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

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6. CAUSATION: INSTIGATION, VOLITION, AFFECTEDNESS, AND A HIERARCHY OF AGENCY

1.0. Introduction

As explained in chapter 4, dynamicity and causation are the two most important verbal features with respect to agency. The former was explored in the preceding chapter, and the latter will be the topic of the present one. In essence, causation concerns the interference of two entities, one entity *causing* another entity towards rest or activity (Talmy 2000). Traditionally, 'cause' was seen as an irreducible, atomic primitive, as illustrated in James D. McCawley's (1968) now classic decomposition of 'kill' into [CAUSE [BECOME [NOT [ALIVE]]]]. A similar understanding of cause is found in RRG, where the following explanation of causative verbs is found (Van Valin 2005, 42):

> Causative verbs have a complex structure consisting of a predicate indicating the causing action or event, usually an activity predicate, linked to a predicate indicating the resulting state of affairs by an operator-connective CAUSE, e.g. [**do′** …] CAUSE [BECOME **pred′** …].

However, Van Valin (2005, 42 n. 5) also admitted that this notion of causation was "a gross oversimplification," because causation involves such various connections as "direct coercive" (e.g., 'Pam made Sally go'), "indirect non-coercive" (e.g., 'Pam

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had Sally go'), and "permissive" (e.g., 'Pam let Sally go'). Consequently, in later works, linguists working within the framework of RRG have reconceptualised causation and added important nuances to this complex matter (in particular Nolan et al. 2015). These nuances are especially important when analysing the role and agency of linguistic participants. The classical, atomic notion of causation would imply treating all types of causatives as simply involving an effector (Van Valin 2005, 58), even though the degree of this participant's agency can be perceived as being quite different depending on whether the participant is forcing another entity towards a particular state of affairs, or whether the participant is simply permitting the other entity without being further involved. In short, a fine-grained analysis of participant roles requires fine distinctions in causative types.

There are three formal types of causal realisations within the sentence. These are lexical, morphological, and syntactic causatives (Kulikov 2001, 886–87).[1] Lexical causatives are causatives which cannot be derived morphologically from non-causative counterparts. One example is the pair 'kill'–'die', expressing causation and non-causation, respectively, but without any morphological connection. Biblical Hebrew also contains lexical causatives, such as הרג G 'kill'. A morphological causative

[1] The syntactic causative is sometimes called the 'periphrastic causative' (e.g., Castaldi 2013), or 'analytic causative'. Kulikov (2001, 887) adds 'labile verbs' to lexical causatives as a subcategory. Labile verbs are causatives that are indistinguishable from their non-causative counterparts, such as 'open' and 'move'.

is formally derivable from its non-causative counterpart. The BH prototypical morphological causative is the *hifʿil* stem formation, which is frequently used to denote the causing of an undergoer to perform an event. Less prototypically, the *piʿel* stem often expresses a factitive event, that is, an external causer causes an entity to enter a new state (see further discussion below). Finally, the syntactic causative is defined as a causative construction formed by two verbs, hence the frequent label 'periphrastic causative'. Here, the causative morpheme is a free form, in English 'cause', 'make', 'let', in German *lassen*, or in French *faire*. This causative type is absent from Biblical Hebrew.

The aim of this chapter is to explore the Biblical Hebrew causatives in light of recent, general treatments of causation, in particular Talmy's (2000) concept of 'force dynamics', Van Valin's (2005) Role and Reference Grammar (see also Van Valin and LaPolla 1997), and Næss' (2007) theory of 'prototypical transitivity', the three of which offer means by which causatives can be further distinguished. More concretely, the chapter will include 1) a general introduction to causation; 2) classification and comparison of the BH verbal stems *hifʿil* and *piʿel* in terms of causation; and 3) a discussion of the lexical causatives appearing in Lev. 17–26. Finally, a hierarchy of agency will be proposed on the basis of the analysis of dynamicity and causation in this and the preceding chapter.

2.0. Causation and Force Dynamics

Causation has been researched and debated intensively, and it is not the aim of this chapter to summarise this long history of research.[2] As Suzanne Kemmer and Arie Verhagen (1994, 116) note, linguists have apparently come to see causation not only as an interesting, complex issue on its own, but as "fundamental to an understanding of clause structure as a whole." The phenomenon of causation appears at almost all levels of grammar, from grammatical affixes, to lexemes, syntax, and discourse. Not only is causation related to many grammatical levels; causation is often only implied. A causative reading may be suggested by the mere juxtaposition of two sentences. As Vera I. Podlesskaya (1993, 166) summarises, a "causal relation between clauses can be encoded: (a) by the mere juxtaposition of clauses; (b) by non-specialized, or contextual, converbs, […] i.e. with medial verbal forms that are semantically unspecific; and, (c) by non-specialized conjunctions." Often, a great deal of cultural knowledge is required to decode a causal relationship.[3] It

[2] For overview and discussion, see Kulikov (2001). Important works on syntactic and semantic parameters of causation include Shibatani (1976a), Aissen (1979), Comrie and Polinsky (1993), Song (1996), Talmy (2000), Escamilla (2012), Copley and Martin (2014), and Nolan et al. (2015).

[3] For interclausal relationships including causal relations, see Renkema (2009).

is therefore not surprising that it has been difficult to form a unitary, monistic theory of causation.[4]

In essence, a causal relation refers to a certain type of relationship between two events, a causing event and a caused event (Shibatani 1976b, 1). Not all linguists accept this definition (e.g., Dixon 2000, 30), and it is not without problems. Even the word 'causing' should be qualified, because it can refer to many specific kinds of relationships. For this reason, causation is better viewed within the framework of 'force dynamics', a theory proposed by Talmy in several publications (1976; 1988; 2000) and further developed by Phillip Wolff and others (Wolff and Song 2003; Wolff 2007; Wolff et al. 2010). Force dynamics is about how entities interact with one another in terms of force: coercion, resistance, assistance, and permission. Talmy (2000, 409) explains the relationship between causation and force dynamics as follows:

> [Force dynamics] is, first of all, a generalization over the traditional linguistic notion of 'causative': it analyzes 'causing' into finer primitives and sets it naturally within a framework that also includes 'letting', 'hindering', 'helping', and still further notions not normally considered in the same context.

Accordingly, force dynamics, or 'force theory' in Wolff's terms, goes beyond traditional notions of causation, even to the extent

[4] Some linguists have proposed what is often referred to as 'causal pluralism', in acknowledgement that there are many sorts of causation (see Wolff 2014, 101).

of including modal verbs, such as 'may' and 'can', within the framework.

Essential to the concept of 'force dynamics' is the assumption of an entity upon which another entity exerts force. The first entity, the element of primary attention, has an intrinsic tendency towards either rest or motion, or, in other words, towards either stativity or activity. The other entity, the so-called antagonist, exerts an opposing force to overcome the intrinsic tendency of the former entity, the agonist. If the antagonist is stronger than the agonist, the agonist will succumb to the impingement of the antagonist. But the opposite scenario is also possible. The agonist may be stronger than the antagonist and therefore remain in its initial state *despite* the antagonist's impact. The latter example explains why concepts that are somewhat unrelated to traditional accounts of causation, such as 'hindering, 'letting', 'trying', and 'preventing', among others, can be regarded as equally important for a force dynamics framework (Talmy 2000, 430).

Force dynamics offers a framework or a certain perspective on discourse. While other frameworks account for participant viewpoints or temporal and spatial parameters, force dynamics concerns "the forces that the elements of the structural framework exert on each other" (Talmy 2000, 467). As molecules exert forces on one another when they collide, linguistic discourse entities (participants) affect each other, either directly

and physically, or indirectly and psychologically.[5] Stronger participants will overcome the intrinsic resistance of weaker participants, and will themselves resist the forces of weaker participants. Taken this way, force dynamics provides a framework for analysing the interactions between participants and, by implication, the relative strength (agency) of each participant in an interaction. The term 'relative strength' indicates that the framework does not offer an account of the independent or absolute strength of a participant, because strength is only visible in interaction. The comparison with colliding molecules implies a scale of force. The force of molecules is dependent on their mass and speed, but how can the force of linguistic entities be measured, other than by recording the (binary) outcome of each linguistic 'collision'?

To answer this question, linguists have proposed a variety of criteria in order to quantify causative events and divide them into more accurate subtypes. For example, based on one of Talmy's (1976) early accounts of force dynamics, Verhagen and Kemmer (1997, 71) argued for two significant dimensions in categorising causative events. The first dimension is the distinction between the 'initiator' and the 'endpoint' of the causal event. This distinction relates to a distinction between intransitive causatives (e.g., 'He made the baby cry') and transitive causatives (e.g., 'She had him bake a cake'). In the former case, the state of the causee is the 'endpoint' of the event, while in

[5] Croft (2012, 203) has argued that empirical data on language use suggest that there is a continuum between physical and psychological (volitional) causation.

the latter case, the causee is an intermediary affecting the so-called 'affectee' (i.e., 'a cake'). The second dimension is the distinction between animate and inanimate participants. Verhagen and Kemmer (1997, 71) noted that there is a "very marked asymmetry" between animate and inanimate participants in that animate participants can only interact with each other "via the intervening physical world," usually by verbal communication. In other words, as a psychological being, an animate participant "cannot reach into another person's mind and *directly* cause him or her to do, feel, or think something," but relies on communication to indirectly cause him or her to do, feel, or think something (Verhagen and Kemmer 1997, 17; italics original). By contrast, physical entities interfere directly with one another (e.g., a rock causing the window to break). Verhagen and Kemmer's account raises an important question as to how direct, physical causation and indirect, psychological causation could be related in terms of agency. Volition (a feature only applicable to human beings) has often been seen as the most significant parameter in terms of agency. If a participant is volitional, the participant can be seen as more involved and hence more agentive. On the other hand, as Verhagen and Kemmer highlight, mental participants can only affect one another indirectly, in contrast to non-volitional, physical entities, which impact directly on one another.[6]

[6] In fact, Diedrichsen (2015), in a recent application of Verhagen and Kemmer's parameters, suggested two scales of causation: one for animate participants and one involving inanimate participants.

Another influential typology was offered by Robert M. W. Dixon (2000), who proposed nine semantic parameters related to all three parts of the causative construction, i.e., the verb, the causee, and the causer (Dixon 2000, 62):

Verb

1. State/activity
2. Transitivity

Causee

3. Control
4. Volition
5. Affectedness

Causer

6. Directness
7. Intention
8. Naturalness
9. Involvement

While the parameters for the causer and the causee are labelled differently in Dixon's typology, they are oriented towards some overlapping core notions, including the mental attitude (volition and intention), the degree of physical involvement (control and directness), and the affectedness (affectedness and involvement) of each of the participants. Dixon's parameters have become highly influential in recent scholarship, although some of the parameters have turned out to be less significant in terms

of grammaticalisation.[7] Dixon (2000, 63) also illustrated in his work that languages may have two or more causative 'mechanisms'; for example, in Bahasa Indonesian and Malay, the causative suffix *-kan* applies to stative and process verbs only, while causative constructions are always periphrastic with activities (see Tampubolon 1983, 45). Dixon's framework applies well to Biblical Hebrew, which also has two different morphological causatives, *hifʿil* and *piʿel*. In light of Dixon's typology, we should expect the *hifʿil* and *piʿel* to express different kinds of causation, or to be associated with different types of verbs (e.g., state vs activity) or participants (e.g., animate vs inanimate). It will be the aim of what follows to investigate how morphological causatives can be identified in the first place, and how the two stems, *hifʿil* and *piʿel*, can be semantically distinguished.

In sum, then, Talmy's framework of force dynamics has led to a multifaceted conception of causation. Causation can be further subdivided into particular types and degrees of causation, e.g., force, permission, assistance, and non-intervention. Force dynamics has important implications for the analysis of agency, since the agency invested by a participant depends not only on whether the participant instigates a causative event, but rather on what type of causative event is instigated. Dixon's typology offers concrete means by which to differentiate causative events and helps to explain why languages often have more than one causative type, as is the case in Biblical Hebrew. A

[7] For example, in a large study of 114 constructions in 50 different languages, the parameter of the causee's affectedness was not found to be crucially encoded; see Escamilla (2012).

simplified model of Dixon's typology will be presented in the discussion of lexical causatives and related to force dynamics (§§4.0–5.0). For the time being, I shall investigate the BH morphological causatives attested in Lev. 17–26 with respect to whether they express different kinds or degrees of causation.

3.0. Morphological Causatives in Biblical Hebrew

Biblical Hebrew has two inflectional stems associated with causation and morphologically derived from the 'default' stem, the *qal*. The two stems are the *hifʿil* and the *piʿel*, and both stems have passive counterparts, namely, the *hofʿal* and *puʿal* respectively. The *hifʿil* is the prototypical morphological causative, since it causes an event (example 2). By contrast, the *piʿel* most frequently functions as a factitive in that it causes a state (example 4).[8] Here, both stems are termed morphological causatives, although the term 'causative' has typically been reserved for the *hifʿil* in studies of Biblical Hebrew. It is generally acknowledged, however, that the *piʿel* is associated with causation (Waltke and O'Connor 1990, §24.1i), and both stems are characterised by the addition of an external causer *vis-à-vis* the *qal*. This morphological process may imply the addition of a prefix (*hifʿil*), the doubling of a consonant (*piʿel*), and vowel change (*hifʿil* and *piʿel*).[9] In this respect, both stems can be considered morphological causatives. The internal *quality* of a mor-

[8] These definitions of 'causative' and 'factitive' follow those of Waltke and O'Connor (1990, 691).

[9] For a general overview of morphological processes for marking causatives, see Dixon (2000, 33–34).

phological causative, however, may vary, in that it may denote either a factitive or a 'real' causative. Note the variation between *qal* and *hifʿil* (causative) in examples (1) and (2), and the variation between *qal* and *piʿel* (factitive) in examples (3) and (4).

(1) וַיֵּצְאוּ אֶל־מִדְבַּר־שׁוּר

'and they went out to the desert of Shur' (Exod. 15.22)

(2) וְכִי אוֹצִיא אֶת־בְּנֵי יִשְׂרָאֵל מִמִּצְרָיִם׃

'so that I should bring the sons of Israel out of Egypt?' (Exod. 3.11)

(3) כָּל־הַנֹּגֵעַ בַּמִּזְבֵּחַ יִקְדָּשׁ׃

'anyone touching the altar becomes holy.' (Exod. 29.37)

(4) וַיִּמְשַׁח אֹתוֹ לְקַדְּשׁוֹ׃

'and he anointed him to sanctify him.' (Lev. 8.12)

Not all verbs occurring in the *hifʿil* or *piʿel*, however, can be classified as morphological causatives. In a number of cases, the relationship between the verbal root in the *qal* and *hifʿil/piʿel* cannot be explained in terms of causation or factivity. In particular, the meaning of the *piʿel* has been heavily disputed, and various functions have been ascribed to it, including resultative/telic, intensifier, and factitive. Therefore, in what follows, the *hifʿil* and *piʿel* verbs of Lev. 17–26 will be investigated with an eye to two factors: Do the verbs in fact form morphological causatives (in the sense that they add an external causer)? And, if so, can the causative dynamics be analysed into narrower

primitives (e.g., causative and factitive) that would account for the existence of the two stems?

3.1. *Hifʿil*

To form the perfect of the *hifʿil*-stem, a prefix (ה) is added to the verb and the second vowel is changed to *ī*. In the imperfect, the vowel of the prefix is typically changed to *a* and the second vowel to *ī* (Van der Merwe et al. 2017, §16.7). Examples of the *hifʿil* being used as a causative are abundant and include הוֹצִיא 'bring out' from יָצָא 'go out', הֵקִים 'erect' from קָם 'rise', and many others.[10]

Not all uses of the *hifʿil* are causative, however. A word like אזן H 'listen' is certainly not causative. It is sometimes used in parallel with שׁמע G 'hear', e.g., "Hear, O heavens, listen to me, O earth" (Isa. 1.2). To be sure, אזן does not qualify as a morphological causative, despite the *hifʿil* stem formation, because it has no correspondent in the *qal*, at least not in the Hebrew Bible, our main source for ancient Hebrew. To qualify as a morphological causative, therefore, the verb has to appear in both the *hifʿil* and the *qal*. Lev. 17–26 contains 47 different *hifʿil* verbs. Some of these also appear in the *qal* in those chapters, but this small corpus is obviously limited. To test whether these verbs may indeed qualify as morphological causatives, their attestations in the remaining CBH corpus are included. More specifically, a verb is considered a potential morphological causative if it occurs at least five times in the *qal* and at least five

[10] For more examples, see Joüon and Muraoka (1993, 162).

times in the *hifʿil* in the CBH corpus.[11] Consequently, as far as concerns Lev. 17–26, of the 47 *hifʿil* verbs in those chapters, 21 potentially form morphological causatives.

In order for a verb to be classified as a morphological causative, in addition to being attested in the *qal* and *hifʿil* forms, it should also add an external causer in the *hifʿil* that would distinguish the *hifʿil* sense from its non-causative *qal* equivalent. In other words, we may expect an increase in transitivity for morphological causatives, while the remaining *hifʿil* verbs that do not form morphological causatives should not exhibit such an increase. Accordingly, the 21 potential morphological causatives in Lev. 17–26 were tested for transitivity alternation between *qal* and *hifʿil*. All instances of the verbs in the CBH corpus were collected, along with the syntactic frames (intransitive, transitive, or ditransitive) in which they occur. Intransitive, transitive, and ditransitive verbs are defined as follows:[12]

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[11] Only verbs in simple predicate phrases (excluding participles) and verbs with object/subject suffixes are included in the dataset.

[12] Some caution is in order at this point. Firstly, in BH, objects need not be explicit, but can be inferred from the context. However, to decide whether an object should be inferred from the discourse context, or whether the predicate expresses a distinct lexical sense by means of valence decrease, is not always easy to decide (see Winther-Nielsen 2017, 379). For the present analysis, only phrases marked as direct objects (lexical or suffix) are included. Secondly, the ETCBC database does not always distinguish between direct objects and predicative complements, both of which are accusative, but only the former of which contributes to transitivity. A predicate complement denotes a

Intransitive: A verb with one argument, the subject only. Since the subject is not obligatory in BH, intransitive frames include here both clauses with explicit subject and clauses without explicit subject, e.g.:

(5) מַדּוּעַ לֹא־יִבְעַר הַסְּנֶה

'Why does the bush not burn?' (Exod. 3.3)

Transitive: A verb with two arguments: the subject and an object (lexical or suffix), e.g.:

(6) וַיְקַדֵּשׁ אֶת־הָעָם

'and he sanctified the people' (Exod. 19.14)

Ditransitive: A verb with three arguments: the subject and two objects (one suffix + one lexical, or two lexical objects), e.g.:

(7) וְלַמְּדָהּ אֶת־בְּנֵי־יִשְׂרָאֵל

'Teach the Israelites it' (Deut. 31.19)

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property of a participant, e.g., 'He seemed a nice guy / nice' where 'a nice guy' does not refer to a participant but expresses a property of the subject (Huddleston and Pullum 2002, 253). For the present analysis, this distinction influences the analysis of מלא 'be full' and will be explained more thoroughly there (§3.2.2). Thirdly, complement phrases sometimes mark indirect objects, e.g., וַיְדַבֵּר יְהוָה אֶל־מֹשֶׁה 'and YHWH spoke to Moses' (Lev. 17.1) and sometimes non-arguments, e.g., לָכֵן כֹּה־אָמַר יְהוָה עַל־אַנְשֵׁי עֲנָתוֹת 'therefore, thus says YHWH concerning the men of Anathoth' (Jer. 11.21). Since the ETCBC database simply marks both phrases as complements without further distinction, in the present analysis, oblique objects are missed. In short, the results of the quantitative model cannot stand alone, but must be followed by a more thorough analysis, as below.

Any verb may occur in any of these frames and in both of the stems. Thus, a verb may appear in six different syntactic constellations (e.g., intransitive *qal*, etc.), although, in reality, this is rarely the case. On the basis of these syntactic constellations, a simple alternation ratio can be computed. If the ratio of any constellation is given as the sum of all attestations of a verb in a particular stem and frame proportional to the sum of all constellations of that verb and stem, the alternation ratio (R) would be computed by multiplying the ratio of a *qal* constellation with the ratio of a *hifʿil* constellation:

$$\frac{\sum verb(Qal, frame)}{\sum verb(Qal)} \times \frac{\sum verb(Hiphil, frame)}{\sum verb(Hiphil)} = R$$

If, for instance, a verb is always intransitive in *qal* and always transitive in *hifʿil*, the alternation ratio between these two would be 100%. This makes sense, because there would be a 100% chance (on the basis of the corpus, of course) that the particular lexeme would always be *qal* intransitive and *hifʿil* transitive. In most cases, however, the picture is less clear. A verb may occur in different frames in the same stem. For instance, it may be 30% intransitive and 70% transitive in the *qal* and 50% intransitive, 40% transitive, and 10% ditransitive in the *hifʿil*. So, in order to compute the overall alternation ratio between the *qal* constellations and the *hifʿil* constellations, we need to compute the alternation ratios of any constellation in the *qal* and any constellation in the *hifʿil* and compare these. In particular, we want to calculate whether the verb generally alternates to lower or higher transitivity when it alternates from

qal to *hifʿil*. An alternation from an intransitive frame to a transitive frame is an alternation towards higher transitivity. In fact, there are three alternations possible for alternating towards higher transitivity: intransitive → transitive, intransitive → ditransitive, and transitive → ditransitive. The opposite alternations would be alternations towards lower transitivity. As noted, a verb may occur in all six constellations (three in the *qal* and three in the *hifʿil*), which means that there are nine possible alternations from *qal* to *hifʿil*. The overall alternation ratio is computed by subtracting the sum of all negative alternation ratios (towards lower transitivity) from the sum of all positive alternation ratios (towards higher transitivity). This computation is exemplified in Table 10 below. The scale goes from -100% (an argument is always dropped in the *hifʿil*) to 100% (an argument is always added in the *hifʿil*). If the result is 0%, the transitivity neither increases nor decreases when the verb alternates from *qal* to *hifʿil*. As shown in Table 10, הלך 'walk' (99%) has a much higher transitivity alternation ratio than ילד 'bear' (25.6%). In other words, הלך 'walk' has a higher tendency towards adding an extra argument in the *hifʿil* than does ילד 'bear'. We may therefore hypothesise that the *hifʿil* of הלך 'walk' is more likely to form a morphological causative than that of ילד 'bear'. In fact, since ילד only adds an extra argument in 25.6% of its alternations from *qal* to *hifʿil*, in the majority of cases, it does not add an extra argument, and it probably does not, therefore, form a morphological causative in the *hifʿil* according to this hypothesis.

Table 10: Calculation of the overall transitivity alternation ratio for two concrete verbs[13]

		הלך ‘walk’ (%)	**ילד ‘bear’ (%)**
1	Intransitive *qal* → Transitive *hifʿil*	99.3	29.7
2	Intransitive *qal* → Ditransitive *hifʿil*	0.0	0.0
3	Transitive *qal* → Ditransitive *hifʿil*	0.0	0.0
4	Ditransitive *qal* → Transitive *hifʿil*	0.2	0.0
5	Ditransitive *qal* → Intransitive *hifʿil*	0.0	0.0
6	Transitive *qal* → Intransitive *hifʿil*	0.0	4.1
	Transitivity increase (row 1 + 2 + 3)	99.3	29.7
	Transitivity decrease (row 4 + 5 + 6)	0.2	4.1
	Total (increase-decrease)	99.0%	25.6%

Along with the remaining verbs in H attested in both *qal* and *hifʿil*, הלך ‘walk’ and ילד ‘bear’ are plotted in Figure 8. The majority of the verbs show a tendency towards higher transitivity. Two verbs show only a minor tendency towards higher transitivity, that is, less than 50%, which means that the majority of their alternations neither increase nor decrease in transitivity. Three verbs even have an overall tendency towards transitivity decrease when alternating from *qal* to *hifʿil*.

[13] The computation is done by calculating all individual alternations from one combination of stem + frame to another. The table shows that הלך ‘walk’ occurs predominantly in the intransitive *qal* and transitive *hifʿil* combinations, resulting in an alternation ratio of 99.3% between these two constellations. The overall alternation ratio is computed by adding the scores of rows 1–3 and subtracting the scores of rows 4–6. It should be noted that alternations between two similar frames (e.g., Intransitive *qal* → Intransitive *hifʿil*) are not included in

In total, 22 different verbs that qualify as potential morphological causatives in the *hifʿil* are attested in Lev. 17–26. All attestations of these verbs in the *qal* and in the *hifʿil* have been collected from the entire CBH corpus, resulting in a dataset comprising 2,657 clauses corresponding to 17.94% of all relevant cases.[14] The verbs display a combined tendency towards increased transitivity of 70.97%. This tendency supports the common understanding of the *hifʿil* as a morphological causative. To evaluate the hypothesis of a correlation between causation and transitivity increase, all verbs have been inspected manually. In what follows, the verbs will be investigated in order to discern whether the transitivity hypothesis adequately accounts for morphological causatives. Moreover, the finer semantic properties of the events will be conceptualised using RRG logical structures.

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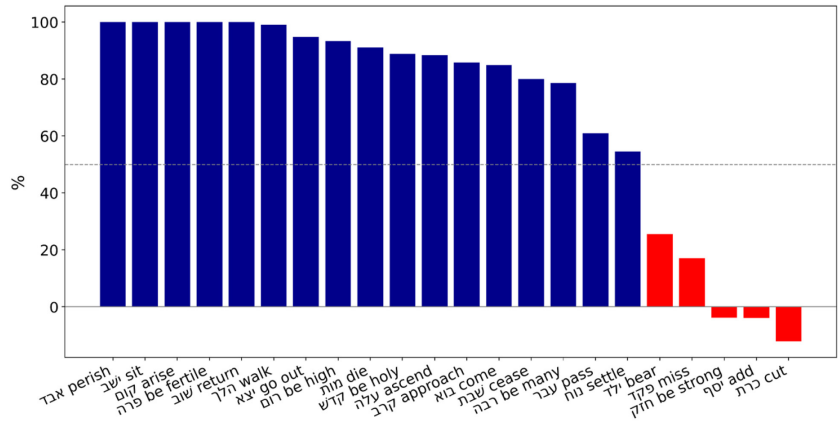
the computation. It becomes evident that ילד ‘bear’ has a lower alternation ratio towards higher transitivity than הלך ‘walk’ because most of its alternations are between similar frames.

[14] The relevant cases are constituted by all verbs in the CBH corpus attested at least five times in both the *qal* and the *hifʿil*: 14,808 cases. Only verbs in predicate phrases, possibly with object/subject suffixes, are included (excluding participles). The verbs must also occur in one of the three transitivity frames described above.

Figure 8: Transitivity alternation ratios for verbs in the *qal* and in the *hifʿil*. Red bars signal that the transitivity alternation ratio is below 50%; hence, the verbs in question are hypothesised not to form morphological causatives in the *hifʿil*.



3.1.1. *Hifʿil* Verbs in Lev. 17–26

אבד ‘perish’

אבד ‘perish’ is one of a few verbs with an overall alternation ratio of 100%, which means that it always occurs in higher transitive frames in the *hifʿil*. The verb clearly forms a morphological causative in the *hifʿil*, since the state of non-existence denoted by the *qal* (8) can be turned into a causative event using the *hifʿil* (9). Curiously, the verbal root also occurs frequently in the *piʿel* (10), and, at first glance, this form appears to carry the same meaning as the *hifʿil*.

(8) וַאֲבַדְתֶּם בַּגּוֹיִם

‘and you shall perish among the nations’ (Lev. 26.38)

(9) וְהַאֲבַדְתִּי אֶת־הַנֶּפֶשׁ הַהִוא

‘and I will destroy that soul [from the midst of his people].’ (Lev. 23.30)

(10) וְאִבַּדְתֶּם אֵת כָּל־מַשְׂכִּיֹּתָם

‘you shall destroy all their figured stones’ (Num. 33.52).

Ernst Jenni (1967), in an important study of the difference between the *hifʿil* and the *piʿel*, dedicated his discussion to the meaning of אבד. Since the verb has practically the same meaning in both stems, it provides an important case for considering the respective meanings of the stems. Rejecting the classical understanding of the *piʿel* as an intensifier, because both the *hifʿil* and the *piʿel* equally denote destruction and extinction, Jenni noted important differences between the uses of the two stems. Most importantly, Jenni argued that the *hifʿil* is a real causative, because the causee is caused to undergo a process towards destruction. By contrast, the *piʿel* denotes a much simpler event in that the undergoer is simply put into a state-of-being, and there is thus an exclusive focus on the resulting state. According to this interpretation, the *hifʿil* is a real causative, while the *piʿel* is factitive. Jenni supports this interpretation by noting that the *hifʿil* is only used with human undergoers, in contrast to the *piʿel*, which also accepts inanimate undergoers.[15] That the *hifʿil* only accepts human undergoers is reason-

[15] Although in agreement with Jenni, Waltke and O’Connor (1990, §27.2) caution that the association of human undergoers with the *hifʿil* and inanimate undergoers with the *piʿel* should not be exaggerated. Jenni (1967, 153) argues further that the *hifʿil* is only used in so-called

able if the undergoer is also the undersubject, that is, the undergoer is not simply put into a state but is the subject of the caused event. The distinction between factitive and causative implies that the relationship between the causer and the resulting event is less immediate in the *hifʿil*, where the undersubject performs the process of destruction. This difference is captured in RRG logical structures by differentiating these caused events into one of incremental process with a termination (*hifʿil*) [**do′** (x, Ø)] CAUSE [PROC **degenerate′** (y) & INGR NOT **exist′** (y)] and one of simple accomplishment (*piʿel*) [**do′** (x, Ø)] CAUSE [INGR NOT **exist′** (y)].

יָשַׁב ‘sit’

This verb belongs to a class of stage-level predicates which is characterised by sometimes referring to temporary events

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occasional contexts, i.e., case laws and concrete narrative situations. By contrast, the *piʿel* is also used in habitual contexts, such as apodictic laws. Finally, the relationship between the event and the undergoer in the *hifʿil* is ‘substantial’, which means that the undergoer undergoes the event by logical necessity. The *piʿel*, on the other hand, assumes an ‘accidental’ relationship between event and undergoer, because the destruction or extinction happens as an accidental consequence of previous events. This difference is illustrated by comparing Deut. 12.3 and 7.24. In the former case, אבד D serves to sharpen the rhetoric, i.e., “blot out the names of the idols” is a consequence—but not a necessary consequence—of breaking down the altars and burning the sacred poles, hence accidental. In the latter case, אבד H in “blot out the names of the kings” is a critical part of the destruction. For this and other examples, see Jenni (1967, 154–55).

(Winther-Nielsen 2016, 81).[16] The situation described in sentence (11) is temporary and lasts for only seven days. In (12), ישׁב H denotes a causative event where the undersubject is caused or allowed to live in booths in the wilderness. With these stage-level predicates, the *hifʿil* is not used to express the bringing about of a state (factitive) but the causing of an event (causative). The contrast is readily seen with another stage-level predicate, שׁכן 'dwell', which occurs in both *piʿel* and *hifʿil* and offers an opportunity for comparison. When the *piʿel* is used, the focus is on the state of dwelling and not on the fact that the undergoer performs an act of settling down (e.g., Deut. 16.6).

(11) בַּסֻּכֹּת תֵּשְׁבוּ שִׁבְעַת יָמִים

'You shall live in booths for seven days' (Lev. 23.42)

(12) כִּי בַסֻּכּוֹת הוֹשַׁבְתִּי אֶת־בְּנֵי יִשְׂרָאֵל

'that I made the sons of Israel live in booths' (Lev. 23.43)

קום 'arise'

Many motion verbs have high transitivity alternation scores, including the verb קום 'arise' (100%). In the *qal*, the verb is used

[16] Stage-level predicates are predicates depicting stative situations that are not necessarily permanent. While some situations are necessarily permanent, such as 'The city lies at the base of the mountains', other situations are temporary, e.g., 'The book is lying on the table'. In English, the progressive *-ing* does not normally occur with stative verbs, but it can occur with stage-level predicates, e.g., 'The book is lying on the table'. Besides ישׁב 'sit', other frequent BH stage-level predicates are עמד 'stand', שׁכב 'lie', שׁכן 'dwell', גור 'dwell', and לין 'spend the night' (Winther-Nielsen 2016, 81).

of the activity of rising up or taking a stand (13). The *hifʿil* derives a causative event from the *qal* and is frequently translated 'erect', as in (14). Motion verbs like קום tend to be causative in the *hifʿil*, and these verbs generally score highly with respect to transivitity alternation. The motion verbs found in Lev. 17–26 are שׁוב 'return' (100%), הלך 'walk' (99%), יצא 'go out' (95%), עלה 'ascend' (89%),[17] קרב 'approach' (86%), בוא 'come' (85%), and עבר 'pass' (61%).

(13) וַיָּ֥קָם לִקְרָאתָֽם

'and he rose to meet them' (Gen. 19.1)

(14) וּמַצֵּבָה֙ לֹא־תָקִ֣ימוּ לָכֶ֔ם

'and you may not erect standing stones for yourselves' (Lev. 26.1)

מות 'die'

מות 'die' forms a morphological causative in the *hifʿil* because the original subject in the *qal* (15) becomes the undersubject in the *hifʿil* (16). Traditionally, this verb is interpreted as a process

[17] Although עלה most frequently means 'ascend' and denotes physical activity, the verb also appears frequently in cultic contexts. For instance, sacrificing an offering is commonly expressed by עלה H (e.g., Gen. 8.20; 22.2, 13; Exod. 24.5; 30.9; 40.29; Lev. 14.20; 17.8). Although one might be tempted to see the cultic use as a metaphorical extension of the causative of 'ascend', that is, to cause the sacrifice to ascend to YHWH, it should be noted that the same verb is also used to express the kindling of a lamp (e.g., Exod. 25.37; 27.20; 40.25; Lev. 24.2). Therefore, the verb is best translated 'burn' or 'kindle' in the contexts of sacrifice and lamp kindling; see Milgrom (1991, 172–74).

leading towards an instant change of state in the *qal*, that is, an accomplishment, BECOME **dead′** (x) (see Winther-Nielsen 2016, 88), although in some cases it might indicate a pure state-of-being (Winther-Nielsen 2008, 471). The meaning of (15) does not so much refer to the state of death than to the childless process towards that state. In the *hifʿil*, the verb refers to the act of killing, a causative accomplishment [**do′** (they, Ø)] CAUSE [BECOME **dead′** (him)], yet less brutally than הרג ‘kill’, which would be translated ‘murder’.[18]

(15) עֲרִירִים יָמֻתוּ׃

‘They will die childless.’ (Lev. 20.20)

(16) לְבִלְתִּי הָמִית אֹתוֹ׃

‘and do not put him to death.’ (Lev. 20.4)

שׁבת ‘cease’

For other verbs, it is less clear whether, or to what extent, the *hifʿil* is derivable from the *qal*. One such case is שׁבת ‘cease’, which occurs six times in Lev. 17–26. In the *qal*, the root typically means ‘rest’ or ‘cease’ from activity (17). However, when the verb appears in conjuction with the noun שׁבת ‘sabbath’, the idea of observing the sabbath is expressed (Lev. 23.32; 25.2; 26.35). In the *hifʿil*, a similar idea of ‘cease’ exists, but it is not

[18] The decomposition of killing verbs is discussed in Winther-Nielsen (2008, 469–71). It has also been noted (Gerleman 1984) that when מות H forms parallel expressions with נכה H ‘strike’, the verb does not refer to death so much as to the act leading to death (see Josh. 10.26; 11.17; 2 Sam. 4.7; 18.15; 21.17; 1 Kgs 16.10; 2 Kgs 15.10, 30).

immediately derivable from the *qal*. In (18), the idea is that YHWH hinders wild animals from being in the land, or, put differently, YHWH causes the animals to *cease* from being in the land. In general, שׁבת H appears to denote causation of absence, either by removal or hindrance of access. Obviously, by implication, removal or hindrance of access means ceased activity.[19]

(17) אָז תִּשְׁבַּת הָאָרֶץ

'Then the earth shall rest.' (Lev. 26.34)

rest′ (earth)

(18) וְהִשְׁבַּתִּי חַיָּה רָעָה מִן־הָאָרֶץ

'I will keep the wild animals from the land.' (Lev. 26.6)

[**do′** (I, Ø)] CAUSE [NOT **be-LOC′** (land, wild animals)]

3.1.2. *Hifʿil* Verbs with <50% Transitivity Alternation Scores

The verbs investigated so far scored higher than 50% in transitivity alternation and were hypothesised to form morphological causatives in the *hifʿil*. A minority of verbs scored less than 50% and are thus less likely to form morphological causatives in the *hifʿil*, because they are less likely to add an external causer. These verbs will be discussed in what follows.

ילד 'bear'

This verb occurs in Lev. 17–26 once in the *hifʿil* and never in the *qal*. It occurs frequently in both stems elsewhere, however, par-

[19] See Exod. 5.5; 12.15; Lev. 2.13; Deut. 32.26; 2 Kgs 23.5, 11.

ticularly in genealogies (e.g., Gen. 5 and 11). It is common to differentiate between *qal* ‘bear a child’ and *hifʿil* ‘cause to bring forth’ or ‘beget’ (Köhler et al. 1994, ילד; Kühlewein 1984), thereby underscoring the role of the *hifʿil* as adding an external causer to the event. One would expect the *qal* to have female subjects and the *hifʿil* male subjects, but this is not always the case. Even though female subjects tend to be used with the *qal* and male subjects with the *hifʿil*, male subjects can occur with both stems, e.g., (19).

(19) וְעִירָ֖ד יָלַ֣ד אֶת־מְחוּיָאֵ֑ל

‘and Irad bore Mehujael’ (Gen. 4.18)

(20) וַיּ֤וֹלֶד מִן־חֹדֶשׁ֙ אִשְׁתּ֣וֹ אֶת־יוֹבָֽב

‘By Hodesh, his wife, he begot Jobab’ (1 Chr. 8.9)

If the *hifʿil* is indeed the causative equivalent of *qal*, the full causal chain is rarely fully syntactically expressed, e.g., ‘a man causing a woman to bear a child’. The absense of a full syntactic causal chain is illustrated well by the low transitivity alternation ratio (26%), because a full causal chain in the *hifʿil* would increase the transitivity alternation ratio. The example in (20) provides an exception to the common simplified syntax (although outside the actual corpus of the present analysis). If this interpretation is true, the *qal* event is best understood as a causative accomplishment of existence (see Winther-Nielsen 2016, 88), while an extra causer is added in the *hifʿil*: [**do′** (x, Ø)] CAUSE [[**do′** (y, Ø)] CAUSE [BECOME **exist′** (z)]].

פקד ‘miss’

פקד ‘miss’ has a small tendency towards higher transitivity in the *hifʿil* (17%). The most common meanings of the verb in the *qal* are ‘visit’, ‘summon’ (an army), and ‘avenge’ sin. In the *hifʿil*, the verb can similarly mean ‘summon’ (e.g., ‘summon terror against you’ in Lev. 26.16), or ‘install’ in an official position. Winther-Nielsen (2016, 85) contrues the verb as expressing a simple, non-causative event, that is, **do′** (x, [**visit′** (x, y)]) or **do′** (x, [**summon′** (x, y)]), depending on the actual use. In any case, the difference between the *qal* and the *hifʿil* cannot be explained in terms of causation.

חזק ‘be strong’

חזק ‘be strong’ has a negative tendency towards higher transitivity in the *hifʿil* (-4%). The fact that the *hifʿil* cannot always be seen simply as a causative equivalent of the *qal* is also demonstrated by examples from the corpus:

(21) וַיְהִי כִּי חָזְקוּ בְּנֵי יִשְׂרָאֵל

‘When the sons of Israel became strong’ (Josh. 17.13)

(22) וְהֶחֱזַקְתָּ בּוֹ

‘you shall seize it [= the hand]’ (Lev. 25.35)

(23) הַחֲזֵק מִלְחַמְתְּךָ אֶל־הָעִיר

‘Intensify your war against the city!’ (2 Sam. 11.25)

In the *qal*, the verb regularly expresses a situation of being strong (21). The *hifʿil* can be used to express the causative counterpart of ‘be strong’, namely, ‘strengthen’ or ‘intensify’, as in

(23). However, the *hifʿil* also frequently occurs with 'hand' or another object to be seized (22). Jenni (1968, 46) argues that חזק + oblique object is best paraphrased "(die Hand) an etwas fest sein lassen," that is, letting the hand be firm on something, or simply, grasping or seizing. This construal comes close to a regular causative. Jenni does not, however, provide examples, and I have only been able to identify one example where a direct object seizes an oblique object: "Let your hand be firm on/seize him [= the boy], because I will make him a great nation" (Gen. 21.18).[20]

יסף 'add'

יסף 'add' also has a tendency towards lesser transitivity when alternating from *qal* to *hifʿil* (-4%). It occurs four times in Lev. 17–26, three times in the *qal* and once in the *hifʿil*. The few examples in Lev. 17–26 yield a variety of meanings. The verb is used in the *qal* in the sense of 'add' (24), but also in the sense of 'continue' (25). In the *hifʿil*, the verb is used to mean 'increase' (26), which seems similar to 'add'. In any case, the relationship between the *qal* and the *hifʿil* is not one of causation.

(24) וְיָסַף חֲמִשִׁיתוֹ עָלָיו

'and he shall add its fifth to it' (Lev. 22.14; cf. 26.21)

(25) וְיָסַפְתִּי לְיַסְּרָה אֶתְכֶם שֶׁבַע

'and I will continue to discipline you sevenfold' (Lev. 26.18)

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[20] A slightly different example is found in Judg. 7.20: "And they seized the torches with their left hands," where 'with their left hands' is a PP.

(26) לְהוֹסִיף לָכֶם תְּבוּאָתוֹ

‘in order to increase its produce for you’ (Lev. 19.25)

כרת ‘cut’

כרת ‘cut’ has the lowest transitivity alternation score among the verbs considered here (-15%), and a closer inspection of the verb supports the hypothesis that the verb does not form a morphological causative in the *hifʿil*. כרת is frequently deployed in the *qal* to denote ‘cutting down’, e.g., of trees (Judg. 9.48). It is also used to express the initiation of a covenant or treaty. In the *hifʿil*, it expresses destruction or removal (e.g., extermination of a person, see Lev. 17.10), a meaning somewhat similar to the *qal* meaning of ‘cutting down’. Interpreted this way, the event is a causative accomplishment of non-existence.

3.1.3. Summary

To conclude, then, of the 17 verbs hypothesised to form morphological causatives in the *hifʿil*, two were marked ambiguous (שׁבת ‘cease’, עלה ‘ascend’). For the remaining verbs, the relationship between the *qal* and the *hifʿil* could reasonably be explained in terms of causation. The five remaining verbs in this corpus were hypothesised not to form morphological causatives in the *hifʿil* due to their low transitivity alternation ratios. On the basis of closer analysis, this hypothesis held true in most cases, since the variation between the stems could not easily be accounted for by causation. ילד ‘bear’ provided an exception in that the *hifʿil* stem formation could in fact be construed as adding an extra causer to an existing causative event of giving

birth. Moreover, חזק H ‘be strong’ could be construed as a morphological causative in a number of cases, perhaps even the use of חזק H as ‘seize/grasp’, if an object (most likely ‘hand’) with which to seize something is inferred.

3.2. *Piʿel*

While the *hifʿil* is the prototypical morphological causative in BH, another stem, the *piʿel,* also seems to carry a causative sense insofar as alternation between *qal* and *piʿel* often involves the addition of an external causer. Morphologically, the *piʿel* is typically formed by doubling of the second stem consonant and by vocalisation changes. In the perfect, the stem vowel is *i*. In the imperfect, the prefix vowel is reduced, and the stem vowel is *a* (Van der Merwe et al. 2017, §16.4).

The great diversity of meanings associated with the *piʿel* often perplexes linguists. Traditionally, the *piʿel* was primarily seen as an intensifier, although other functions were acknowledged as well. Inspired by Albrecht Goetze’s (1942) study of the Akkadian D-stem, Jenni (1968) embarked on a close analysis of all 415 BH verbs attested in the *piʿel*, the Hebrew D-stem. He came to the conclusion that with verbs that are intransitive in the *qal*, the *piʿel* is factitive, while with transitive verbs, the *piʿel* is resultative. Waltke and O’Connor further developed Jenni’s classification. They divided the factitive into a ‘real’ factitive and a ‘psychological/linguistic’ factitive. The ‘real’ factitive refers to an objective event which can be seen apart from the participants involved (Waltke and O’Connor 1990, §24.2.e). The ‘psychological/linguistic’ factitive refers to a subjective event

where the resultant state of affairs cannot be seen (Waltke and O'Connor 1990, §24.2.f). To the latter category belong 'declarative' and 'estimation', which do not bring about an objective state but *declare* or *esteem* an undergoer to be in a certain state.

Most recently, John C. Beckman (2015) has challenged the explanation of the *piʿel* given by Waltke and O'Connor and revived the classical interpretation of the *piʿel* as an intensifier. In particular, Beckman argues that a close inspection of the *piʿel* verbs does not support the claim that the *piʿel* is primarily used with a factitive/resultative meaning. On the contrary, the *piʿel* is far more often used to describe processes, a grammatical aspect otherwise attributed to the *qal* by Waltke and O'Connor (Beckman 2015, 247). Moreover, the problem for both Jenni and Waltke and O'Connor is that they cannot account for syntactically intransitive verbs in the *piʿel* (Beckman 2015, 21). These verbs include דבר 'speak' and צוה 'command', which are the two most frequent lexemes found in the *piʿel* and which are certainly not factitive.

Beckman relies on N. J. C. Kouwenberg's (1997; 2010) diachronic work on the Akkadian D-stem. Kouwenberg had argued that the D-stem was originally formed by geminate adjectives and was marked for intensity in contrast to the regular G-stem (which was only formed by simple adjectives).[21] According to Beckman, this Proto-Semitic development explains the association between the *piʿel* and intensification. Later, the D-stem category was broadened to include other expressions of verbal

[21] For a summary of Kouwenberg's thesis, see Beckman (2015, 12–13).

plurality. Kouwenberg considers ‘verbal plurality’ a broad category including not only plural subjects and objects but also intensive action, iteration, and continuation. Moreover, since the D-stem was marked for intensity, it evolved into being marked for high semantic transitivity.[22] In other words, because intensity is associated with high affectedness of the participants involved, the D-stem became marked for high semantic transitivity with highly affected participants. In effect, “because a factitive meaning has a higher semantic transitivity than a stative meaning, the D stem became preferred for a factitive meaning, and the G stem lost its factitive meaning” (Beckman 2015, 13).

Diachronic considerations aside, although some verbs in the *piʿel* stem formation are indeed factitive in contrast to their non-factitive *qal* correspondents, the *piʿel* should not, according to Beckman, be considered a factitive stem. Rather, the *piʿel* is more fundamentally associated with verbal plurality and high semantic transitivity. In this respect, the intensification often associated with the *piʿel* can be explained as an implication of verbal plurality (Beckman 2015, 248). The fact that the *piʿel* more often has a factitive meaning than the *qal* is not because the *piʿel* is a factitive stem. Rather, according to Beckman

[22] Semantic transitivity contrasts with syntactic transitivity (see Hopper and Thompson 1980; Givón 2001, I:109–10). Whereas syntactic transitivity relates to the number of syntactic arguments, “Semantic transitivity is a multivalued property of a clause; the more the agent of the clause affects the patient, the higher the semantic transitivity of the clause” (Beckman 2015, 13 n. 9). Further explanation is given below (§5.0).

(2015, 244), the reason for the *piʿel* more often being factitive lies in the fact that the *piʿel* prefers high-semantic-transitivity contexts while the *qal* prefers low-semantic-transitivity contexts. This argument is underscored by the observation that verbs with the same meaning in the *qal* and the *piʿel* prefer the *qal* in low-semantic-transitivity contexts and the *piʿel* in high-semantic-transitivity contexts. Beckman's thesis explains a number of *qal-piʿel* alternations, e.g., זבח 'slaughter', which can occur in both the *qal* and the *piʿel* with a plural subject but never in the *piʿel* with a singular subject (Beckman 2015, 222). In fact, of the 138 verbs with similar meaning in the *qal* and the *piʿel*, 49 are marked for verbal plurality in the *piʿel* but not in the *qal* (Beckman 2015, 220). These verbs thus support Beckman's intensification/plurality thesis. If the criteria are tightened to include only those verbs that occur at least five times in each stem, 27% of the verbal roots show "some level of evidence" of being marked for plurality in the *piʿel* and not in the *qal*, while 15% show "strong, unambiguous evidence" of being so marked (Beckman 2015, 222). While Beckman should certainly be commended for his empirical approach, most verbal roots are not well accounted for by his thesis of verbal plurality. Beckman (2015, 224) provides evidence of a tendency towards higher semantic transitivity in the *piʿel* than in the *qal*, but it should be noted that the most frequent verbs have been sampled, which means that infrequent verbs are given more statistical weight. The verb דבר 'speak', for instance, occurs 1,085 times in the *piʿel*, always in low-transitivity contexts, but only 90 of these instances are included. Due to the sampling, Beck-

man can demonstrate a stronger tendency towards higher semantic transitivity in the *piʿel* than if he had included all instances.

The general challenge of investigating the function(s) of the *piʿel* is the vast number of infrequent verbs. In the Hebrew Bible, only 77 roots occur more than five times in both the *qal* and the *piʿel* out of 302 roots occurring in both of these stems. Consequently, for most verbs, we cannot know whether we are observing a language pattern in our corpus, or whether the relative frequencies are merely accidental. Moreover, while both of the two interpretations of the *piʿel*, the factitive/resultative interpretation and the intensifier interpretation, succeed in accounting for a good portion of the verbal roots, neither of them accounts well for all of the roots. The purpose of this study is not to provide a resolution to this deadlock, as this task would require a study of its own. Rather, the purpose of the following survey is two-fold. Firstly, the verbs of Lev. 17–26 that potentially form morphological causatives in the *piʿel* will be identified on the basis of transitivity alternation between *qal* and *piʿel*. In this respect, the procedure is similar to that carried out for the *hifʿil* (see §3.1). Secondly, the *piʿel* verbs of Lev. 17–26 will be conceptualised in RRG logical structures in order to discern finer causative distinctions and derive semantic roles.

3.2.1. *Piʿel* Verbs in Lev. 17–26

Morphological causatives are constructions marked by a morphological process applied to the verb by which an external causer is added to the clause. Accordingly, to discern whether a

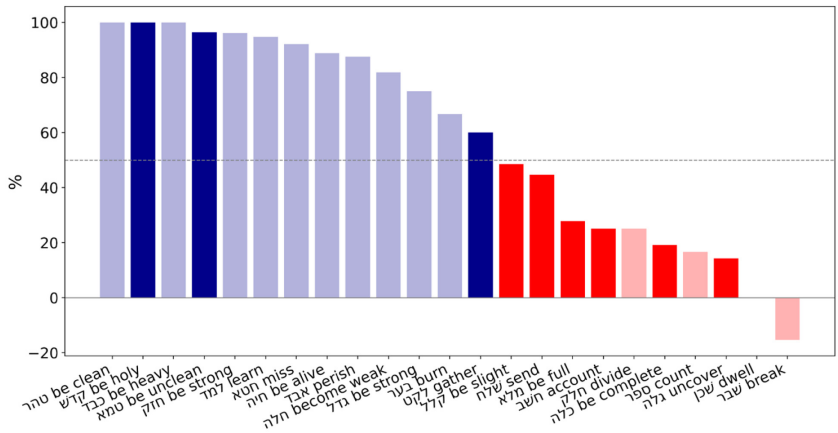
verb in the *piʿel* forms a morphological causative, we can test for transitivity increase between its *qal* stem formation and its *piʿel* stem formation. On this basis, we can examine whether a verbal root occurring in both *qal* and *piʿel* forms a morphological causative in the *piʿel*, or whether the relationship between the *qal* and the *piʿel* should be construed differently.

Accordingly, the *piʿel* verbs in H were analysed for transitivity alternation, similarly to the *hifʿil* verbs documented above. In total, nine different verbs occur in the *piʿel* in these chapters, and all attestations of these verbs in the *qal* and the *piʿel* across the entire CBH corpus have been collected, resulting in a dataset comprising 590 clauses, that is, 39.81% of all relevant cases.[23] Since the number of roots under consideration is small, the remaining verbs from the larger corpus have been included in the graph for comparison (Figure 9). The syntactic frames for each clause have been recorded (intransitive, transitive, ditransitive), and the alternation ratios between *qal* frames and *piʿel* frames were computed for each verb. The verbs displayed in the graph exhibit a combined alternation ratio towards higher transitivity of 63.4%; that is, slightly lower than that of the *hifʿil* (70.97%). As shown in Figure 9, the verbs קדשׁ 'be holy' and טמא 'be unclean' offer the most convincing examples, with alternation ratios at, or close to, 100%. In terms of

[23] The relevant cases are constituted by all verbs in the CBH corpus attested at least five times in both the *qal* and the *piʿel*: 1,482 cases. Only verbs in simple predicate phrases and predicates with object/subject suffixes are included. Hence, participles are not included, and some *piʿel* cases will inevitably be missing for this reason.

alternation ratio, these verbs are similar to verbs such as טהר ‘be clean’, כבד ‘be heavy’, חזק ‘be strong’, למד ‘learn’, and חטא ‘miss’. In what follows, each case from Lev. 17–26 will be explored in detail in order to investigate 1) whether the transitivity hypothesis holds; and 2) how the verbs can be conceptualised with RRG logical structures.

Figure 9: Transitivity alternation ratios for verbs in the *qal* and *piʿel*. Verbs not occurring in Lev 17–26 are less opaque.



קדשׁ ‘be holy’

קדשׁ G ‘be holy’ most frequently denotes a change of state from profane to holy. In fact, this change may often be punctual, as illustrated in (27). The lexical root also occurs in the *piʿel* and *hifʿil* with different meanings. In the *piʿel*, there are two dominant uses. Firstly, the *piʿel* is used in a factitive sense, that is, an external causer causes the undergoer to enter a state of holiness (28). This event is hardly punctual, but requires a strict ritual procedure within an incremental process of sanctification. A fitting logical structure for this type of event is the causative

accomplishment. Secondly, the *piʿel* is often used in an estimative sense, that is, an actor does not cause a process of sanctification but merely acknowledges that the undergoer is already holy. The estimative is a subset of the declarative and may also be labelled a 'psychological/linguistic' factitive (see Waltke and O'Connor 1990, §24.2f). In RRG, the declarative may be called a 'propositional attitude', which is a two-argument stative with a judger and a judgment (29). The factitive and the declarative are thus given quite different logical structures, and the arguments are ascribed different semantic roles. Only the factitive involves an external causer. Finally, the root also appears in the *hifʿil* (30). Like the factitive *piʿel*, the *hifʿil* adds an external causer. However, there appears to be an important difference between those two senses. The *hifʿil* sense does not so much indicate a ritual *procedure* as rather a ritual *transfer* of an entity from the profane to the holy sphere (see Jenni 1968, 61). This interpretation is underscored by the frequent appearance of the complement לַיהוה 'to YHWH' (or לִי 'to me') by which the recipient of the ritual transfer is marked (Müller 1984, 592).[24] Moreover, in Lev. 27.9, the *hifʿil* is used interchangeably with נתן 'give'.[25] If this interpretation is correct, the *piʿel* and *hifʿil* stems of קדשׁ 'be holy' both involve a causer, but in two different

[24] The *piʿel* is also used once with this meaning (Exod. 13.2).

[25] "Anything which one may give (נתן G) to YHWH shall be holy" (Lev. 27.9). Similar expressions are produced with קדשׁ H 'holy' in Lev. 27, e.g., "a man, if he consecrates (קדשׁ H) his house to YHWH" (27.14; cf. vv. 16, 22). Both terms depict the transfer of an entity to YHWH, and they can therefore be used interchangeably in this respect.

ways. In the former stem, the undergoer of the causation is a patient undergoing a process of becoming holy. With *hifʿil*, the undersubject is not simply a patient, coming into a state-of-being, but a recipient who comes into possession of the entity ritually transferred.[26] This difference is important, because it suggests that *piʿel* and *hifʿil* subcategorise for different semantic roles.

(27) כָּל־הַנֹּגֵעַ בַּמִּזְבֵּחַ יִקְדָּֽשׁ׃

‘everyone who touches the altar becomes holy.’ (Exod. 29.37)

INGR **holy′** (everyone touching the altar)

(28) כִּֽי אֲנִ֥י יְהוָ֖ה מְקַדְּשֽׁוֹ׃

‘because I am YHWH who sanctifies him.’ (Lev. 21.15)

[**do′** (I, Ø)] CAUSE [PROC **holy′** (him) & INGR **holy′** (him)]

(29) וְקִדַּשְׁתּוֹ

‘And you shall consider him holy’ (Lev. 21.8)

consider′ (you, **holy′** (him))

(30) אֲשֶׁ֣ר יַקְדִּישׁ֔וּ בְּנֵי־יִשְׂרָאֵ֖ל לַיהוָֽה

‘[the holy donations] which the sons of Israel sanctify to YHWH’ (Lev. 22.3)

[**do′** (Israelites, Ø)] CAUSE [BECOME **have′** (YHWH, holy donations)]

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[26] For the semantic difference between ‘patient’ and ‘recipient’, see §6.0.

טמא ‘be unclean’

טמא G ‘be unclean’ refers to a state of ritual impurity (31). In the *piʿel*, the verb is factitive in that an external causer causes an undergoer to become ritually impure (32). In contrast to the ritual process of sanctification, as expressed by קדשׁ D ‘be holy’, there is no evidence that the causation of becoming unclean is incremental in nature. A person or object cannot be more or less impure. Rather, even the slightest exposure to impurity requires a full cleansing ritual; hence, the causation of impurity should probably be understood as a punctual event. If this interpretation is accepted, the logical structure would be a causative achievement [**do′** (x, Ø)] CAUSE [INGR **unclean′** (y)]. Finally, this verbal root in the *piʿel* is also frequently used in a declarative sense, that is, the unclean state of an entity is acknowledged and declared by the actor (e.g., Lev. 13.3).

(31) וְטָמֵא עַד־הָעֶרֶב

‘and he is unclean until evening’ (Lev. 17.15)

(32) וְלֹא יְטַמְּאוּ אֶת־מַחֲנֵיהֶם

‘and they may not defile their camp’ (Num. 5.3)

לקט ‘gather’

לקט ‘gather’ has a small tendency towards higher transitivity in the *piʿel* (60%). However, the meaning of the verb is the same in both stems, namely ‘to gather’. Beckman (2015, 198) notes that this verb belongs to a group of verbs for which there is a tendency towards a plural object (grammatically and semantically) in the *piʿel*, in contrast to the *qal*, which prefers singular objects.

According to Beckman, then, this tendency, albeit modest, supports a semantic transitivity hypothesis of the *piʿel*, rather than the classical factitive interpretation. One wonders, however, why the writer of Gen. 31.46 chose the *qal* form when the object is clearly plural (33). Jenni (1968, 188–89) explains the difference between the *qal* and the *piʿel* by pointing to the definiteness of the object. In the *qal*, the object is less definite, e.g., 'stones' in (33), while the object in the *piʿel* is usually well defined, e.g., 'the leftovers' in (34)—cf. Lev. 23.2—or 'the grapes of your vineyard' (Lev. 19.10). Thus, the *piʿel* appears to be more resultative. To be sure, resultatives are also associated with high semantic transitivity. A logical structure may capture the resultative sense by adding the complete removal of the object gathered to the causative accomplishment: [**do′** (x, Ø)] CAUSE [BECOME **have′** (x, y) & INGR NOT **be-at′** (z, y)].

(33) וַיֹּ֤אמֶר יַעֲקֹב֙ לְאֶחָ֔יו לִקְט֖וּ אֲבָנִ֑ים

'and Jacob told his fellows to gather stones' (Gen. 31.46)

(34) וְלֶ֥קֶט קְצִֽירְךָ֖ לֹ֣א תְלַקֵּ֑ט׃

'and you may not gather the leftovers of your harvest.' (Lev. 19.9)

3.2.2. *Piʿel* Verbs with <50% Transitivity Alternation Scores

For the remaining *piʿel* verbs with *qal* equivalents, the transitivity alternation ratios are below 50%, which means that the verbs are not likely to form morphological causatives in the *piʿel*.

קלל ‘be slight’

קלל ‘be slight’ has an alternation ratio slightly below the 50% threshold (49%). The root is used in the *qal* to denote a stative situation, ‘be small’ or ‘be insignificant’, e.g., ‘be insignificant in her eyes’ (Gen. 16.5). In the *piʿel*, the verb is used exclusively as a declarative, that is, to declare someone small, or to curse someone (Gen. 19.14; Köhler et al. 1994, קלל; Jenni 1968, 41). Beckman (2015, 100), however, argues that eight instances of קלל in the *piʿel* require a process interpretation rather than a factitive/declarative interpretation. Two of these cases are found in Leviticus (24.14, 23).[27] In both cases, the verb is a nominal participle referring to the ‘one cursing’ (35). Beckman argues that these examples focus on the action and not the affected undergoer, as would be expected for a factitive interpretation. In other words, according to Beckman, a factitive reading of קלל D requires at least an affected undergoer, because the undergoer is the ‘one deemed insignificant’. It should be noted, however, that of the nine attestations of the קלל D participle in the HB, six take a direct object (e.g., 36).[28] In these cases, we should certainly understand the *piʿel* as a nominal declarative. In the two cases of Lev. 24, the object is probably implied, because the undergoer of the curse, YHWH, is present in the context (24.11, 15).

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[27] The remaining cases are: Exod. 21.17; 1 Sam. 3.13; 2 Sam. 16.5, 7; Ps. 62.5; Eccl. 7.21.

[28] See also Gen. 12.3; 2 Sam. 16.7; Jer. 15.10; Prov. 20.20; Eccl. 7.21.

(35) הוֹצֵא אֶת־הַמְקַלֵּל אֶל־מִחוּץ לַמַּחֲנֶה

‘Bring the curser out of the camp’ (Lev. 24.14)

(36) וּמְקַלֵּל אָבִיו וְאִמּוֹ מוֹת יוּמָת׃

‘And the one cursing his father or his mother shall surely be put to death.’ (Exod. 21.17)

שׁלח ‘send’

שׁלח ‘send’ has almost the same meaning in both *qal* and *piʿel*. Jenni (1968, 193–96), however, has suggested a distinction along the lines of process and result. While the *qal* is frequently employed to express ‘stretching’ (37), the *piʿel* is used in contexts where an undergoer is sent away (38). Thus, the *piʿel* is distinguished by separation as the result of the event. An RRG logical structure captures this distinction by adding a punctual endpoint to the representation of the *piʿel* sense.

(37) וַיִּשְׁלַח אַבְרָהָם אֶת־יָדוֹ וַיִּקַּח אֶת־הַמַּאֵכֶלֶת לִשְׁחֹט אֶת־בְּנוֹ׃

‘And Abraham stretched out his hand and took the knife to slaughter his son.’ (Gen. 22.10)

[**do′** (x, Ø)] CAUSE [**do′** (y, [**move.away.from.ref.point′** (y)])]

(38) וַיְשַׁלַּח אֶת־הַיּוֹנָה

‘and he sent out the dove’ (Gen. 8.12)

[**do′** (x, Ø)] CAUSE [**do′** (y, [**move.away.from.ref.point′** (y)]) & INGR NOT **be-at′** (z, y)]

מלא ‘be full’

Despite its low alternation score (28%), מלא ‘be full’ should be considered a factitive. The model used for calculating the alternation scores does not always distinguish between nominal phrases that function as direct objects and NPs with other functions. מלא ‘be full’ is one of several verbs where some property of a participant may be expressed by an NP.[29] Unlike direct objects, predicative NPs do not realise participants but express properties, like adjectives (Huddleston and Pullum 2002).[30] In (39), then, the NP זִמָּה ‘loose conduct’ is not a direct object, but rather a predicative complement that denotes the state-of-being of the land. The sentence is therefore intransitive. While Hebrew expresses the property with an NP, English uses a preposition ‘with’ or ‘of’.[31] The *piʿel* realises an external causer with a direct object (40). Therefore, the *piʿel* is rightly considered a factitive in contrast to the stative ‘be full of…’ in the *qal*.

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[29] Other such verbs include קרא (e.g., וַיִּקְרָא אֶת־שְׁמוֹ גֵּרְשֹׁם ‘and he called his name Gershom’, where ‘Gershom’ is a predicative NP denoting a property of ‘his name’), and לבשׁ (e.g., וַיַּלְבֵּשׁ שָׁאוּל אֶת־דָּוִד מַדָּיו ‘and Saul clothed David with his armour’, where מַדָּיו is a predicative NP). Other verbs of wearing/undressing and abundance/scarcity apply as well: פשׁט ‘strip’ (e.g., Gen. 37.23; Lev. 16.24; 21.10), שׂבע ‘be sated’ (Exod. 16.12; Isa. 1.11), חסר ‘lack’ (e.g., Deut. 2.7; Isa. 32.6), שׂכל ‘be derived’ (e.g., Gen. 27.45; Mal. 3.11).

[30] Predicative NPs may express depictive properties, e.g., ‘the land is full of loose conduct’, or resultative properties, e.g., ‘he makes the land full of loose conduct’.

[31] In LXX, the property is often in the genitive, e.g., Λάβετέ μοι τέσσαρας ὑδρίας ὕδατος ‘Take me four jars of water’ (1 Kgs 18.34).

(39) וּמָלְאָה הָאָרֶץ זִמָּה׃

‘and the land becomes full of loose conduct.’ (Lev. 19.29)

(40) מִלְאוּ אַרְבָּעָה כַדִּים מַּיִם

‘Fill four jars with water’ (1 Kgs 18.34)

חשׁב ‘account’

חשׁב ‘account’ has a transitivity alternation score of 25% and occurs three times in Lev. 17–26 (exclusively in the *piʿel*); see (41). While the *piʿel* is employed to express the mental activity of calculating, the *qal* has a less technical meaning, e.g., ‘intend/count’ (42). חשׁב D forms neither a morphological factitive nor a resultative. Given the fact that חשׁב D exclusively denotes calculation, we might consider this construction lexicalised for this particular meaning.

(41) וְחִשַּׁב אֶת־שְׁנֵי מִמְכָּרוֹ

‘And he shall count the years since his sale’ [lit. ‘years of his sale’] (Lev. 25.27; cf. 25.50, 52)

do′ (x, [**count′** (x, y)])

(42) וַיַּחְשְׁבֶהָ לּוֹ צְדָקָה׃

‘and he counted it to him as righteousness.’ (Gen. 15.6)

consider′ (x, y)

כלה ‘be complete’

This verb occurs four times in Lev. 17–26 (exclusively in the *piʿel*) and carries the meaning of ‘completing’ an undergoer, that is, completely destroying an undergoer (43) or completely har-

vesting a field (Lev. 19.9). In the *qal*, the verb can be used to denote a water-skin that has been 'finished' or emptied (Gen. 21.15). It also refers to the accomplishment of a task (44). Both the *piʿel* and the *qal* focus on the result of an event, either termination (43) or completion (44), rather than the process. The *piʿel* frequently involves an external causer that brings about the termination or completion of an entity. Therefore, in one of its uses, at least, כלה D may be regarded as a factitive correspondent to the *qal*.

(43) וְלֹא־גְעַלְתִּים לְכַלֹּתָם

'and I will not abhor them to terminate them' (Lev. 26.44)

(44) וּבַשָּׁנָה הָאַחַת עֶשְׂרֵה בְּיֶרַח בּוּל הוּא הַחֹדֶשׁ הַשְּׁמִינִי כָּלָה הַבַּיִת לְכָל־דְּבָרָיו וּלְכָל־מִשְׁפָּטוֹ

'And in the eleventh year, in the month of Bul, which is the eighth month, he completed the house according to all his words and all his judgments' (1 Kgs 6.38)

גלה 'uncover'

Finally, with a transitivity alternation score of 14%, גלה 'uncover' generally has two meanings in the *qal*. Firstly, the verb frequently denotes exile (e.g., 2 Kgs 25.21), an activity. Secondly, the verb often denotes revelation, literally 'open [the ears]', as in (45). These two meanings cannot easily be reconciled, so we should accept two different meanings in the *qal*. In the *piʿel*, the verb is almost exclusively used in the anti-incestual laws of Lev. 18 and 20 as a prohibition against uncovering, or exposing, the

'nakedness' of close relatives (46).[32] In one case, the verb in the *piʿel* denotes revelation (47).

(45) וַיהוָ֔ה גָּלָ֖ה אֶת־אֹ֣זֶן שְׁמוּאֵ֑ל

'And YHWH opened Samuel's ear' (1 Sam. 9.15)

(46) לֹ֥א תְגַלֶּ֖ה עֶרְוָתָ֥הּ׃

'You may not expose her nakedness.' (Lev. 18.7)

(47) וַיְגַ֣ל יְהוָ֔ה אֶת־עֵינֵ֖י בִלְעָ֑ם

'And YHWH opened Balaam's eyes' (Num. 22.31)

As illustrated by the examples, גלה 'uncover' can have a factitive meaning in both the *qal* and the *piʿel*, that is, to cause something to become open, or to expose/uncover something. Although Jenni (1968, 202) argues for a resultative meaning in the *piʿel* versus a process meaning in the *qal*, the examples in (45) and (47) do not support such a strict distinction. In both cases, the event is a causative accomplishment. In sum, גלה D 'uncover' should not be considered a morphological causative.

3.2.3. Summary

In conclusion, three verbs were hypothesised to form morphological causatives in the *piʿel*, due to their alternation ratios of more than 50%. Among these verbs, there was one false positive (לקט 'gather'), because the verb was found to be causative in both the *qal* and the *piʿel*. Nevertheless, all three verbs could be explained along the lines of factivity, that is, a state-of-being

[32] עֶרְוָה 'nakedness' is a euphemism for copulation (Milgrom 2000, 1534).

caused by an external causer. The remaining verbs under consideration were hypothesised not to form morphological causatives in the *piʿel*, because their alternation ratios were lower than 50%. Of the six verbs considered, two were concluded to be false negatives: כלה D 'complete' and מלא D 'fill' were both found to form morphological causatives. The remaining verbs supported the hypothesis that verbs with a low, or negative, transitivity alternation ratio (below 50%) are not likely to form morphological causatives in the *piʿel*.

In sum, there seems to be a correlation between syntactic transitivity alternation and the function of the *piʿel* as a causative morphological derivation of its non-causative *qal* equivalent. Nevertheless, the statistical basis is not strong, so this conclusion would have to be validated on a larger scale.

4.0. Lexical Causatives in Biblical Hebrew

Lexical causatives are inherently causative verbs not morphologically derivable from a non-causative equivalent. For this reason, lexical causatives are also more complicated to identify than morphological causatives, which, as we have seen above, can be predicted to some extent by their transitivity alternation ratio. In RRG, a paraphrasing test is often employed to identify lexical causatives (adapted from Van Valin and LaPolla 1997, 97):

(48) The dog frightens the boy. → The dog causes the boy to be afraid.

Since 'The dog causes the boy to be afraid' is an appropriate paraphrase of 'The dog frightens the boy,' the verb in question

can reasonably be considered a lexical causative. The test is constrained by the requirement that the paraphrase is only allowed to contain as many NPs as the original sentence, in order to rule out false paraphrases, e.g., '*Mary caused herself to run' as a paraphrase of 'Mary ran'. Importantly, what follows from this test is that intransitive verbs are ruled out by default, because causatives require at least two participants. As for the concrete case of Lev. 17–26, of the 181 different verbs, 161 verbs are potentially causative (27 of which form morphological causatives).[33] We can thus exclude 20 verbs.[34] The transitivity constraint is obviously only a partial solution, but it is a valid starting point because it filters out intransitive and, hence, non-causative verbs.

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[33] The transitivity constraint is found by extracting all verbs from the CBH corpus and analysing the syntactic frames in which they occur. If a verb only occurs in intransitive frames (with an explicit or implicit subject), it is considered intransitive. If the verb also occurs in transitive or ditransitive frames, it is considered (di)transitive. Obviously, an otherwise intransitive verb could potentially be transitive if the rest of the Hebrew Bible were included in the analysis. In any case, the transitivity analysis is only hypothetical insofar as we cannot expect all possible verbal patterns to be attested in the corpus. An inherently transitive verb may only occur in intransitive frames in the selected corpus and thereby falsely be considered intransitive.

[34] The excluded intransitive verbs are היה 'be', גור 'dwell', כחשׁ 'grow lean', שׁקר 'do falsely', לין 'spend the night', חרף 'spend autumn', חפשׁ 'be free', סלח 'forgive', נחשׁ 'divine', קוץ 'loath', רמשׂ 'creep', צרע 'have skin-disease', נצה 'fight', פרשׁ 'explain', מוך 'grow poor', מוט 'totter', חוה 'bow down', אבה 'want', כשׁל 'stumble', and מקק 'putrefy'.

While the transitivity constraint limits the number of possible lexical causatives, the paraphrasing test is difficult to apply more concretely to the Biblical Hebrew cases. The corpus does not contain syntactic causatives equivalent to lexical causatives, as could be found in an English corpus, e.g., 'cause to be afraid' equivalent to 'frighten'; see (48). Moreover, it is methodologically flawed to hypothesise paraphrases of Biblical verbs, because the paraphrase would most likely merely reflect verb patterns in the target language (e.g., English) rather than in the source language. The issue is the same as with all other tests for verbal *Aktionsart* (see chapter 4, §3.0). If a given form does not exist in the corpus, how can it be analysed?

The most valid approach is to analyse the parameters actually attested in the corpus. The most important parameters in terms of transitive clauses are the parameters of the participants involved, that is, the actor and the undergoer. In what follows, I shall argue that semantic analysis of the transitive frames provides valid criteria for distinguishing lexical causatives.

5.0. Causation and Semantic Transitivity

A transitive construction is a construction with a verb and two arguments. Semantically speaking, the transitive construction expresses an exchange, or transfer, from an agent to a patient (Hopper and Thompson 1980, 251). The nature of the exchange may be communication ('John spoke to Mary'), translocation ('John moved the wheelbarrow'), or creation ('John wrote a song'), among others. The exchange is not always equally efficient, as may be intuitively sensed from the examples below:

(49) ‘I am YHWH who brought you out of Egypt’ (Lev. 19.36)

(50) ‘You shall love your neighbour as yourself’ (Lev. 19.18)

The exchange in (50) is much less concrete than that in (49), where the semantic undergoer is moved from one location to another. In (50) the undergoer is not moved and hardly knows of the ‘exchange’. Based on this intuitive notion of varying transitive ‘effectiveness’, Hopper and Thompson (1980) presented 10 components that constitute what they call the Transitivity Hypothesis. Each of the components involves different degrees of intensity or effectiveness, as shown in Table 11. The parameters concern both the verb (kinesis, aspect, punctuality, mode) and the participants involved (volitionality, agency, affectedness, individuation), as well as the sentence as a whole (participants, affirmation). A highly transitive sentence has many components of high intensity, while a less transitive sentence has more components of low intensity. Importantly for the present argument, the transitivity hypothesis also relates to causation. As Hopper and Thompson (1980, 264) explain, “causatives are highly Transitive constructions: they must involve at least two participants, one of which is an initiator, and the other of which is totally affected and highly individuated.” Curiously, Hopper and Thompson do not list ‘initiator’ as one of the components of transitivity, but ‘agency’ is probably intended to capture the initiator role: The causer must be high in agency in order to be able to cause the event. The undergoer, on the other hand, is

defined as a participant totally affected and highly individuated.[35]

Table 11: The Hopper-Thompson model of semantic transitivity (adapted from Hopper and Thompson 1980, 252)

	High intensity/ effectiveness	**Low intensity/ effectiveness**
A. Participants	two/more participants	one participant
B. Kinesis	action	non-action
C. Aspect	telic	atelic
D. Punctuality	punctual	non-punctual
E. Volitionality	volitional	non-volitional
F. Affirmation	affirmative	negative
G. Mode	realis	irrealis
H. Agency	agent high in potency	agent low in potency
I. Affectedness of object	totally affected	not affected
J. Individuation of object	highly individuated	non-individuated

Recently, Næss (2007) has readdressed the transitivity hypothesis in her *Prototypical Transitivity*, the result of which is a somewhat simpler model that aims to explain the most fundamental criteria for distinguishing agent and patient. Recall her definition, "A prototypical transitive clause is one where the two participants are maximally semantically distinct in terms of their roles in the event described by the clause" (Næss 2007, 30; see also chapter 4, §2.0). The two maximally distinct participants are the prototypical agent and the prototypical patient, and the distinction can be explained in terms of instigation, volition, and affectedness:

[35] Although Hopper and Thompson (1980, 253) distinguish between affectedness and individuation, in reality the features overlap. According to them, an entity is more completely affected if it is definite, that is, more individuated.

Table 12: The Næss model of semantic transitivity (Næss 2007, 44)

	Agent	Patient
Instigation	+	–
Volition	+	–
Affectedness	–	+

In short, a prototypical transitive sentence is a sentence with an agent who instigates and intends the event without being affected by the event, and a patient which is totally affected by the event. For the sake of simplicity, the parameters are binary (+/–), although Næss (2007, 44) readily admits that the parameters are actually continuous. Positive values therefore refer to high values and negative values to low values. While the majority of Hopper and Thompson's 10 components are left out, some of them are at least implicated by Næss' model. For example, while Næss does not include the kinetic component, her instigation parameter only applies to activities, and kinesis is thus implied. Moreover, when analysing concrete sentences, Næss applies the affirmation criterion, because negation cancels instigation and affectedness, that is, a negated event does not happen, so the actor does not instigate it (despite his/her intention), and the undergoer is not affected. The simplicity of Næss' model, its explanatory power, and the fact that both participants are evaluated according to the same criteria have made it popular. In the study of Biblical Hebrew, the model has been applied by Beckman (2015) in his analysis of the *piʿel* stem (see §3.2).

It is also my contention that semantic transitivity is a valuable framework for scrutinising Biblical Hebrew causatives. Granted, the model does not capture all fine-grained aspects of

causative events. It does, however, serve as a useful starting point for distinguishing causatives and non-causatives, which is the primary aim of this study. In light of Hopper and Thompson's earlier definition of causation, Næss' prototypical transitive construction may correspond well with causation: if one participant instigates the event, and the other participant is totally affected, then the construction may be regarded as a causative construction. This hypothesis will be tested on the H data.

It should be noted, however, that simplicity often comes at the cost of accuracy. This is also the case with Næss' model. For example, although volition is presented as a category relating to both participants, in reality, to evaluate whether a participant is volitional, different aspects of volition (intentionality and benefaction) must be considered. Moreover, the binary values in the model come at the cost of evaluating different degrees of each of the three parameters. In particular, the affectedness parameter is more fine-grained than it appears to be in the model. In what follows, therefore, each parameter will be introduced and evaluated on the basis of the Hebrew data.

5.1. Instigation

The first parameter is 'instigation', which fundamentally concerns the bringing about of an event. In Næss' (2007, 42) terms,

> the property of instigating or causing an event is central to our whole understanding of what an agent is; a simplistic description of a transitive event might refer to it as an act where one participant 'does something to' another.

Instigation implies Hopper and Thompson's (1980, 252) 'kinesis', which is concerned with the distinction between states and

activities. If a situation is stative, there is no exchange between the two participants and, by implication, no instigating actor. The correlation with kinesis is important because it reveals how instigation relates to the semantics of the verb: activities have an instigating actor, while states do not.[36] Instigation is not restricted to animate or human agents. Physical forces also instigate events (Næss 2007, 93). Even physical objects may instigate events if they can be reasonably interpreted as instruments. As an instrument, the physical object plays a dual role in that it causes an event to happen, but only by being manipulated itself by an independent agent. Thus, an instrument is both an instigator and affected by an independent agent.[37] Næss (2007, 97) describes the instrument as having a 'mediating role' in the event, which explains why the instrument can be realised as both actor and undergoer.

In RRG, instigation is captured by **do′**, which distinguishes activities from states. In other words, activities, in contrast to states, have instigating actors. Inherently stative verbs, however, may have their stativity cancelled due to pragmatic implicature (see chapter 4, §3.0). There are 24 such cases in Lev. 17–26, including the famous command in (51), where the stativity of the verb is cancelled due to its occurrence in a prescriptive sentence.

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[36] See also Creason (1995, 134), who seems to capture the parameter of instigation with his notion of volition and claims that "stativity and volitionality are incompatible."

[37] For affectedness, see §5.3.

(51) וְאָהַבְתָּ לְרֵעֲךָ כָּמוֹךָ

‘but you shall love your fellow as yourself’ (Lev. 19.18; cf. 19.34)

(52) וְאִם־בְּאֵלֶּה לֹא תִוָּסְרוּ לִי

‘And if by these things you will not let yourselves be admonished by me’ (Lev. 26.23)

Verbs in the Hebrew passive stems, *nifʿal* and *puʿal*, may sometimes be used as reflexives or reciprocals. Seven such cases were identified, including the one in (52).[38] This particular case is curious, because the agent of admonishment is clearly the oblique object (‘me’, i.e., YHWH). The addressees are urged to let themselves be admonished, although the exhortation is only indirect insofar as it is not phrased as a command but as a warning. Thus, in this particular case, there seems to be a shared responsibility for the admonishment: YHWH is the one who chastises the people, but the people themselves are given the blame for not allowing the admonishment.

Like simple activities, causative events are usually represented with **do′** (x, Ø) in RRG, with reference to an unspecified action causing another event. However, causation may also involve non-instigating actors. In these cases, the event happens because the actor allows it without further participation in the event, or even by accident. As Elke Diedrichsen (2015, 55) explains, non-intervention “may be something that happens by

[38] The remaining reflexive/reciprocal verbs are שבע N ‘swear’ (19.12), ענה Dp ‘be lowly’ (23.29), נצה N ‘fight’ (24.10), גאל N ‘redeem’ (25.49), חוה HsT ‘bow down’ (26.1), and אסף N ‘gather’ (26.25).

not paying enough attention. It may also happen on purpose, in which case there is a component of 'allowing' in the statement, if the causee argument is animate." עזב G 'leave' may be one Hebrew example of purposeful non-intervention:[39]

(53) לֶֽעָנִי֙ וְלַגֵּ֔ר תַּֽעֲזֹ֖ב אֹתָ֑ם

'you shall leave them to the poor and the sojourner.' (Lev. 19.10; 23.22)

[**do'** (x, Ø)] LET [BECOME **have'** (poor and the sojourner, them)]

In (53), the addressees are ordered to leave the harvest for the poor and the sojourner; hence, the leftovers of the harvest are left in the fields on purpose. Diedrichsen (2015, 91), in her treatment of the German causative *lassen*, offers an analysis of the sentence 'Hans ließ mir den Mantel hängen', which is similar to the Hebrew sentence under consideration in that it also includes a benefactor.[40] In her analysis, she marks the agent for control and authority, because the agent has control over the situation and performs it for the benefit of another (Diedrichsen 2015, 93). Therefore, although the presence of an instigating agent is required for 'real' causative events, more subtle causative events are not captured by the ± instigation feature. A

[39] פרע G 'let loose' (21.10) is another example. The priests are commanded not to let their hair hang loose.

[40] The two sentences differ in that the Hebrew example is phrased as a command. It may therefore be construed as an event of enablement rather than simply non-intervention; hence, there is a higher degree of instigation involved.

more fine-grained concept of the involvement of the causer is needed, including features such as control, authority, and order/permission/direct causation, as proposed by Diedrichsen. Talmy's (2000) concept of 'impingement' is also helpful for distinguishing real causative events with direct, physical impingement from indirect causative events with no impingement.

5.2. Volition

Unlike instigation, which is the primary parameter for distinguishing actor and undergoer, volition is applicable to both participants. Volition normally pertains only to human (and divine) beings, because they are the only ones that have the cognitive capacity to will an event to occur. Because Næss uses one label, one might be tempted to treat volition as a uniform parameter. Dixon (2000, 62), however, distinguishes between volition exercised by the actor and volition pertaining to the undergoer. While the latter is called 'volition', the former is called 'intention', emphasising that only actors can intend an activity. Volition is thus multifaceted, and I will therefore discuss it with respect to both actor and undergoer.

An actor is the instigator of an event. If the actor is human or divine, it is capable of volitionality. Physical forces, on the other hand, do not have the capacity to will an event to occur and are not marked for volition. With respect to Talmy's differentiation of causative events, in most cases, a causing actor (human/divine) would also be volitional. Sometimes, however, an actor may accidently instigate the event, perhaps due to clumsiness or neglect; or perhaps the event may happen as an

unexpected side-effect of a previous event. The latter option may capture the meaning of Lev. 18.30:

(54) וְלֹא תִטַּמְּאוּ בָּהֶם

> '[And you shall keep my obligations so that you never do any of those abominable customs that were practised before you], so that you do not make yourselves unclean by them.' (Lev. 18.30)

In (54), causing oneself to be unclean (a reflexive factitive) seems to be an unintentional side-effect of practising those abominable customs enumerated in the chapter. By practising these customs, the actor thus instigates an event of becoming unclean, but probably unintentionally. Thus, while most causative events involve an intentional causer, some do not (see also Diedrichsen 2015, 93).

As for the undergoer, volition concerns involvement. While an undergoer cannot intend an event, it can nevertheless be volitionally involved in the event in various ways. Due to their mental and sensory capacities, human/divine participants are involved in experiencer events (Næss 2007, 41). Thus, a participant may be volitionally involved in an experiencer event, e.g., 'I heard a sound', even though the participant does not intend the event. This distinction is captured in RRG by two different logical structures. The **do′** in (56) marks the event as one of directed, intentional perception, in contrast to the undirected, unintentional event of perception in (55):

(55) **hear′** (x, y)

(56) **do′** (x, [**hear′** (x, (y))])

Undergoers can also be involved in events by filling other semantic roles. Apart from experiencer roles, participants in recipient and beneficiary roles are also involved, hence volitional (Næss 2007, 90–91). Firstly, only participants with a capacity of volition can reasonably be said to possess something, and, by implication, to be recipients. Secondly, beneficiaries are participants who benefit from an event. By implication, only human/divine beings can normally be beneficiaries, because they possess the cognitive capacity to deem an event good or bad. Although an undergoer might have the capacity for volitionality, this capacity is not realised in all cases, as demonstrated in (57).

(57) כִּֽי־אִ֣ישׁ אִ֔ישׁ אֲשֶׁ֥ר יְקַלֵּ֖ל אֶת־אָבִ֑יו וְאֶת־אִמּ֗וֹ מ֚וֹת יוּמָ֔ת

‘Any man who curses his father or mother, he shall surely die’ (Lev. 20.9)

(58) אֲנִ֣י יְהוָ֔ה אֱלֹהֵיכֶ֕ם אֲשֶׁר־הוֹצֵ֥אתִי אֶתְכֶ֖ם מֵאֶ֣רֶץ מִצְרָֽיִם׃

‘I am YHWH your God who brought you out of the land of Egypt.’ (Lev. 19.36)

In (57), a human being is sentenced to death. As Næss (2007, 40) explains, as a human being, the undergoer of the death penalty is capable of being volitional, but during the event, he does not “exercise this volitionality.” Moreover, his role within this event is not dependent on him being volitional. Roughly speaking, the participant would die whether he wills it or not. By contrast, in (58), the undergoer benefits from the event. The given translation, which is preferred by most Bible translations (e.g., New Revised Standard Version, New American Standard Bible, and King James Version), suggests that the undergoers

(the Israelites) are simply carried away from Egypt, whether they like it or not.[41] However, the Israelites have a personal interest in the event and benefit from it. Therefore, since the event has a positive outcome for the Israelites, we can consider them volitional.

In sum, volition is a multifaceted property and involves intention, sentience, recipience, and benefaction. In particular, intention and benefaction involve subjective interpretation of how the event was conceptualised by the author. Moreover, the given examples show that the kind of volition in question is not an inherent property of which human/divine participants are capable, but rather a relational property (see Næss 2007, 40). Accordingly, for each potentially volitional participant, it must be determined manually whether the participant intends the event or benefits from the event.

5.3. Affectedness

Affected participants are participants "that undergo a change in posture, place, shape, state, or existential status" (Frajzyngier and Shay 2016, 144). In Næss' (2007, 42) terms, "a patient is generally defined as the participant which in some way undergoes a change of state as a result of the event." In practice, however, it has proved difficult to differentiate affectedness. John Beavers (2011, 2) makes the criticism that high and low

[41] The verbal event (יצא 'go out') in the *hifʿil* could also be translated 'made/let you go out' to emphasise the role played in the event by the undergoers. The *hifʿil* stem does not by itself entail a specific type of causation.

affectedness, as defined by Hopper and Thompson, "are hard to define precisely, and are usually left to intuition." He offers the following examples to demonstrate the subtle distinctions in affectedness:

(59) John ate the apple up. → Apple is completely gone.

(60) John cut the apple. → Apple cut, not necessarily to a particular degree.

(61) John kicked the apple. → Apple impinged, not necessarily affected.

(62) John touched the apple. → Apple manipulated, not necessarily impinged.

For evaluation of the Hebrew data, four sub-parameters proved to be instructive: 1) material vs immaterial; 2) definite vs indefinite; 3) direction of event; and 4) affected vs effected. These sub-parameters have implications for determining the affectedness of the participants in the sentences below:

(63) וְאֶת־מִצְוֹתַי תִּשְׁמְרוּ

'and [if] you keep my commandments' (Lev. 26.3)

do′ (you, [**observe′** (you, commandments)])

(64) וְאִישׁ אִישׁ מִבֵּית יִשְׂרָאֵל וּמִן־הַגֵּר הַגָּר בְּתוֹכָם אֲשֶׁר יֹאכַל כָּל־דָּם

'And any man from the house of Israel or from the sojourner who sojourns among you who eats any blood' (Lev. 17.10)

[**do′** (man, [**eat′** (man, blood)]) ∧ PROC **consumed′** (blood)]

(65) וְאָכַל֙ אֶת־כָּל־הָעֵ֣ץ הַצֹּמֵ֥חַ לָכֶ֖ם מִן־הַשָּׂדֶֽה׃

‘and they [lit. ‘it’] shall devour all the trees which sprout for you out of the field.’ (Exod. 10.5)

[**do′** (they, [**eat′** (they, trees)]) ∧ PROC **consumed′** (trees)] & INGR **consumed′** (trees)

(66) וְאָפ֥וּ עֶשֶׂר֙ נָשִׁ֔ים לַחְמְכֶ֖ם בְּתַנּ֣וּר אֶחָ֑ד

‘and ten women shall bake your bread in one stove’ (Lev. 26.26)

[**do′** (ten women, [**bake′** (ten women, bread)]) ∧ PROC **create′** (bread)] & INGR **exist′** (bread)

In (63), the undergoer (‘commandments’) is an immaterial, abstract entity and cannot be affected by being observed by a human being. It is therefore appropriate to construe the event as a single activity of performance. In (64), by contrast, the undergoer (‘any blood’) is a physical entity which can be affected. In this case, however, ‘any blood’ is indefinite and non-referential, which means that it is not totally affected (see Pavey 2010, 124–25).[42] The contrast is readily seen in (65), where the un-

[42] For the function of כָּל ‘all/every/any’, see Doron (2020); Naudé (2011). Prototypically, כָּל denotes the entirety of a group, e.g., “all the words of God” (1 Sam. 8.10), which refers to the sum of words revealed to Samuel in vv. 7–9 of that chapter. “All the trees that sprout for you out of the field” (65) is less specific as to the number of trees in question. Nevertheless, the definite article and the object marker make clear that the entirety of the trees is in view. In (64), כָּל does not mean ‘all’ as in ‘all blood’ but ‘any blood’. כָּל receives here a free choice reading because it is satisfied by any member of the group, or

dergoer ('all the trees') is completely consumed. In RRG logical structures, the difference is captured by adding a punctual endpoint to express the accomplishment of the event. If we consider the actors in (64) and (65), they would perhaps intuitively be viewed as prototypical actors that perform an event without being affected themselves. However, while eating, an actor becomes affected insofar as he/she becomes full. Put differently, it is not so much the undergoer that determines the scope of the event, but the actor, who performs the event until he/she is full (see Næss 2007, 56). This interpretation is supported by the observation that the phenomenon in question is grammaticalised in a number of languages. In a cross-linguistic study on passive participles, Martin Haspelmath (1994) showed that both agents and patients of consumption verbs, experience verbs, and verbs of wearing may be grammatically encoded as affected.[43] Evi-

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rather, any drop of blood (Doron 2020; see also Menéndez-Benito 2010).

[43] Haspelmath's study concerns passive participles across languages. According to him, it is widely attested that participles "can be directed toward the patient of transitive verbs or the subject of unaccusative intransitive verbs" (Haspelmath 1994, 157). The semantic constraint for forming a passive participle is whether the participant described by the participle can be characterised by a resultant state of the event. Therefore, the participant in question must necessarily be affected, and this is the reason that only patients are normally described by passive participles. However, a number of languages do have transitive active resultative participles, i.e., participles of active verbs describing the resulting state of the agent presumably affected by the event. These verbs include the Latin *cenatus* 'having eaten' and *potus* 'having drunk' but also the Hindi-Urdu *dekh-naa* 'see', *siikh-naa* 'learn',

dence is also found in Biblical Hebrew, where participles are divided into active and passive participles. The passive participle can be used as either an attributive or an adjective and generally refers to the coming of an entity into a state (Waltke and O'Connor 1990, §37.4). Interestingly, לבשׁ 'wear/clothe' occurs a few times as a passive participle (לָבוּשׁ G or מְלֻבָּשִׁים Dp), always referring to the actors who wear the garments (1 Sam. 17.5; 1 Kgs 22.10; Ezra 3.10; 2 Chr. 5.12; 18.9).[44] Thus, Biblical Hebrew adds support to the notion that people wearing clothes are affected participants. (66) provides an example of a creation verb. Although one might think that the undergoer ('bread') is affected because it comes into existence, Næss (2007, 103–4) argues that, strictly speaking, the undergoer does not undergo a change of status but rather acquires a status. Put differently, there was no bread to be affected prior to the event.[45] Thus, it is important to distinguish between *affected* and *effected* undergoers.

The sentences examined above illustrate the nuances of affectedness. We will now turn to sentences in which the un-

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and *pahan-naa* 'wear'. These grammaticalisations suggest that verbs of consumption, wearing, and experiencing involve affected agents (Haspelmath 1994, 157–61).

[44] See also the discussion in Van Peursen (2004, 208 n. 41).

[45] Levinson (2006, 491) argues that an effected object is a "prototypical patient," in contrast to affected objects, which are much less affected. However, as argued by Hopper (1986, 69), objects resulting from an event "cannot be said to 'undergo' the action of the verb, and therefore cannot be described as Patients." See also Fillmore (2003, 24–25).

dergoer is completely affected, in order to discuss the correlation of affectedness with causation. The sentence in (67) depicts a transfer of land. The actor transfers the land to the undergoer, who comes into possession of that land. The land is itself an undergoer of the event and is completely affected by being transferred from one participant to another. The event is causative because the undergoer ('you') is caused to come into possession of the land. Or, put differently, an external causer is the reason, or cause, for the event to take place. Other BH transfer verbs include שׂים G 'put', ערך G 'arrange', לקח G 'take', מכר G 'sell', קנה G 'buy', and probably נחל HtD 'take possession'.[46] The various verbs of harvest or gathering in Lev. 17–26 could also be construed as transfer verbs, that is, causing oneself to come into possession of the produce. These verbs are בצר G 'gather grapes', עלל D 'deal with'—or rather, 'pick bare'; see Milgrom (2000, 1627)—קצר G 'harvest', and אסף G 'gather'.

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[46] נחל HtD 'take possession' occurs once in H (Lev. 25.46). Milgrom (2000, 2230) quotes Rashi in support of paraphrasing the verse 'Take (them) for yourselves (for the benefit of your children)'. Rashi denies a causative interpretation, because the *hitpaʿel* form is reflexive; hence the sentence could be translated 'You should keep them as an inheritance'. However, it is in fact entirely possible to have a reflexive causative, e.g., קדשׁ HtD 'sanctify yourselves' (Lev. 20.7). Moreover, the words 'take' and 'keep' suggest a causative reading, because the undergoer is either taken from one place to another or prevented from leaving, respectively.

(67) כִּי תָבֹאוּ אֶל־הָאָרֶץ אֲשֶׁר אֲנִי נֹתֵן לָכֶם

‘When you come into the land which I am giving you’ (Lev. 25.2)

[**do′** (I, Ø)] CAUSE [BECOME **have′** (you, land)]

(68) עַם הָאָרֶץ יִרְגְּמֻהוּ בָאֶבֶן׃

‘The people of the land shall stone him with stones.’ (Lev. 20.2)

[**do′** (people, Ø)] CAUSE [[**do′** (stones, Ø)] CAUSE [BECOME **dead′** (him)]]

(69) וְאִישׁ כִּי יַכֶּה כָּל־נֶפֶשׁ אָדָם מוֹת יוּמָת׃

‘Any man, when he strikes any human being, he shall surely die.’ (Lev. 24.17)

[**do′** (he, Ø)] CAUSE [BECOME **dead′** (any human being)]

(70) וְרָדְפוּ מִכֶּם חֲמִשָּׁה מֵאָה

‘And five of you shall pursue a hundred’ (Lev. 26.8)

[**do′** (five of you, Ø)] CAUSE [**do′** (hundred, [**flee′** (hundred)])]

Sentence (68) describes a capital penalty by stoning. In abstract terms, the undergoer (‘him’) is caused to enter the state of death. The stones function as the instrument of the execution and are represented as “manipulated inanimate effector[s]” in the RRG logical structure (Van Valin 2005, 59). Put differently, the instrument is caused to cause an event. Needless to say, the undergoer is completely affected by the event. A number of other verbs similarly denote an event of annihilation, including הרג G ‘kill’ (specifically, intentional killing or murder), שחט G

'slaughter', זבח G 'slaughter', and שׂרף G 'burn'. Another verb, נכה H 'strike', often expresses a fatal blow, as in the *lex talionis* of Lev. 24.15–22 (69). Sometimes, however, the verb seems to express a hit which does not affect the undergoer permanently. In Lev. 26.24, for example, YHWH threatens to strike the Israelites seven times. In this case, the outcome is not death but repeated or increased punishment. The event in (70) is a persecution, which amounts to causation of running away. The undergoer is affected because it is forced to flee.

In other cases, it is not so easy to determine whether the event is causative or not. Consider the following examples:

(71) וּפְאַת זְקָנָם לֹא יְגַלֵּחוּ

'neither shall they shave off the edge of their beard' (Lev. 21.5)

do′ (they, [**shave off′** (they, edge of beard)])

(72) בְּצֶדֶק תִּשְׁפֹּט עֲמִיתֶךָ׃

'With justice you shall judge your fellow.' (Lev. 19.15)

do′ (you, [**judge′** (you, your fellow)])

(73) צַו אֶת־בְּנֵי יִשְׂרָאֵל וְיִקְחוּ אֵלֶיךָ שֶׁמֶן זַיִת זָךְ כָּתִית לַמָּאֹור

'Command the sons of Israel to take to you pure, beaten olives for the lamp' (Lev. 24.2)

[**do′** (you, [**express.**(you)**.to.**(sons of Israel)])] CAUSE [[**do′** (sons of Israel, Ø)] CAUSE [BECOME **have′** (you, oil)]]

There is a group of verbs that look similar to regular extinction verbs. One of these is גלח ‘shave’; see (71).[47] The verb denotes an act of shaving, and one wonders whether the act should be conceptualised as an act of removal or ‘extinction’ of the beard. In that case, the verb would be inherently causative. However, while the object of shaving here is ‘the edges of the beard’, on other occasions the direct object is simply ראש ‘head’ (e.g., Lev. 14.9; Num. 6.9, 18; Deut. 21.12; 2 Sam. 14.26). Therefore, we should not understand the undergoer of the verb as an object to be removed, but simply as the theme of an activity. Accordingly, the RRG representation would be a two-argument performance structure.

Sentence (72) depicts a public, juridical exchange between two participants, rather than a personal estimation or judgement. For that reason, the undergoer must at least be affected due to his experience of the encounter. However, whether the undergoer is affected on a more fundamental level (i.e., whether his social status is permanently changed) is less clear. שפט G ‘judge’ occurs frequently in the HB and is used to denote concrete lawsuits between two parties, as well as referring to the just rule of kings and judges (Liedke 1984). In the particular case of Lev. 19.15, the meaning is a lawsuit. Given the lack of contextual evidence, it is hard to determine whether the undergoer is permanently affected. In cases like this, it is best to con-

[47] Other such verbs include נקף H ‘go around’ (or ‘trim’; see Lev. 19.27), and שחת H ‘destroy’ (Lev. 19.27). Similar considerations pertain to זמר G ‘prune’, which is used in the context of pruning a vineyard, that is, trimming the branches (Lev. 25.3, 4).

strue the event in simplest terms possible. Therefore, it is represented as a two-argument activity.

Finally, speech verbs are not normally causative. Van Valin and La Polla (1997, 118) describe 'tell' as a causative of becoming aware. צוה D 'command' is probably also causative, as illustrated in (73). Firstly, the addressees of the command are not marked as an oblique object, as for regular speech verbs, but with an object marker. Secondly, the speech event forces or persuades the Israelites to bring olive oil.[48] Therefore, the entire event is given as a double causative structure: a command causing the Israelites to cause Moses to come into possession of olive oil.[49]

5.4. Summary and Discussion

The annotation of participants with Næss' three semantic parameters—instigation, volition, and affectedness—has led to a discussion of the compositionality of each parameter. A summary of the discussion and its implications for annotation and conceptualisation of causation is given in Table 13 below. In theory, Næss' concept of semantic transitivity is compelling, because it treats actors and undergoers of transitive events according to the same criteria. In practice, however, neither volition nor affectedness is self-evident. In particular, volition refers to

[48] Petersson (2017) argues that the speech event in Lev. 24.2 is an indirect command that involves an element of causation, because the agent is seeking to manipulate an addressee to perform an event.

[49] Another example with a causative צוה D 'command' is found in Lev. 25.21: "and I will command my blessings to you in the sixth year."

rather different notions with respect to actor and undergoer. The decisive criteria of volition are intention with regard to the actor and involvedness with regard to the undergoer. Moreover, affectedness is a complex feature involving the definiteness and inherent properties of the undergoer (material vs immaterial), in addition to considerations pertaining to whether the undergoer is indeed *affected* or merely *effected*, and whether the actor is also affected (direction).

With regard to *Aktionsart* and semantic roles, instigation applies only to the actor role. Affectedness prototypically applies to the undergoer of events, but also relates to specific situations where the actor is affected by the event, e.g., events of eating, drinking, and wearing. Finally, volition, due to its compositionality, pertains to both actor and undergoer insofar as the respective participant is human/divine.

Table 13: Summary table of Næss' (2007) semantic parameters of transitivity, including their alleged components and their correlations with semantic roles and causation

	Components	**Correlations with semantic roles**	**Correlations with causation**
Instigation	± impingement ± authority	actor	real causation [+ impingement, ± authority] indirect causation [± control, ± authority]
Volition	± intention ± involvedness	actor, undergoer	intended causation [+ intention, ± involvedness] permission [+ intention, + involvedness] neglection [– intention, ± involvedness]
Affectedness	± material ± definite ± effected direction	undergoer, actor	real causation [+ material, ± definite, – effected, directed]

With regard to the correlation of causation with semantic transitivity, Hopper and Thompson's (1980, 264) simple definition must be reconsidered. For convenience, their definition is repeated here:

> [C]ausatives are highly Transitive constructions: they must involve at least two participants, one of which is an initiator, and the other of which is totally affected and highly individuated.

To begin with, the discussion so far has revealed that the definition accounts well for 'real', or physical, causatives, that is, direct causation of a concrete, material undergoer by an impinging causer. In this case, the undergoer can rightly be considered completely affected, and the causer initiates the event (regardless of intentionality). However, as Talmy (2000) has demonstrated, causation is a much broader concept and involves persuasion, coercion, permission, neglection, and hindrance, besides direct causation. These derived causative events are not captured simply by considering the semantic transitivity parameters offered by Næss or Hopper and Thompson. Rather, the defining criterion of a causative event must be whether the event can logically be thought of as two individual events connected by a causative operator (see Shibatani 1976b, 1). The logical decomposition of verbal aspect offered by RRG is therefore a fruitful framework for analysing Biblical Hebrew verbs. We may not be able to avoid the RRG paraphrasing test for causation completely, since causation is a logical relation and, in the case of lexical causatives, is not realised morphologically or syntactically. Nevertheless, by annotating the semantic parameters of the participants using Næss' parameters (with modifications),

we have independent criteria for investigating the roles of the participants in any given event. As shown, by combining RRG logical structures with semantic parameters, the decomposition of BH verbs can be carried out on a more informed basis.

6.0. Agency and a Hierarchy of Semantic Roles

We are now in a position to return to the overall purpose of decomposing Hebrew verbs, namely, to be able to compute a measure of agency for the sake of a social network analysis of the Holiness Code. It was argued in chapter 4 that dynamicity and causation were the two features contributing most significantly to agency, and the long detour around dynamicity (chapter 5) and causation was crucial in order to detect morphological and syntactic parameters correlating with agency. Given that agency is a multifaceted feature, a verbal complement can exhibit it to a lesser or greater degree. This is especially apparent for causation in light of Næss' three parameters (instigation, volition, and affectedness) because, for example, a participant may be instigating an event volitionally or involuntarily, the latter event naturally being less agentive. In other words, participants can be differentiated semantically by discerning the level of agency invested in an event. This will prove particularly important in chapter 7, where agency will be considered one of several parameters on the basis of which the social roles of the participants in Lev. 17–26 may be differentiated. In order to differentiate the participants according to agency, we first need to establish a hierarchy of semantic roles with corresponding agency scores. Accordingly, the insights gained in chapters 4–6,

in particular Næss' (2007) semantic features, will be combined in order to establish a hierarchy of semantic roles according to the degree of agency associated with each role.

In the history of linguistic research, a variety of hierarchies of semantic roles have been proposed. Traditionally, the hierarchies were created for the sake of argument selection. That is, the critical question was how the semantic roles relate to grammatical relations. Charles J. Fillmore (1968; 2003), with his concept of deep cases, explained how the deep semantic structure of propositions is decisive for selecting the surface structure cases of NPs. In fact, he offered a simple hierarchy of semantic roles to explain the selection of subject in unmarked sentences (Fillmore 2003, 55):

> If there is an A[gentive], it becomes the subject; otherwise, if there is an I[nstrumental], it becomes the subject; otherwise, the subject is the O[bjective].

In other words, the case roles Agentive, Instrumental, and Objective form a hierarchy by which case roles can be linked with grammatical relations. Later, Ray Jackendoff (1990) offered a more elaborate hierarchy of semantic roles: Actor > Patient /Beneficiary > Theme > Location/Source/Goal. Dowty (1991) proposed yet another hierarchy based on his proto-role distinction: Agent > Instrument, Experiencer > Patient > Source, Goal (usually). In fact, one of the criticisms levelled against thematic-role approaches to argument selection concerns the differing hierarchies (see Croft 2012, 181). RRG also offers a hierarchy of thematic relations based on their positions in the logical structure representations of the verbs (see chapter 4,

§4.0). The hierarchy is used to determine the macroroles of a proposition, actor, and undergoer. The RRG hierarchy of thematic relations, however, is not relevant for this study, because I am not only interested in thematic relations but also in semantic roles beyond the thematic relations. The hierarchy I shall propose shortly depends on both thematic relations and the semantic parameters of the arguments (see Næss 2007). Accordingly, in the context of the present study, a hierarchy of semantic roles serves two purposes. Firstly, as in traditional approaches, the hierarchy is the basis for determining the actor and undergoer of a proposition. Secondly, since the hierarchy correlates with a measure of agency associated with each semantic role, it allows for the quantification of events involving two interacting participants, by means of the positions of the participants in the hierarchy.

Adopting the semantic features proposed by Næss (2007), I suggest a hierarchy of semantic roles based on instigation, volition, and affectedness. Within Næss' framework, Agent and Patient are the two most distinguished participants. Consequently, they represent the two extremes of a scale of agency. The defining features of an Agent are instigation and volition, while the Patient is prototypically characterised by affectedness. Thus, if the eight semantic roles proposed by Næss are sorted according to these parameters, a hierarchy is established (Table 14).

Table 14: A hierarchy of semantic roles and their corresponding agency scores

Role	Parameters	Score	Examples
Agent	+VOL +INST –AFF	5	I am YHWH your God who brought you out of the land of Egypt (Lev. 19.36)
Force	–VOL +INST –AFF	4	The land vomited out its inhabitants (Lev. 18.25)
Affected Agent	+VOL +INST +AFF	3	Anyone of the house of Israel or of the sojourners sojourning among them who eats any blood (Lev. 17.12) You shall love your neighbour as yourself (Lev. 19.18)
Instrument	–VOL +INST +AFF	2	I will bring terror upon you, disease and fever, which destroy the eyes… (Lev. 26.16)
Frustrative	+VOL –INST –AFF	1	You may not let some of it remain until morning (Lev. 22.30)
Neutral	–VOL –INST –AFF	0	You shall love your neighbour as yourself (Lev. 19.18)
Volitional Undergoer	+VOL –INST +AFF	-1	I am YHWH your God who brought you out of the land of Egypt (Lev. 19.36) A man who takes his sister as wife and sees her nakedness… (Lev. 20.17)
Patient	–VOL –INST +AFF	-2	The people of the land shall stone him with stones (Lev. 20.2)

At the top of the scale is the prototypical agent role, followed by non-volitional Force. Force represents natural, physical forces such as lightning. Curiously, in H, אֶרֶץ ‘land’ is sometimes presented as a force that can vomit out its inhabitants (e.g., Lev. 18.25).[50]

[50] The role of the land can also be interpreted differently. It can be construed as a personified participant having its own will (Agent) or

Further, an Affected Agent is a volitional agent that is affected by the event (e.g., consumption events). Since an Affected Agent is volitional, it is ranked higher than an Instrument, which is also affected but not volitional.

The last four roles are non-instigating. These include the Frustrative, which expresses the denial or hindrance of an event willed by a participant.[51] This role applies well to the many prohibitions given in the law texts of Leviticus. The Neutral exhibits none of the agency parameters and includes the traditional semantic roles: source, goal, location, and manner. Since this role is neutral, it is given the agency score 0, from which the agency scores of the other roles are derived.

The Volitional Undergoer is a sentient and/or beneficiary participant, and the role thus subsumes the experiencer, recipient, and beneficiary roles. The example of 'seeing' from Lev. 20.17 (see Table 14) illustrates an interesting implication of the hierarchy. A man who sees his sister's 'nakedness' (euphemism for copulation) is a Volitional Undergoer insofar as he perceives his sister's nakedness. There is no hint in the text that he intentionally observes her but, rather, that the uncovering and perception of her nakedness is the effect of marrying her. The 'nakedness', on the other hand, is the object perceived and is therefore semantically neutral. It is neither instigating nor volitional

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as an instrument executing the will of YHWH (Instrument). Since these two interpretations are not supported directly by the text, the Force role appears to be the most convincing.

[51] The Frustrative is typically derived from other roles by the presence of a negative clause operator (see Næss 2007, 116–17).

and presumably remains unaffected during the event. This interpretation has important ramifications for the attribution of actor and undergoer in the sentence. As explained, the hierarchy of semantic roles allows for deciding which participant is the actor and which is the undergoer. The most agentive participant is the actor, while the least agentive is the undergoer. In the present case, 'nakedness' is rated higher than 'man' because Neutral arguments rank higher than Volitional Undergoers; hence, 'nakedness' is the actor of the event, while 'man' is the undergoer. This might seem odd, since one would expect a human being who sees an object to be more agentive than the object seen. Strictly speaking, however, the event does not originate from the experiencer but from the object that stimulates the observation. Understood this way, the object perceived is construed as the actor and the Volitional Undergoer as the undergoer of the event.

Finally, the prototypical Patient concludes the list of roles. This role is the least agentive of all roles and refers to participants who are totally and non-volitionally affected by the event.

The agency hierarchy allows us to explore the distribution of semantic roles, agency, and participants in Lev. 17–26. As an example, all human/divine participants that occur at least 20 times in Lev. 17–26 have been cross-tabulated with their roles (Table 15). Given the agency scores, the mean agency for each participant can be calculated. Interestingly, the two main speakers of the speeches comprising the text, Moses and YHWH, are the two participants with the highest mean agency scores. By contrast, Aaron, the sons of Aaron, and the brother have

much smaller agency means, a fact indicating that these participants obtain less agentive roles in the events in which they partake. Finally, the Israelites and the 2MSg ('you'), which refer respectively to the entire community of the Israelites and to its individual members, are frequently attested in the Frustrative role. This is to be expected, since the frequent prohibitions in the text are primarily directed to the Israelites, either as a group or as individuals.

Although the distribution of semantic roles is suggestive of a *social* hierarchy, the semantic roles do not by themselves establish this hierarchy. Even if YHWH is agent-like, the frequencies of semantic roles do not inform us about the situations in which he is agentive and with respect to whom. To explore how the participants relate to one another, we need to analyse the semantic roles within a framework of actual social exchange among concrete participants. This framework is called social network analysis and will be the topic of the next chapter. In that chapter, the hierarchy of semantic roles and the corresponding agency scores will serve as the means by which the interactions among the participants of the social network are quantified.

Table 15: Semantic roles and mean agency scores obtained by the most common participants in Lev. 17–26

	Agent	Force	Affected Agent	Frustrative	Neutral	Volitional Undergoer	Patient	Mean Agency
Moses	36	0	1	0	1	19	0	2.877
YHWH	118	0	1	8	29	30	17	2.645
an Israelite	60	0	22	7	4	6	38	2.182
2MSg ('you')	21	0	10	57	8	8	2	1.698
Israelites	99	0	44	72	28	83	31	1.569
sojourner	45	0	16	5	13	9	38	1.532
Aaron's sons	16	0	6	22	5	17	5	1.310
Aaron	16	0	11	31	1	19	10	1.193
brother	11	0	3	1	16	10	13	0.611
remnants	3	2	4	0	2	5	13	0.138
foreign nations	3	0	1	0	5	3	10	-0.227