammatical marking, many part-whole relationships are almost entirely semantic. The recurrent reference אִישׁ 'a man/anyone' in Lev. 17 offers one such case. Lev. 17 consists of four major case laws, each unfolding an act undertaken by אִישׁ (17.3, 8, 10, 13). The

issue of איש was already discussed in §3.4, where it was argued that, despite the identical lexemes, the reference does not always refer to exactly the same participant. While the first case law refers to a native Israelite alone, the remaining laws include the sojourner. This difference is difficult to capture by means of an algorithm, however, because the referential differentiation of איש is only signalled by complex constructions, including relative clauses.

Figure 3: Dependency tree of the native Israelite (איש ‘anyone’), the sojourner (גר), and the man being either native Israelite or sojourner (איש \#2 ‘anyone’). Synonymous relationships are represented by dashed boxes.



Nevertheless, even if an algorithm could successfully differentiate the two participants, some referential overlap must be retained, for the reason that the case laws which address both the sojourner and the native Israelite (17.8, 10, 13) pertain, by implication, also to the native Israelite alone, as mentioned in the first case law (17.3). Put differently, when reference is made to a group of participants, the reference pertains to each of the members. On the other hand, reference made to an individual does

not necessarily pertain to the entire group. The relationship between the two participants $\psi\aleph$ (v. 3) and $\psi\aleph$ (vv. 8, 10, 13) is thus asymmetric. This asymmetric, partly overlapping relationship is illustrated in a dependency tree (Figure 3). The dependency tree illustrates both the symmetric and the asymmetric relationships pertaining to ‘anyone, either native Israelite or sojourner’ ($\psi\aleph$ #2 ‘anyone’). As for the symmetric relationships, it has already been explained that $\psi\aleph$ ‘soul’ is used synonymously with $\psi\aleph$ #2 (see §3.8). The same is true of \aleph ‘anyone’. By implication, the references tracked to $\psi\aleph$ and \aleph can be mapped onto $\psi\aleph$ #2, and vice versa, as illustrated by the dashed boxes. Secondly, the references to $\psi\aleph$ #2 can be mapped onto each of its members, the native Israelite and the sojourner. More concretely, the laws concerning burnt offerings outside the sanctuary (v. 8), eating blood (v. 10), pouring blood on the earth (v. 13), and eating corpses (v. 15) apply to both the native Israelite and the sojourner.⁴¹ Importantly, by implication of the asymmetric relationship, the first case law in v. 3 pertains only to the native Israelite ($\psi\aleph$) and is not mapped onto the group $\psi\aleph$ #2, nor the other member of the group (\aleph). In other words, the prohibition against profane sacrifices (v. 3) does not apply to the sojourner, nor to the ‘group’ consisting of the native Israelite and the sojourner, but exclusively to the native Israelite. This distinction is crucial when we want to map the participants with respect to the events

⁴¹ The last case law (v. 15) uses the term $\aleph\aleph$ ‘any soul’ (\aleph ‘anyone’ in the dependency tree), but, since this reference has been marked as synonymous to $\psi\aleph$ #2, the law already applies equally to the native Israelite and the sojourner.

in which they participate and the laws in which they are included.

Another example is found in Lev. 20. This chapter contains a long list of case laws establishing the punishment for engaging in incestual relationships, as well as adultery, homoerotic relationships, and bestiality. The case laws are characterised by a recurrent pattern where the perpetrator is introduced first (most frequently by the indefinite *אִישׁ* ‘a man/anyone’), followed by another participant with whom the sexual act is committed. Finally, the two participants are subsumed in a plural reference, for example, *מוֹת יוּמָתוּ שְׁנֵיהֶם* ‘the two of them shall surely die’ (20.11). A sophisticated algorithm might be able to track the participants because the two individual participants are now referred to in the plural. Even so, the participant tracking must account for the asymmetric relationships between the participants. Strictly speaking, while the death penalty applies to both individual participants, the sexual act does not apply equally to the two individuals, nor to the group reference. Rather, it is *אִישׁ* ‘a man/anyone’ who is described as the initiator of the sexual relationship and not the other participant. In other words, it is not ‘the two of them’ who instigate a sexual act but only ‘a man/anyone’. This may seem to be an overcomplication, because both participants are apparently seen as equally guilty, given the death penalty stipulated for both. However, from the point of view of relational ethics, which is the topic of the social network analysis to be carried out (see chapter 7), it is important to distinguish between active instigators and passive undergoers as far as the text is concerned. In this light, asymmetric relationships between groups

and members are immensely important for understanding the roles of the participants.

Another interesting case is found in Lev. 18. In v. 6, the Israelites are prohibited from coming near to כָּל־יֵשָׁר בְּשָׂרוֹ ‘anyone of one’s close relatives’ to uncover their ‘nakedness’.⁴² The verse is often considered a general law heading the subsequent series of laws (Hartley 1992, 293; Milgrom 2000, 1532–33; Wenham 1979, 253; Levine 1989, 120). Logically, just as the general prohibition against sexual intercourse with a close relative subsumes the subsequent list of concrete laws, the participant reference in v. 6 subsumes the subsequent references to close relatives. Accordingly, the participant references referring to concrete family members can be mapped onto the general law in v. 6. This choice is obviously based on purely semantic and literary considerations, since there is no formal linking between the participant in v. 6 and those in the subsequent verses.⁴³

In sum, the clustering of participants into hierarchical groups is a complicated, yet important task of participant tracking that aims to disambiguate the participants as much as possible without losing too much information. The classification of participants into asymmetric part-whole relationships allows for a controlled attribution of participant references to the members of a group.

⁴² עֶרְוָה ‘nakedness’ is a euphemism for copulation (Milgrom 2000, 1534).

⁴³ Only family members are subsumed in the group of ‘close relatives’; hence, only the participants in 18.7–15 are included.

3.10. The Human/Divine Participants of Lev. 17–26

The eight-step procedure for participant tracking documented above leads to a diminished list of participants. The overall objective of the present study is to investigate the roles and relations of the human and divine participants of the text. Hence, an additional step involves the exclusion of non-human and non-divine participants. In the end, a set of 74 unique human/divine participants can be identified in Lev. 17–26. These participants are listed in Table 2 below, along with their Biblical references.⁴⁴ The participants form the backbone of the social network analysis to be conducted in chapter 7, where the social relationships among the participants will be investigated on the basis of their interactions. It should be noted, however, that only 59 of the participants actually qualify for a SNA, since the participants need to occur in interaction with other human/divine participants.⁴⁵ Other restrictions apply as well, as explained in detail in chapter 7, §3.1.

A few participants in the resulting list have required additional disambiguation and/or collocation for the sake of the SNA. As an example, *mother* includes the mother of both *2MSg* (the individually addressed Israelite, e.g., Lev. 18.6) and the mother

⁴⁴ Only the first 10 references to each participant are listed for the sake of space. For all references, see https://github.com/ch-jensen/Roles-and-Relations/blob/main/Participants-and-references_Lev17-26.xlsx.

⁴⁵ The excluded participants are *son*, *father's_brother*, *Egyptians*, *blemished_man*, *resident_laborer*, *resident_with_priest*, *Shelomith*, *redeemer*, *Levite*, *sojourner's_descendants*, *ten_women*, *ancestors*, *Jacob*, *Isaac*, and *Abraham*.

of the third-person $\psi\aleph$ 'anyone' (e.g., 20.9). The same is true of the other relatives listed. As for the third-person $\psi\aleph$ itself, this participant is subsumed under *an Israelite* along with its synonyms $\psi\aleph$ 'soul' and \aleph 'anyone' (see the discussion in §3.8). Another case of collocation is the subsumption of all quasi-divine beings and idols under *idols*, including Moloch (18.21), goat-demons (17.7), and idols (19.4), as well as dead spirits and soothsayers (19.31). Thus, the list of human/divine participants could be much longer if the participants mentioned here were not collocated. However, for the sake of characterising the participants of Lev. 17–26 over against certain categories (e.g., family members or idols), these measures had to be taken.

Table 2: Human/divine participants in Lev. 17–26

Participant	References (the first 10)	Participant	References (the first 10)
<i>2MPI</i>	21.8	<i>group_of_people</i>	20.5 (×3)
<i>2MSg</i>	18.7 (×3), 8 (×2), 9 (×2), 10 (×3)...	<i>handmaid</i>	19.20 (×7); 25.6, 44 (×2)...
<i>Aaron</i>	17.2 (×2); 21.10 (×7), 11...	<i>human_being</i>	18.5 (×2); 22.5 (×2), 6; 24.17, 20, 21
<i>Aaron's_sons</i>	17.2 (×2), 5, 6 (×2); 19.22; 21.1 (×3), 2...	<i>husband</i>	21.7
<i>Abraham</i>	26.42	<i>idols</i>	17.7 (×2); 18.21; 19.4, 31 (×3); 20.2, 3, 4...
<i>Egyptians</i>	19.34, 36; 26.13 (×2), 45	<i>kinsmen</i>	17.4, 9, 10; 18.29; 19.8; 20.3, 5, 6, 18; 21.1...
<i>Isaac</i>	26.42	<i>lay-person</i>	22.4, 10, 13, 14 (×4), 18, 21 (×2)...
<i>Israelites</i>	17.2 (×2), 3, 5 (×4), 7 (×3)...	<i>male</i>	18.22; 20.13 (×4)
<i>Jacob</i>	26.42	<i>man</i>	19.20
<i>Levite</i>	25.32, 33 (×4), 34 (×2)	<i>man/woman</i>	20.27 (×5)
<i>Moses</i>	17.1, 2 (×2), 8; 18.1, 2 (×2); 19.1, 2 (×2)...	<i>mother</i>	18.6, 7 (×3), 9, 13 (×2); 19.3; 20.9 (×2)...
<i>Shelomith</i>	24.10, 11 (×2)	<i>no-one</i>	26.17, 36, 37
<i>YHWH</i>	17.1 (×2), 2 (×2), 4, 5 (×2), 6 (×2), 9...	<i>offspring</i>	18.21; 20.2, 3, 4; 21.15; 22.13
<i>an_Israelite</i>	17.3 (×3), 4 (×5), 8 (×2)...	<i>poor</i>	19.10, 15; 23.22
<i>ancestors</i>	26.39, 40	<i>purchaser</i>	25.27 (×2), 28 (×2), 30 (×2)
<i>aunt</i>	18.6, 12 (×2), 13 (×2); 20.19 (×2)	<i>redeemer</i>	25.25 (×3), 26
<i>aunt-in-law</i>	18.6, 14 (×3); 20.20 (×4)	<i>relative</i>	21.2 (×2), 3 (×4)

<i>blasphemer</i>	24.10 (× 3), 11 (× 4), 12, 14 (× 2)...	<i>remnants</i>	26.36 (× 5), 37 (× 2), 39 (× 3)...
<i>blemished_man</i>	21.18 (× 2), 19 (× 2), 20	<i>resident_laborer</i>	22.10
<i>blind</i>	19.14	<i>resident_with_priest</i>	22.11 (× 2)
<i>brother</i>	18.16 (× 2); 19.11, 13, 15, 16 (× 2), 17 (× 3)...	<i>rich</i>	19.15
<i>brother's_brother</i>	25.48, 49	<i>sister</i>	18.6, 9 (× 2), 11 (× 3); 20.17 (× 4)...
<i>brother's_uncle</i>	25.49	<i>sister_of_woman</i>	18.18 (× 2)
<i>children</i>	25.46 (× 2); 26.29 (× 2)	<i>slave</i>	22.11 (× 2)
<i>clan</i>	25.10, 41	<i>sojourner</i>	17.8 (× 3), 9 (× 3), 10 (× 4)...
<i>corpse</i>	21.1, 11; 22.4; 26.30	<i>sojourner's descendants</i>	25.45
<i>daughter</i>	19.29 (× 2); 21.9 (× 5); 22.12 (× 3)...	<i>son</i>	18.10, 15
<i>daughter-in-law</i>	18.6, 15 (× 3); 20.12 (× 4)	<i>son_of_brother</i>	25.41, 54
<i>deaf</i>	19.14	<i>sons_of_sojourners</i>	25.45 (× 6), 46 (× 2)
<i>elderly</i>	19.32 (× 2)	<i>ten_women</i>	26.26 (× 2)
<i>father</i>	18.6, 7, 8 (× 2), 9, 11, 12 (× 2), 14; 19.3...	<i>virgin</i>	21.13, 14
<i>father's_brother</i>	18.14 (× 2)	<i>widowed/expelled/ defiled_woman</i>	21.7 (× 3), 14 (× 2)
<i>father's_wife</i>	18.6, 8 (× 2), 11; 20.11 (× 4)	<i>witnesses</i>	24.11, 12 (× 2), 14
<i>fellow's_wife</i>	18.6, 16 (× 2), 20 (× 2); 20.10 (× 3), 21 (× 2)...	<i>woman</i>	18.17 (× 4), 18 (× 2), 19 (× 2), 22, 23...
<i>foreign_nations</i>	18.24, 25, 27 (× 2), 28 (× 2); 20.23 (× 3), 24...	<i>woman_and_her _daughter</i>	18.17 (× 2)
<i>granddaughter</i>	18.6, 10	<i>woman_and_her _mother</i>	20.14 (× 2)
<i>granddaughter _of_woman</i>	18.17 (× 2)	<i>woman_in _menstruation</i>	20.18 (× 5)

4.0. Conclusion

Although most participants in the Holiness Code can probably be correctly identified by everyday readers of the text, the contributions of the computational approach suggested in this chapter are significant. One of the main advantages of a formalised approach—apart from the resulting participant dataset itself—is the fact that an algorithm is not carried away by personal interests or scholarly consensus. The computer program will apply the same rules everywhere and is not sensitive to literary or theological considerations. That said, the computer is certainly not right everywhere. Participant tracking relies on semantics as well as syntax, and the former is difficult to formalise. However, discrepancies between the results of a computer and a human interpreter usually point to complexities in the text. Sometimes, these complexities can be resolved by improving the algorithm, but not always. If there are ambiguities in the text, they may signal literary conventions foreign to modern interpreters, or they may signal pragmatic issues, for example the deliberate conflation of YHWH and Moses in Moses' first-person references to YHWH.

Talstra's dataset does not reflect a complete tracking of participants. Neither does my own, despite the revisions documented in this chapter. Perhaps there is no such thing as a 'complete' or 'perfect' participant-tracking analysis. After all, participants of a text are not completely discrete entities, but often overlap to a certain extent. In H, this phenomenon is probably most evident in the claim that the Israelites are *גֵרִים וְתוֹשְׁבֵי־אֶרֶץ* 'resident sojourners' in the land of YHWH (25.23). This reference is also used to describe the non-Israelite sojourners residing in the land and

even as a description of how the poor Israelite fellow is to be treated: as a *גֵר יְתוֹשֵׁב* ‘residing sojourner’ (25.35). Thus, participant references are often conflated deliberately in order to convey a certain message, and the distinction between sojourners and Israelites is blurred. For this reason, participant tracking is not only about data production and clear-cut delineations of participants. Rather, participant tracking is an open-ended endeavour that continues to reveal complexities, literary conventions, curious abnormalities, and ideological concerns. In conclusion, then, I shall therefore echo a remark of Talstra’s in one of his works on participant tracking: “It is clear that this research is very much in the experimental stage. That is, however, only a problem if one is just waiting for the final results to apply them. It is, in my experience, a much more fruitful attitude to accept that this ongoing research to enrich the Old Testament database is not just data production, but at the same time is also fundamental research in Hebrew language and in Old Testament texts” (Talstra 2016a, 242).