Toward the Meaning of the Biblical Hebrew Piel Stem

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Toward the Meaning of the Biblical Hebrew Piel Stem

A dissertation presented

by

John Charles Beckman

to

The Department of Near Eastern Languages and Civilizations

in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy
in the subject of
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The biblical Hebrew D stem (piel) seems to be inconsistent from verb to verb, both in its meaning and in its relationship to the G stem (qal). For example, the D stem has a higher valency than the G stem for some verbs (e.g., קדשׁ G ‘to be holy’, D ‘to make holy’), whereas for other verbs, the G and D stems seem to be interchangeable (e.g., שֹׁבֵר 1 can be glossed ‘to break’ in both the G and D stems).

The dominant explanation for this is by Waltke and O’Connor (1990), who draw upon earlier work by Jenni (1968) and Goetze (1942). They posit that the D stem is factitive/resultative, meaning that it describes the subject causing a passive undersubject to enter a state without describing the process. Thus שֹׁבֵר, which means ‘to break’ (process) in the G stem, means ‘to make broken’ (resultative) in the D stem. By developing criteria to detect this distinction and by examining every occurrence of every verb in the Hebrew Bible, we found that the D stem has a process meaning far more often than a resultative meaning, contrary to Waltke and O’Connor’s hypothesis. Furthermore, their hypothesis cannot explain verbs that lack a direct object in the D stem.

As an alternate explanation, Kouwenberg (1997, 2010) argued that the D stem originally expressed verbal intensity but then developed a variety of meanings, including verbal plurality and high semantic transitivity. In addition to having cross-linguistic support, this hypothesis also passed all three tests that we devised regarding its use in the Hebrew Bible: (1) The D stem adds
an agent only to verbs that have low semantic transitivity in the G stem. (2) For verbs with roughly the same meaning in the D and G stems, the D stem is more likely in contexts that have high verbal plurality or (3) high semantic transitivity. Nevertheless, the difference in likelihood is often slight. Furthermore, the flexibility of Kouwenberg’s explanation makes it difficult to falsify, even in theory. Therefore, the level of support for Kouwenberg’s hypothesis is modest.
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J.S. Bach inscribed J.J. at the beginning of his manuscripts and S.D.G. at the end. After years of crying out Jesu juva, it is a delight to give thanks to the One who makes the Hebrew language worth studying – Soli Deo gloria.
Glossary, Abbreviations, and Symbols

* a theoretical, earlier form

3ה verb a verbal root that adds a vowel letter with ה (such as Qamets He) at the end of most forms that lack a sufformative or pronominal suffix. Therefore they are commonly described as if they have ה as R3, even though the ה is actually a vowel letter, not a consonant. These verbs are not to be confused with verbs that have a consonantal ה as R3, such as גבה and תמה, which never occur in the D stem in biblical Hebrew. At an earlier stage in the language, 3ה verbs had Yod or Waw as R3.

Agent the animate participant who acts deliberately to initiate the event, and thus bears the responsibility for it. If an inanimate thing is portrayed as if it were animate and acting deliberately, it is an agent, albeit a non-prototypical one. See §2.2.3.

Agentive verb refers to an event that requires an agent or experiencer as the subject (e.g., ‘he walked’, ‘she ate’). If a verb is ever used with a fientive meaning, the verb is classified as agentive because the subject would by definition have the grammatical role agent or experiencer. When analyzing our data, however, this procedure requires us to hold open the possibility that some truly patientive verbs would be misclassified as agentive because our source happens not to contain an example with a stative meaning (and hence a patient subject). See agentivity and §2.3.1.

Agentivity is whether a verb is agentive or patientive. See §2.3.1.

BH biblical Hebrew

Causative a particular type of verbal meaning that typically describes the causing of an action (e.g., ‘to cause to walk’). Causative verbal meanings are most common in the H stem. The precise definition of causative depends on the author. Waltke and O’Connor (1990, 434–5) define it as the subject causing an undersubject actively to perform an action. Kouwenberg (1997, 242–4) defines it as the addition of an agent to a verbal meaning that already requires an agent or experiencer.
Consecutive preterite

A particular verb form that always has the prefix of the prefix conjugation and also a waw. It is commonly called the imperfect waw consecutive or the converted imperfect or the wayyiqtol.

D stem

The pi‘el stem of biblical Hebrew and the corresponding stems in other Semitic languages, including stem II in Arabic, the D stem in Akkadian, and the pa‘el stem in Aramaic (including Syriac). This dissertation does not consider biblical Hebrew stems such as the po‘el, polel, and pilpel to be part of the D stem. It also never considers verbs with four root consonants (quadriliteral verbs) to be in the D stem.

Experiencer

The conscious, animate participant in the event who is not the deliberate initiator of the event but whose nervous system is relevant to the predicate. See §2.2.3.

Factitive

A specific type of verbal meaning that typically describes the imposition of a state (e.g., ‘to cause to be holy’). Factitive meanings are most common in the D stem. The precise definition of factitive depends on the author. Waltke and O’Connor (1990, 434–5) define it as the subject causing an undersubject to enter passively into the state that is described by the corresponding G-stem stative verb, without respect to the process by which that happens. Thus by their definition, for a verb to have a factitive meaning, it must have a stative meaning in the G stem (§4.1). Kouwenberg (1997, 242–4) defines it as a verbal meaning with an agent for a verb that can have the corresponding meaning without an agent. For example, the English verb ‘break’ can be used with an agent (‘she broke the stick’) or without an agent (‘the stick broke’); the meaning with the agent is factitive (§2.3.1).

Factitive/Resultative

Is the meaning of the D stem in Waltke and O’Connor’s system (and in Jenni’s as well). In that system, D-stem verbs have either a factitive meaning or a resultative meaning. The compound term is used because factitive and resultative meanings are identical in that system; the difference between them is the meaning of the G stem, not the meaning of the D stem. Factitive verbs have a stative G stem. Resultative verbs have a fientive G stem. So the different names indicate different G-stem meanings, not different D-stem meanings.
**Fientive stem vowel**
A stem vowel is fientive if it is Holem, Qamets Hatuf, Tsere, or Seghol in any form of the G-stem Prefix Conjugation (e.g., יֵשָׁר, יֵשָׁרֶה, יֵשָׁרָה, or יֵשָׁרָה) as long as the Prefix Conjugation preformative vowel is not Holem (e.g., יָשָׁר). Those same stem vowels in the G-stem Imperative also mark a verb as fientive (e.g., יָשָׁר), regardless of the Prefix Conjugation preformative vowel. See §2.3.2.

Be aware that although fientive verbs normally have a Pathach in the G-stem Suffix Conjugation, this does not mark a verb as fientive because there is also a class of stative verbs that have a Pathach in the G-stem Suffix Conjugation. For example, the verb יָסָד has a stative stem-vowel pattern because its G-stem Prefix Conjugation stem vowel is Pathach (e.g., יָסָד), but it has stem vowel Pathach in the G-stem Suffix Conjugation (e.g., יָסָד). Furthermore, verbs that are marked as stative with a Tsere stem vowel in the G-stem Suffix Conjugation third person typically switch to Pathach in the first and second person due to the sound change known as Philippi’s Law (Blau 2010, 220).

**Fientive verb**
refers to an activity (e.g., ‘to run’, ‘to build’). Each meaning of a verb can be classified as either fientive or stative. See §2.3.2.

**GD-similar root**
a verbal root that has approximately the same meaning in the G and D stems in our sample (e.g., יָסָד). The 138 GD-similar roots in our source are listed in §5.1.

**Geminate verb**
a verb that has identical second and third root consonants (e.g., יָלְל)

**Gemination**
the repetition of a consonant. More precisely, the consonants must be in separate syllables yet without an intervening vowel or morpheme boundary. Technical discussions of gemination are given in (Catford 2002, 106-8, 210; Catford 1977, 210; Kouwenberg 1997, 3n1). Gemination of the second root consonant is the primary morphological feature of the D, Dp, and tD stems.

**Guttural**
the consonants י נ ז א

**HALOT**
The Hebrew and Aramaic Lexicon of the Old Testament (Koehler et al. 2000)
**High transitivity** is shorthand for ‘high semantic transitivity’ (§2.2). A particular occurrence of a verb is labeled as having high transitivity if it meets all the criteria for prototypical high semantic transitivity. Different scholars propose different sets of such criteria, as described in §2.2. Our data collection uses the criteria by Næss (2007), as described in §2.2.5.

**Hollow verb** is a verb that has a vowel letter in place of the second root consonant (e.g., בִּין, בּוֹא, קוּם). That vowel letter is considered to be $R_2$. Hollow verbs rarely occur in the D stem in biblical Hebrew; they normally occur in the polel stem instead.

**Homonym number** is used in conjunction with the root consonants to uniquely identify a verbal root (e.g., the ‘1’ in שָׁבָר). The homonym numbers used are those listed in our source. They match the homonyms listed in HALOT except when HALOT numbers (and our source ignores) homonyms that have been proposed by scholars but do not occur in our source.

**Imperfect verb** is a particular verb form that always has a prefix. It is also called the prefix conjugation or the yiqtol.

**Intransitive** is shorthand for ‘syntactically intransitive’. A particular occurrence of a verb is labeled intransitive if it has no direct object. See §2.1 for further discussion.

**Kinesis** refers to whether a verbal meaning is fientive or stative. See §2.3.2.

**Leningrad Codex** is the oldest complete manuscript of the Hebrew Bible. It is the standard manuscript used in biblical studies. An electronic version of it is used as our source. See §3.1.

**Low transitivity** is shorthand for ‘low semantic transitivity’ (§2.2). A particular occurrence of a verb is labeled as having low transitivity if it meets few of the criteria for prototypical high semantic transitivity. Different scholars propose different sets of such criteria, as described in §2.2. Our data collection uses the criteria by Næss (2007), as described in §2.2.5.

**Passive undersubject** in Waltke and O’Connor’s system, a passive undersubject implies a factitive/resultative meaning, and vise-versa.
| **Patient** | the participant that registers a change-of-state as a result of an event (*patient of change*) or is in a state (*patient of state*). See §2.2.3. |
| **Patientive verb** | refers to an event that can occur without an agent (e.g., ‘the glass broke’). Since we lack native speakers of biblical Hebrew to judge the acceptability of a *patient* as the subject, this study classifies a verb as patientive if the verb is ever used in our source with a stative meaning (and thus its subject has the grammatical role *patient*). See *agentivity* and §2.3.1. |
| **Perfect verb** | a particular verb form that always has a suffix (except for the third person, masculine, singular). It is also called the *suffix conjugation* or the *qatal*. |
| **Prefix conjugation** | a particular verb form that always has a prefix. It is commonly called the *imperfect conjugation* or the *yiqtol*. |
| **Quadriliteral verb** | a verb with four root consonants, such as הָרָסִים in Psalm 80:14. Such verbs cannot occur in the D stem as defined in this study. |
| **R_1** | the first root consonant of a verb |
| **R_2** | the second root consonant of a verb |
| **R_3** | the third root consonant of a verb |
| **Resultative** | a type of verbal meaning that is used in Waltke and O’Connor’s system (and hence in Jenni’s as well). A resultative verb states that the subject causes the undersubject to enter in the state that is the end result of the action of the G-stem verb, without respect to the process by which that happens. See *factive* and *factive/resultative*. |
| **Root** | the set of three consonants (or two consonants and a vowel letter) that is the basis for each verb form. Homonyms are considered to be separate roots, so a homonym number is part of the root when needed (e.g., וְהָרָס). See *root consonant*. |
| **Root consonant** | a Hebrew consonant that forms part of the basis for a Hebrew verb. Most biblical Hebrew verbs have three root consonants, so they are labeled R_1, R_2 and R_3. |
Sample

for a few frequently occurring verbs in our source (see separate entry, below), instead of collecting data on every occurrence, we collect data on a subset of the occurrences, as described in §3.2. Thus our sample is the subset of our source that is used in our data collection, although for almost all verbs our source and our sample are synonymous.

Shortened

refers to certain changes in the morphology of a verb relative to the standard prefix conjugation form. In all cases, to be able to shorten, a verb must be in the prefix conjugation or consecutive preterite conjugation. An H-stem verb is shortened if V₃ is Tsere instead of Hireq-Yod (e.g., יִכְבַּד instead of יִכְבֵּד). A 3ni verb is shortened if it has no sufformative, no pronominal suffix, and the form ends with R₃ (e.g., יִכְבַּד instead of יִכְבֵּד). A biconsonantal verb is shortened if its G-stem V₃ is Hatuf instead of Shureq (e.g., יִכְבַּד instead of יִכְבֵּד), or Tsere or Seghol instead of Hireq-Yod (e.g., יִכְבַּד instead of יִכְבֵּד). A 18 verb is shortened if its G-stem V₃ is Seghol instead of Pathach (e.g., יִכְבַּד instead of יִכְבֵּד).

Source

The database referred to as 'our source' in this study is the 2010 Groves-Wheeler Westminster Morphology and Lemma Database, release 4.14, which contains the entire Leningrad Codex. See §3.0.1. See also sample.

Stative stem vowel

A stem vowel is stative if it is Tsere, Hireq, or Holem in any form of the G-stem Suffix Conjugation (e.g., יִכְבַּד, יִכְבָּד, or יִכְבֵּד). It is also stative if it is Pathach or Qamets in any form of the G-stem Prefix Conjugation (e.g., יִכְבַּד or יִכְבָּד) or Imperative, provided that the first root consonant is not Yod or Nun (e.g., יִכְבַּד or יִכְבָּד, but יִכְבָּד from יִכְבָּד and יִכְבָּד from יִכְבָּד), the second and third root consonants are not guttural (e.g., יִכְבָּד and יִכְבָּד), and the preformative vowel is not Holem (e.g., יִכְבָּד). For further discussion of stative and fientive stem vowels see (Blau 2010, 220-4; Joöion and Muraoka 2006, 116-20; Waltke and O'Connor 1990, 367-71; Bergsträsser 1929, 2:74-6; Blake 1903; Lambdin and Huehnergard 2000, 56). See §2.3.2.

Stative verb

describes a characteristic, quality, circumstance, or state of the subject. Each meaning of a verb can be classified as either fientive or stative. The subject of a stative verb is a patient. See §2.3.2.
Stem vowel

the vowel in front of the third root consonant. Thus it is the vowel after the second root consonant, except that it is the vowel after the first root consonant for hollow verbs and for geminate verbs that have assimilated the second root consonant to the third root consonant. 3ה verbs (e.g., בָּנָה) do not have a third root consonant, so they do not have a stem vowel. The stem vowel is also called the theme vowel.

Substantival participle

A participle is substantival if it is being used as a noun. In Hebrew, substantival participles typically refer to the one who does the action of the verb. For example, when the participle of רָפָא ‘to heal’ is used as noun, it typically refers to a physician.

Suffix conjugation

a particular verb form that always has a suffix (except for the third person, masculine, singular). It is commonly called the perfect conjugation or the qatal.

Transitive

is shorthand for ‘syntactically transitive’. A particular occurrence of a verb is labeled transitive if it has a direct object. See §2.1 for more details.

Undersubject

the secondary subject with a verb of causation; the subject of the verb causes the undersubject (a direct object) to be or do something. According to Waltke and O’Connor (1990, 355–8), the subject causes the undersubject to enter a state (be something) in the D stem, or to perform an action (do something) in the H stem. Thus the undersubject is a patient of change in the D stem, and is an agent in the H stem. See §4.1.

Verbal root

see root

V_s

the stem vowel
Chapter 1. Introduction

1.1 The Problem

As is typical of Semitic languages, verbs in biblical Hebrew can be inflected in a variety of morphologically marked forms called stems, themes, or בִּנְיָנִים (binyanim). These stems affect the meanings of most verbs as described in table 1.

<table>
<thead>
<tr>
<th></th>
<th>Simple (Disputed)</th>
<th>Causative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active voice</strong></td>
<td>qal (G)</td>
<td>piʿʿel (D)</td>
</tr>
<tr>
<td><strong>Passive voice</strong></td>
<td>nifʿal (N)</td>
<td>puʿʿal (Dp)</td>
</tr>
<tr>
<td><strong>Middle/Reflexive voice</strong></td>
<td>nifʿal (N)</td>
<td>hithpaʿʿel (tD)</td>
</tr>
</tbody>
</table>

The meaning of the middle column is disputed because it is difficult to find a common denominator for the wide variety of meanings of verbs in the D stem.¹ For example, one of the standard reference grammars of biblical Hebrew declines to explain what the D stem means because “in the present state of our knowledge, we can only point to a number of fairly distinct meaning categories into which some [D-stem] verbs seem to fit. Others, an uncomfortably large number, still defy such categorization. Nor can we suggest, without doing violence to all the evidence available, a single notion or meaning category which can be said to underlie all those ‘nuances’” (Joüon and Muraoka 2006, 143–4). That grammar’s (explicitly non-comprehensive) list of meaning categories for the D stem consists of factitive (קדשׁ ‘to make holy’), declarative-estimative (נקה ‘to declare innocent’), pluralizing (multiple subjects שאל ‘to ask’; multiple

¹. Discussion focuses on the D stem because it is far more common than the Dp and tD stems (6490, 417, and 842 occurrences in the Bible, respectively), and because, for most verbs, the meanings of the Dp and tD stems are derivable from the meaning of the D or the G.
objects שלח ‘to dispatch numerous persons’), frequentative (צחק ‘to mock’), denominal-productive (דבר ‘to speak’), denominal-privative (שﴍ ‘to uproot’), and adverbial (מזר ‘to act quickly’) (Joüon and Muraoka 2006, 144–5). Other grammars include categories such as qualitative intensity (דבר ‘to break entirely’), simple action (זבח ‘to sacrifice’), resultative (חלק ‘to accomplish division’), causative (שמע ‘to cause to hear’), metaphorical (זרה ‘to winnow’), and indirect action (שﴍ ‘to break by means of something or someone’) (Blau 2010, 229; Blau 1976, 52; Gesenius et al. 1910, 141; Waltke and O’Connor 1990, 396-417).

This variety of D-stem meanings also makes it difficult to characterize the relationship of the D stem to other stems. In the words of Uzzi Ornan, “It is impossible to know whether the change from פָּעַל [G stem] to פִּעֵל [D stem] will entail strengthening, lengthening, repetition, causation, or some other meaning, which might be completely different from that of פָּעַל [G stem]” (2007, 589). Particularly troubling is the fact that shifting from the G stem to the D stem increases the valency of some verbs (e.g., קדש G ‘to be holy’, D ‘to make holy’), whereas for other verbs, the D stem not only has the same valency as the G stem, it actually seems to be interchangeable with it. For example, Deuteronomy 32:43 and 2 Kings 9:7 both use the verb נאם to speak of YHWH avenging the blood of his servants, but נאם is in the G stem in the former text and in the D stem in the latter (Waltke and O’Connor 1990, 359).  

Various scholars have claimed that the same problems occur with the corresponding stems in Akkadian (Kouwenberg 1997), Arabic (Lentin 1991), modern Hebrew (Coffin and Bolozky 2005, 89), Syriac (Fassberg 1999), and “in all other cognate Semitic languages,

2. This apparent interchangeability is also evident between the D and H stems for several verbs (e.g., תשׁחת D and H ‘to wipe out’; cf. Rubinstein 1979, 64-8; Joüon and Muraoka 2006, 144).
including modern living languages” (Joüon and Muraoka 2006, 140; cf. Kouwenberg 1997, 4–6; Brockelmann 1908, 508).

Although multiple scholars have attempted to explain how the D stem came to have such a variety of meanings, there is no consensus.

1.2 Prior Work on the Semitic D Stem

1.2.1 Synchronic Approaches – Intensive/Pluralic

The first scholar to attempt to unify the various meanings of the biblical Hebrew D stem may have been Gesenius (1786–1842), who wrote that “the fundamental idea of Pi‘éél [the D stem], to which all the various shades of meaning in this conjugation may be referred, is to busy oneself eagerly with the action indicated by the [verbal root]” (1910, 141). According to Gesenius’ analysis, this can be expressed as strengthening (intensive) or repeating (iterative) an action, as causing others to do an action (causative), as declaring someone to be something (declarative), or as forming, using, or removing the noun from which the verb was formed (denominal). Similar approaches were taken by Porges for Arabic (1875, 45), by Delitzsch (1906, 235) and Ungnad (1926, 39) for Akkadian, and by Brockelmann (1908, 508) for Semitic languages in general.

Weingreen (1983) developed Gesenius’ description of the D stem by distinguishing verbal roots that describe an action (fientive verbs) from verbal roots that describe a state,

3. For a review of scholarship on the D stem prior to Gesenius, including Ibn Jais, Sibawayh, and Saadiah Gaon, see Ryder (1966, 5-18). For Sibawayh, see also Leemhuis (1973). For Ibn Ezra, see Bacher (1882, 101-2). For David Ḳimḥi, see Chomsky (1952, 86).
situation, or condition (stative verbs). He then noted that Gesenius’ description of the D stem (“to busy oneself eagerly with the action indicated by the [verbal root]”) cannot apply to stative verbs, since those verbal roots do not describe an action. This led him to reformulate Gesenius’ description as follows: For fientive verbs, the D stem indicates “being energetically or habitually engaged” in that action (extensive), whereas for stative verbs, the D stem indicates “the active promotion of [that] state, situation, or condition” (factitive).

Like Weingreen, Kaufman (1996, 280-2) also posits a fundamental distinction between stative and fientive verbs: For stative verbs, the D stem is factitive. For fientive verbs (he calls them active verbs), the D stem is pluralitive, meaning that it is a marked form that indicates a plural object for transitive verbs and repeated action for intransitive verbs.

Unfortunately, none of the preceding synchronic intensive/pluralic approaches offer an explanation⁴ for why stative verbs are factitive in the D stem (e.g., קדשׁ G: ‘to be holy’ → D: ‘to make holy’) instead of being energetically or repeatedly stative (e.g., D: ‘to be very holy’ or ‘to be habitually holy’). In the words of Bauer and Leander (1922, 293), “Die Frage, wie die semitischen Intensiva kausative Bedeutung angenommen haben, ist also vorläufig nicht zu beantworten.”

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⁴. Gesenius and Weingreen do not address this question. Kaufman (1996, 282) asserts that no such explanation is possible or needed, “The dichotomy between active and stative verbs in Semitic (that is, between verbs and adjectives from an English perspective) is fundamental to the system; presuppositions that one form can do only one thing are by no means fundamental to it. The fact that [factitive] and pluralitive functions of the D stem cannot, to our way of thinking, be related is quite irrelevant.”
More recently, Fehri (2003) has drawn upon linguistic theory (primarily the Minimalist Framework and Distributive Morphology) to answer Bauer and Leander’s question. Specifically, he offers a synchronic explanation for why the classical Arabic D stem (stem II) can express either verbal plurality (repetition or multiple participants) or transitivity (factitive or causative). His argument is that gemination of R₂ (the distinctive morphological feature of the D stem) fundamentally expresses verbal plurality. This plurality can be expressed as repetition of the action itself or by repetition of the action by multiple subjects or on multiple objects. Alternately, this plurality can be partitioned between participants by adding an object, thereby making the verb syntactically transitive (factitive or causative). Thus Fehri’s work offers an explanation for how the D stem can have a pluralic (intensive) meaning for some verbs and a causative/factitive meaning for other verbs. It does not, however, explain why the D stem never indicates repetition for stative verbs (for example, with multiple subjects) or why it rarely has a causative meaning or adds an object for fientive verbs, so its answer to Bauer and Leander’s question is at best partial. Its dependence upon one (of several competing) linguistic theories of syntax has also limited its appeal.

1.2.2 Synchronic Approaches – Factitive

In strong opposition to descriptions of the D stem as intensive or pluralic, Goetze (1942) argued that the D stem in Akkadian is never the intensive (or repetitive, etc.) of the G stem. Instead, all true D-stem verbs in Akkadian are factitive, which he defined as the subject of the D-stem verb causing the direct object to enter the state described by the corresponding G-stem
verbal adjective. For example, a verb that means ‘to be straight’ in the G stem means ‘to make straight’ in the D stem. For verbs that are transitive in both the G and D stems, this results in a subtle distinction between the G and D stems: The G stem emphasizes the action (e.g., ‘to bury a corpse’), whereas the D stem emphasizes the result (resultative, e.g., ‘to cause a corpse to be in the buried state’).

Goetze recognized that a significant number of verbs are not factitive in the D stem, but he denied that they are actually true D-stem verbs. Some of the non-factitive verbs were derived from nouns (denominal), and he asserted that that puts them outside of the verbal system. He argued that the remaining non-factitive D-stem verbs express continuous action (cursive) and therefore are remnants of a hypothetical Gn stem (G stem with infixed N before the second radical R₂) that came to have the same form as the D stem when the N assimilated.

Goetze’s proposal for Akkadian was adapted to biblical Hebrew by Jenni (1968), who agreed that the Hebrew D stem is always factitive or resultative, never intensive. Since Hebrew lacks the Akkadian verbal adjective, Jenni argued that the Hebrew D stem refers to bringing about the state that is expressed by the adjective from the same root or by the G passive participle of the verb. For intransitive G-stem verbs, the D stem is factitive, which he defines as

5. To be precise, Goetze (1942, 5-6) divides verbal adjectives (he calls them statives) into four categories and defines the factitive slightly differently for each. For durative verbal adjectives, the D stem means to “put a person or a thing in the condition which the [verbal adjective] indicates.” For transitive perfect verbal adjectives, the D stem means “to make somebody have something.” For intransitive perfect verbal adjectives, the D stem means “to put somebody in the state of rest which the [verbal adjective] specifies.” For passive verbal adjectives, the D stem means “to put a person or thing into the state which the [verbal adjective] describes.”

6. For Goetze, resultative is therefore a subcategory of factitive.
bringing a totally passive object into the condition expressed by the adjective or participle without paying attention to the progress of the action (as opposed to the causative H stem, which causes a process rather than a state). For example, בָּרָך means ‘to be great’ in the G stem and ‘to cause, declare, or consider to be great’ in the D stem (1968, 41). For transitive G-stem verbs, the D stem is resultative, meaning that it expresses the idea of causing the object to be in the state that results from the action indicated by G stem. For example, חָלַק means ‘to divide’ in the G stem and ‘to cause to be in a divided state’ in the D stem (1968, 126-7).

Unlike Goetze, however, Jenni argued that all D-stem verbs fit in the system, including the denominal (1968, 264-74) and cursive verbs (1968, 151-3) that Goetze excluded. To do this, Jenni defines as resultative any action that is not a literal description of an actual, single event. For example, if a verb has a metaphorical meaning or describes indirect action, the verb is not describing a specific, actual action, so the D stem is used (1968, 275). Thus Jenni’s system is a mirror image of Gesenius’ system: both acknowledge a variety of meanings of the D stem and argue synchronically that they are all varieties of the fundamental meaning: intensive (Gesenius) or factitive/resultative (Jenni).

At around the same time as Jenni, Ryder (1966, 1974) also reached the conclusion that the D stem is factitive rather than intensive in biblical Hebrew, classical Arabic, and biblical Aramaic. However, whereas Jenni insists that every D-stem verb is factitive/resultative, Ryder allows for lexicalization, frequentative uses, and other exceptions that are not factitive/resultative. Ryder’s openness to variations and exceptions arises from his view that the verbal
stems arose independently, with the D stem being denominal in origin rather than being derived from the G stem, so one should not expect consistent opposition between stems.

Waltke and O’Connor (1990, 354–9) agree with Jenni that the D stem in biblical Hebrew is factitive for verbs that are intransitive in the G stem, and resultative for verbs that are transitive in the G stem. They unite these two D-stem meanings by explaining that both refer to causation with a passive undersubject, in opposition to the G stem, which lacks causation, and in opposition to the H stem, which indicates causation with an active undersubject (but see Garr 2012). They admit that this distinction between passive and active undersubjects is difficult to convey in English, but they explain it as follows (1990, 354–5). In the sentence, “John cooked the cabbage,” the G stem would concentrate on the process of John cooking, without drawing attention to any sense of the cabbage being caused to do or become something. The D stem would mean “John caused the cabbage to be in a cooked state,” where the cabbage (the undersubject) is described as completely passive in the cooking process, and where the focus is on the state achieved rather than on the process by which it is achieved. They also state that the D stem “causes a state rather than an action” and tie these two descriptions of the D stem together by stating that “since the object of causation is in a state of suffering the effects of an action, it is inherently passive in part” (1990, 400). The H stem would mean “John is causing the cabbage to cook,” where the cabbage (the undersubject) is described as somehow participating in the cooking process, so it is causation with an active undersubject.

Like Jenni and in explicit opposition to Ryder (1990, 399), Waltke and O’Connor argue that the stems form a system, although they concede to Ryder that there are occasional inconsistencies and overlaps of the stems. Like Goetze, Jenni, and Ryder, they have no place for
the D stem being the qualitative intensive of the G stem for any verb. Unlike Jenni and Goetze, however, they also acknowledge that there are verbs that are frequentative or pluralic in the D stem without being factitive or resultative. They admit that they are unconvinced by Jenni’s attempt to fit these frequentative/pluralic verbs within his factitive/resultative system (1990, 409–10, 414–16), but offer no suggestions for how to fit such verbs within their own description of the D stem as causation with a passive undersubject.

1.2.3 Other Synchronic Approaches

Harris (2005, 268) describes the Hebrew D stem as ‘complex active’. The type of complexity depends upon the verb and the writer, although for verbs that are stative in the G stem, the ‘complex active’ meaning is consistently factitive. Harris says that we should expect varying degrees of lexicalization for different verbs, so he ends up agreeing with Ryder that all verbs will not fall into a single neat scheme. Unlike Ryder, however, Harris argues that we should expect a general pattern of oppositions between stems, albeit with exceptions.

Finally, although it is not about the D stem, Garr’s (2012) synchronic method of unifying two verb types in the biblical Hebrew H stem is relevant. Although typical H-stem verbs indicate that an agent causes an undersubject to perform an action, there are a number of H-stem verbs that are denominal in origin, non-causative in meaning, and intransitive. Garr unifies these two verb types by noting that both types of verbs have a subject that initiates a force that travels a path (metaphorically) through an instrument and reaches the goal of producing a change. By defining these as the central features of the H stem, Garr unifies these two H-stem verb types synchronically, despite the fact that they differ in transitivity.
Although Garr does not mention the D stem, it is possible that his approach could be used with it as well, since the D and H stems are both transitive and causative with some verbs and intransitive and non-causative with other verbs. As with all synchronic solutions, the challenge would be to craft definitions that are wide enough to include all verbs yet narrow enough to distinguish the G, D, and H stems. For example, why does אמר ‘to say’ occur in the G stem, but דבר ‘to speak’ occurs in the D stem, and נון ‘to tell’ occurs in the H stem? And what is the difference between the D and H stems of שחת, both of which seem to mean ‘to wipe out’? This difficulty raises the question of whether a synchronic solution is possible.

1.2.4 Can Pluralic and Factitive/Causative be Combined Synchronically?

Greenberg (1991) divided the functions of the Hebrew D stem and the corresponding Arabic stem (stem II) into two groups: causative and pluralic. The causative group includes factitive (causation of a state), estimative (causation by a verbal act), and denominal (causing the existence of a noun). He then argued that the other meanings of the D stem (repetition over time or space, intransitive action by multiple subjects, or action on multiple direct objects) all fit into a pattern of verbal plurality that is seen cross-linguistically for verbs with partial reduplication (which he considers the gemination of R₂ in the D stem to be). Although all of his argumentation was synchronic, he stated that the causative meanings “cannot easily be subsumed under verbal plurality,” and expressed hope that a diachronic solution can eventually be found.

7. Greenberg terms natural ergativity the fact that the same verbal form (the D stem) is used for the plural subject of an intransitive verb and the plural object of a transitive verb.
Several scholars have agreed with Greenberg that the bridge between factitive and intensive/pluralic meanings in the D stem cannot be synchronic, and have offered diachronic solutions. Some have argued that the diversity of D-stem meanings arose because two or more D stems have fallen together. Others have argued that the D stem has changed over time in different ways for different verbs, depending on the semantics of the particular verb.

1.2.5 Diachronic Approaches – Multiple D Stems Fell Together

Poebel (1939) posited that there were originally two G stems (intransitive and transitive) and two D stems (factitive and pluralic), each distinctly vocalized. The two G stems became lexicalized so that each individual verb could occur in only one of the two G stems, and the two D stems collapsed into one as a result. Since Poebel offered no evidence for this historical reconstruction, however, it has not been widely accepted (Kouwenberg 1997, 9, 16n3).

Steiner (1980a) proposed that Proto-Semitic had two suffix conjugations (a transitive one with agent morphemes using /t/, and an intransitive one with subject morphemes using /k/), one prefix conjugation, and geminate versions of all three, with extensive, factitive, and iterative meanings, respectively. The three geminate conjugations eventually fell together as the D stem. Unfortunately, Steiner offered no evidence in his two-and-a-half page article, and neither he nor anyone else seems to have developed this proposal further.

1.2.6 Diachronic Approaches – The D Stem Changed over Time

Edzard (1965) argued that although the Akkadian (Old Babylonian) D stem typically is factitive for verbs that are stative in the G stem and indicates the plurality of the object for verbs
that are transitive in the G stem, there have been two types of change over time. The first change is that for some verbs that are stative in the G stem, the D stem has become lexicalized, and the Š stem has become the factitive. The other change is that the productivity of the D stem of verbs that are transitive in the G stem has been severely reduced, so many G-stem transitive verbs lack a D stem that indicates a plural object.

According to Kouwenberg (1997, 2010), the Akkadian D stem began as follows. In Proto-Semitic, many adjectives came in pairs: a simple adjective and an adjective with gemination of the second root consonant to indicate intensity (e.g., *rapašum ‘wide’ vs. *rappašum ‘very wide’). Originally, some G-stem verbs and all D-stem verbs were formed from the simple and geminate adjectives, respectively. Each G-stem verb that was derived from an adjective could communicate both a *stative* meaning ‘to be/become wide’ and a *factitive* meaning ‘to make wide’. D-stem verbs had the same two meanings (stative and factitive), except that they were marked for intensity (e.g., ‘to be/become very wide’ and ‘to make very wide’) because the D-stem verb was derived from the corresponding geminate adjective. Over time, the D stem changed as follows. First, the intensive D-stem meaning (e.g., ‘to be/become/make very wide’) broadened to include other expressions of verbal plurality8 (e.g., ‘to be/become/make wide repeatedly’). Second, the D stem also became productive such that D-stem verbs could be formed directly from G-stem verbs, rather than only from adjectives. Third, since the D stem was

8. Kouwenberg follows Dressler (1968), who defined *verbal plurality* as a broad category that includes iterative or continuative action over time, distributive action over multiple objects, and intensive action. Kouwenberg tends to use ‘verbal plurality’ and ‘intensity’ interchangeably, although, strictly speaking, intensity is a subcategory of verbal plurality according to Dressler. For an extended discussion of verbal plurality, see §2.4.
marked for intensity, and since intensity increases the semantic transitivity\(^9\) of a clause, the D stem came to be marked for high semantic transitivity. In particular, 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. Fourth, this loss of a factitive G stem with which to be in contrast caused the factitive D stem to lose its sense of verbal plurality (e.g., ‘to make very wide’ or ‘to make wide repeatedly’ etc. became ‘to make wide’). Fifth, the strong association of the D stem with a factitive meaning caused factitive D-stem verbs to lose their remaining non-factitive meanings. Certain verbs, however, have a meaning that precludes a factitive sense in both the G and D stems (e.g., ‘to pay’, ‘to finish’), so their D stem either remained marked for verbal plurality (e.g., ‘to pay repeatedly’), or else became interchangeable with the G stem as verbal plurality became less associated with the D stem (e.g., ‘to finish’).

Joosten (1998) agreed with Kouwenberg that the D stem originally expressed intensity and that the extension of verbal plurality to a factitive meaning arose in part because the G stem originally expressed two kinds of meaning. Joosten, however, reconstructed the Proto-Semitic situation differently. Whereas Kouwenberg argued that the Proto-Semitic G stem had only one spelling and could indicate either a stative meaning ‘to be/become wide’ or a factitive meaning ‘to make wide’, Joosten argued that the Proto-Semitic (or at least Proto-Hebrew) G stem had two paradigms, each with its own meaning. Joosten noted that in biblical Hebrew, most verbs with

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9. Kouwenberg follows Hopper and Thompson (1980), Givón (1984–90, 2001), and others (§2.2) in distinguishing syntactic transitivity from semantic transitivity. **Syntactic transitivity** is a binary property of a verb; a verb is syntactically transitive if and only if it has direct object. **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. For an extended discussion of transitivity, see §2.1 (syntactic transitivity) and §2.2 (semantic transitivity).
the G-stem paradigm\textsuperscript{10} \textit{qāṭal} ~ \textit{yiqtōl} are \textbf{active voice} (e.g., יָשָׁר ~ שָׁר, ‘to break’), whereas those that follow the paradigm \textit{qāṭēl} ~ \textit{yiqtal} are \textbf{middle voice} (e.g., יֶשֶׂה ~ יָשֵׂה, ‘to hate’).\textsuperscript{11} Furthermore, he noted that a few Hebrew verbs can take either pattern in the G stem, each with the corresponding meaning (e.g., active \textit{wayyahālōš} ‘and he weakened someone’ vs. middle \textit{wayyeḥēlāš} ‘and he became weak’). He then argued based on this Hebrew evidence (with a few examples from other Semitic languages) that Proto-Semitic had two different G stems; in principle, any verb could be used in the middle-voice G stem, following one paradigm, or in the active-voice G stem, following the other. Joosten then posited that the D stem originally indicated the intensive of either G stem (e.g., ֶלֲש G: ‘to weaken someone’ or ‘to be weak’ vs. D: ‘to weaken someone greatly ’ or ‘to be very weak’).

Joosten then argued that each verb in the D stem in biblical Hebrew reflects one of the following three development paths: First, for verbs whose D stem was the intensive of the active G stem, the active G stem often went out of use, the middle voice became the only G stem, and the active D stem lost its intensive nuance. For example, the middle and active paradigms of the G stem of הַט originally meant ‘to be dismayed’ and ‘to dismay someone’, respectively, and the D stem meant ‘to dismay someone greatly’. But eventually, the G stem was restricted to ‘to be dismayed’, and the D stem became ‘to dismay someone’. Like the first path, the second path is

\textsuperscript{10} The G-stem paradigm \textit{qāṭal} ~ \textit{yiqtōl} describes the root \textit{qṭl} in the suffix conjugation (aka ‘perfect’) ~ the prefix conjugation (aka ‘imperfect’).

\textsuperscript{11} Joosten (1998, 207) defines active and middle voice as follows: “active verbs denote a process taking its point of departure in the subject and accomplished outside of it, whereas middle verbs describe a process taking place within the subject: the subject is involved in the process.” Joosten attributes the existence of middle-voice verbs with a \textit{qāṭal} ~ \textit{yiqtōl} paradigm to paradigm leveling; such middle-voice verbs originally had a middle-voice paradigm. See §2.3.3.
also for verbs where the D stem was the intensive of the active G stem. For verbs on path two, however, the middle G stem either was eliminated or never existed, and the active D stem either remained as the intensive active or else it developed a specialized lexical meaning. For example, *qbr* means ‘to bury someone’ in the G stem and ‘to bury many people’ in the D stem. The third path is for verbs where the D stem was the intensive of the middle G stem. For these verbs, the active G stem either never existed or was lost. For example, *phd* means ‘to dread’ in the G stem (middle voice) and ‘to dread greatly’ (intensive middle voice) in the D stem.

### 1.3 The Need for Further Work

None of these proposals have generated consensus. Jenni is the only one who has checked his proposal with all verbal roots that occur in the D stem in the Hebrew Bible, but his methodology has been criticized by several scholars. The other proposals, along with any other weaknesses they may have, all examine only a subset of D-stem verbs, so it is unclear which one best fits the data. Thus it is no surprise that after all of these proposals, Muraoka stated in 2006 that “the question how the function of Piel [the D stem] in relation to other conjugations, notably Qal [the G stem], should be defined still remains one of the major challenges facing Hebrew and Semitic linguistics” (Joüon and Muraoka 2006, 143; cf. Goshen-Gottstein 1985, 283).

Recent advances in linguistics, however, may provide the needed tools to solve this problem. A pair of linguists have recently argued that there is a cross-linguistic

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12. Criticisms include a failure to define ‘transitive’ in an objective way, assuming that there is no overlap between the stems and then reading distinctions between the stems into the text rather than out of it, assuming that there is a synchronic solution, ignoring the date and genre of the texts and the conjugations of the verbs, and relying on unrepresentative uses for some verbs (Claassen 1971a; Degen 1971, 47-55; Harris 2005, 45; Hillers 1969; Siebesma 1991, 18-20).
grammaticalization path whereby intensive/pluralic verb forms become factitive/causative (Li and Whaley 2012). Furthermore, the meaning of a verb form undergoing grammaticalization is expected to be an amalgam of the meanings at various stages along the grammaticalization path (Andrason 2011, 28-9; Brinton and Traugott 2005, 6; Hopper and Traugott 2003, 124-6). This explains the observations by several linguists that the same verb forms are used for intensive/pluralic and factitive/causative meanings in a variety of languages (Golovko 1993; Hopper and Thompson 1980; Kulikov 2001; Li 1993). When combined with Greenberg’s (1991) demonstration that the morphological doubling of the D stem fits a cross-linguistic pattern of verbal plurality and Kouwenberg’s (1997, 2010) analysis of high semantic transitivity as an extension of verbal plurality (intensity) in the Akkadian D stem, these concepts may provide a way to explain diachronically the variety of meanings of the biblical Hebrew D stem.
Chapter 2. Relevant Concepts from Linguistic Theory

In order to define the concepts, terminology, and categories that will be used to collect and analyze data on how the D stem is used in biblical Hebrew, we first need to understand the underlying linguistic theory. To that end, this chapter discusses syntactic transitivity (§2.1), semantic transitivity (§2.2), semantic categories of verbs (§2.3), verbal plurality (§2.4), grammaticalization (§2.5), and lexicalization (§2.6), as well as how these concepts have been applied to the D-stem by prior authors. In particular, section 2.1.2 argues on a theoretical basis against the proposals by Goetze, Jenni, and Waltke and O’Connor (§1.2.2); section 2.3.1 suggests modifications to Kouwenberg’s (§1.2.6) categories and terminology; and sections 2.3.2 and 2.3.3 argue on a theoretical basis against Joosten’s proposal (§1.2.6).

2.1 Syntactic Transitivity

2.1.1 Syntactic Transitivity Theory

When a verb is described as being either transitive or intransitive, it is being described in terms of its syntactic transitivity. **Syntactic transitivity** is a binary property of a verb as it is used in a particular clause: a verb is either transitive or intransitive, depending on whether or not it has a direct object. A **transitive verb** has a direct object, whereas an **intransitive verb** does not (Givón 2001, 1:109).

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13. Similar definitions include “a predicate is commonly said to be *transitive* if it has two arguments and *intransitive* if it has only one” (Bowers 2002, 183, italics in original), and “Transitive verbs have two core arguments: agent and patient; intransitive verbs have only one argument in their semantic frame, and it can be either a typical agent (unergative verbs) or a typical patient (unaccusative verbs)” (Kalinina et al. 2006, 441).
Note from the preceding definition that the transitivity of a verb depends upon something other than the verb: the presence or absence of a direct object. Thus, the syntactic transitivity of a verb can change depending on how it is used. Some verbs are always transitive, some are always intransitive, and some verbs are sometimes transitive and sometimes intransitive. In the Hebrew Bible, the D stem of the verb שָׁדַד means ‘to make new, rebuild, restore’ and is always transitive because it always has a direct object: the thing that is made new, rebuilt, or restored. For example, in 2 Chronicles 15:8 (יְהוָ֔ה חַ֣בֶּ֤בֶּזְּרָתַ֣י הָ֣לֹהֶ֔ל ‘He rebuilt YHWH’s altar’), יְהוָ֔ה חַ֣בֶּ֤בֶּזְּרָתַ֣י הָ֣לֹהֶ֔ל ‘YHWH’s altar’ is the direct object of the verb שָׁדַד ‘he rebuilt’. By contrast, the D stem of the verb הלך means ‘to walk, go about’ and is always intransitive in the Hebrew Bible. For example, there is no direct object in גָּלֵלְּבָ֣ו אֱלֹֽהִים ‘I will walk in your truth’ (Psalm 86:11). Finally, the G stem of מלא is sometimes transitive and sometimes intransitive. For example, in Genesis 29:21, the verb מלא is intransitive (יָלַ֞א אֵֽלֶּה אָֽדָם ‘my days are full = completed’), whereas in Ezekiel 8:17, the same verb verb form is transitive (אֵֽלֶּהְבֵּֽו אָֽדָם ‘they filled the land’).

2.1.2 Syntactic Transitivity and the D Stem

This concept of syntactic transitivity is built into the explanations of the D stem by Goetze, Jenni, and Waltke-O’Connor because all three define the D stem in a way that requires it to be syntactically transitive. Recall from section 1.2.2 that, according to Goetze, all true D-stem verbs in Akkadian are factitive, meaning that they cause the direct object to enter into the state described by the corresponding G-stem verbal adjective. Since they have a direct object, they are syntactically transitive. According to Jenni, verbs that are intransitive in the G stem are factitive (and hence transitive) in the D stem, and verbs that are transitive in the G stem are resultative.
(and hence still transitive) in the D stem. Thus Jenni’s system also requires all D-stem verbs to be syntactically transitive. Finally, according to Waltke-O’Connor, the D stem indicates causation with a passive undersubject. Because an undersubject is a type of direct object, Waltke-O’Connor’s description of the D stem requires the D stem to be syntactically transitive. Thus Goetze, Jenni, and Waltke-O’Connor all describe the D stem in ways that require it to be syntactically transitive.

Nevertheless, Goetze, Jenni, and Waltke-O’Connor all acknowledge the existence of verbs that are syntactically intransitive in the D stem (such as הָלַכָּה ‘to walk’), but they deal with this fact differently.

As discussed in §1.2.2, according to Goetze, verbs that lack a direct object in the D stem are not true D-stem verbs; they are cursive Gn-stem verbs that only look like D-stem verbs (1942, 6-8). This hypothesized Gn stem has (to my knowledge), however, never been reported in any Semitic language by any author except Goetze. A solution that did not require the supposition of a separate stem just to explain one semantic group of verbs would be preferable.

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14. By *Gn stem*, Goetze indicates a stem like the G stem but with an infixed *N* before the second radical *R₂*. He hypothesizes that the *N* assimilated to *R₂*, making the Gn stem look like the D stem. By *cursive*, Goetze refers to verbs that describe “a state of continuous action.”

15. Blau (1977, 93) discusses another problem with Goetze’s hypothesized Gn stem: Arabic does not assimilate the consonant *N* to the next consonant, yet Goetze’s ‘cursive’ verbs have a doubled root consonant rather than an *N* in Arabic’s D stem (stem II). Pace Blau, however, this does not disprove Goetze’s proposal. Instead, it requires that the assimilation had already occurred and the Gn stem had already been re-analyzed as the D stem in an ancestor of Arabic. Since *N* assimilates to the next consonant normally in Akkadian and Northwest Semitic texts, and seems to have assimilated in Amorite, Eblaite, and Old South Arabian as well (the data is complicated by morphographemic spelling in the texts), this seems quite possible (Huehnergard 2002, 16).
Alternately, another way to handle intransitive D-stem verbs within Goetze’s system would be to categorize them as denominal verbs and hence “outside of the verbal system in the stricter sense of the word” (Goetze 1942, 3). Even if one could find nouns from which to derive all of these verbs, however, this solution would still be unattractive, because instead of explaining why the D stem is used for these verbs, it declares that no explanation is needed. Since the D stem is the main stem used to form denominal verbs in biblical Hebrew (Waltke and O’Connor 1990, 410; Ryder 1966, 62-3; cf. Gerber 1896), an explanation of the D stem that included such verbs would be preferable.

According to Jenni (1968, 151-6), verbs that look intransitive in the D stem are actually transitive in both the G and D stems because they have an implied direct object that is a nominalization of the action. For example, לָכַח ‘to walk’ means ‘to take a walk’, רָעַב ‘to shout with joy’ means ‘to emit a cheer’, and צָעַק ‘to cry out’ means ‘to emit a cry’.16

There are three difficulties with Jenni’s implied-direct-object approach to transitivity for such verbs. The first is that because the implied direct object (a cognate object) is a nominalization of the event, the verb is fundamentally intransitive, despite the surface structure (cf. Kittilä 2002b, 51; Givón 2001, 1:132-3; Tsunoda 1999a, 389). The second problem is that Jenni’s procedure would allow any fientive verb to be recast with a cognate object (e.g., ‘she jumped’ → ‘she made a jump’). Consistently applying this approach would eliminate the category of intransitive fientive verbs,17 eliminating the distinction between fientive verbs that

16. Ryder (1966, 201) also mentions this in passing as a possibility for describing these verbs as denominal.
17. This is similar to Waltke and O’Connor’s criticism in (1990, 404-5).
take a direct object (e.g., ‘he broke it’) and those that cannot (e.g., ‘he walked’). Unless one were to take the position that fientive verbs are always transitive in all languages, it seems arbitrary to apply this procedure only to verbs that occur in the Hebrew or Semitic D stem. The third problem is that (at least in English and German) this procedure (e.g., ‘to walk’ → ‘to take a walk’ and ‘gehen’ → ‘einen Gang tun’) often changes the verb (e.g., ‘walk’ → ‘take’ and ‘gehen’ → ‘tun’) (Jenni 1968, 152), and so it does not explain the intransitive verbs themselves. These three difficulties make Jenni’s broadened definition of transitivity incompatible with the definitions of syntactic transitivity in general use, namely that a transitive verb is one that has a direct object.

Finally, Waltke and O’Connor (1990, 414-16) also admit the existence of intransitive D-stem verbs. They classify such verbs as frequentative, meaning that they refer to repeated action. They do not, however, address the issue that these verbs’ lack of causation and lack of a direct object puts them outside of their description of the D stem as causation with a passive undersubject. Their system thus leaves unexplained an entire class of D-stem verbs.

In summary, the systems of Goetze, Jenni, and Waltke-O’Connor all require that the D stem be syntactically transitive, and they have no adequate explanation for verbs that are syntactically intransitive in the D stem. So the connection that they make between the D stem and syntactic transitivity is not entirely successful. There is, however, an alternate conception of transitivity that has been linked to the D stem, namely the concept of semantic transitivity.

### 2.2 Semantic Transitivity

The syntactic definition of transitivity explained in §2.1.1 does not distinguish between verbs that affect their direct objects (e.g., ‘I broke the window’) and those that do not (e.g., ‘I
saw the window’). Such a distinction is useful because many languages code the two types of direct object differently. To formalize this distinction, linguists have developed the concept of semantic transitivity.

**Semantic transitivity** refers to the extent to which the subject of the clause affects the direct object. Whereas syntactic transitivity (§2.1.1) is binary (a clause is either transitive or intransitive), semantic transitivity comes in multiple levels. A clause can have high semantic transitivity (greatly affects the object), low semantic transitivity (little or no effect on the object), or be somewhere in between. This multivalued nature of semantic transitivity arises from the fact that it is defined in terms of a cluster of characteristics, so a clause can have some characteristics that are associated with high transitivity while having other characteristics that are associated with low transitivity.

This use of a cluster of characteristics to measure semantic transitivity allows it to be defined in terms of a prototype. A **prototypical transitive clause** is defined as any clause that has the highest possible level of semantic transitivity.¹⁸ The semantic transitivity of any clause can be measured by comparing it with the relevant characteristics of a prototypical transitive clause.

In this paper **high transitivity** and **low transitivity** refer to the ends of the semantic transitivity scale (§2.2), whereas **transitive** and **intransitive** refer to syntactic transitivity (§2.1).

¹⁸. Prototypes differ from Platonic Forms, in that clauses with a prototypical level of semantic transitivity exist in the actual world, whereas for a Platonic Form, things in the actual world are only shadows that approximate the forms (cf. Givón 2001, 1:195).
2.2.1 Semantic Transitivity According to Hopper and Thompson

The seminal paper on semantic transitivity is by Hopper and Thompson (1980). They define *semantic transitivity* as “a global property of an entire clause, such that an activity is ‘carried-over’ or ‘transferred’ from an agent to a patient” (251).

Table 2 shows the components of semantic transitivity that Hopper and Thompson identified. Each component was chosen based on the fact that in one or more languages it affects parameters that are considered on independent grounds to correlate with transitivity. To understand this correlation, consider the following. In ergative-absolute languages, by definition, the subject of a clause is in the ergative case only if the clause has a direct object, whereas the subject of a clause without a direct object is in the absolute case, as if the subject were a direct object. Thus we have independent evidence that the ergative case is associated with transitivity. This evidence is used to develop the list of components of semantic transitivity by noting languages such as Tongan that have *split ergativity*. Although Tongan normally uses the ergative for the subject of a clause with a direct object (e.g., ‘Miriam ate the fish’), if the direct object does not refer to a particular entity (e.g., ‘Miriam ate fish’), then the subject of the clause switches to the absolute case, as if it were a clause without a direct object (257-8). This use of the absolute case is evidence that a direct object that does not refer to a particular entity makes a clause less transitive than a direct object that refers to a particular entity. By using tests such as this in a variety of languages, Hopper and Thompson were able to identify the following components (table 2) that correlate with transitivity.
### Table 2: Components of Semantic Transitivity According to Hopper and Thompson

<table>
<thead>
<tr>
<th></th>
<th>High Transitivity</th>
<th>Low Transitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td>two or three</td>
<td>one</td>
</tr>
<tr>
<td><strong>Kinesis</strong></td>
<td>action (fientive)</td>
<td>non-action (stative)</td>
</tr>
<tr>
<td><strong>Telicity</strong></td>
<td>telic</td>
<td>atelic</td>
</tr>
<tr>
<td><strong>Aspect</strong></td>
<td>perfective</td>
<td>imperfective</td>
</tr>
<tr>
<td><strong>Punctuality</strong></td>
<td>punctual</td>
<td>non-punctual</td>
</tr>
</tbody>
</table>
| **Telicity**
| **Volitionality of subject** | volitional       | non-volitional            |
|                      |                            |                          |
| **Affirmation**      | affirmative               | negative                 |
| **Mode**             | reals                     | irrealis                 |
| **Agency of subject**| subject highly agentive   | subject low in agency    |
| **Affectedness of object** | object totally affected | object not affected      |
| **Individuation of object** | object highly individuated | object non-individuated |

The category **participants** (252, 254, 284-5; also called valency) indicates the number of participant roles that are played by distinct entities. For example, the clauses ‘Sarai moved’ and ‘Sarai and Abram moved’ both have only one participant role: the subject(s) who perform(s) the action, whereas ‘David killed Goliath’ and ‘David and Jonathan killed many Philistines’ both have two participant roles: the subject(s) (‘David’ or ‘David and Jonathan’) and the objects(s) (‘Goliath’ or ‘many Philistines’). The clause ‘Solomon made Benaiah kill Adonijah’ has three participant roles: a subject (‘Solomon’), an undersubject (‘Benaiah’), and an object (‘Adonijah’). Since the presence or absence of a direct object determines syntactic transitivity, semantic transitivity thus subsumes syntactic transitivity through the parameter **participants**.

19. Due to limitations in their sources, Hopper and Thompson combine telicity with aspect in most of their paper, treating telic and perfective as identical, and atelic and imperfective as identical, even though they admit that they are distinct (270-1).

20. To be precise, an **undersubject** is a patient of the causation, and an **agent** or **experiencer** of the caused sub-action. In the example ‘Solomon made Benaiah kill Adonijah’, the undersubject Benaiah is the patient of ‘made’ (the causation) and the agent of ‘kill’ (the sub-action). For definitions of the semantic roles agent, experiencer, and patient, see table 6 in §2.2.3.
The reference to a ‘distinct’ direct object in the definition of the number of participants refers to whether the direct object is the same as the subject. The reason for this is that reflexive constructions have intermediate status between one-participant and two-participant clauses because, although they have both a subject and an object, the same entity performs both roles (277-8).

Hopper and Thompson’s category *kinesis* (252, 285) refers to whether the verb describes an action (‘David ran’) or a state (‘David was strong’). As discussed in §2.3.2, action verbs are called *fientive* verbs, whereas non-action verbs are called *stative* verbs because they refer to a state. A clause with a fientive verb is higher in transitivity than one with a stative verb, because the process of transferring something from an agent to a patient is an action, not a state.

The category *telicity* (270-6, 285-6)\(^9\) indicates whether the predicate specifies an endpoint or conceptual boundary (*telic*) or not (*atelic*). Describing an action without reference to an endpoint suggests that the effect of the agent on the patient is not yet complete, so it indicates a lower transitivity than if an endpoint is specified. Note that it is the description of the event that is at issue, not the event itself. For example, the sentence ‘she carried the book all the way home’ (*telic*) describes a greater effect on the book than the sentence ‘she carried the book’ (*atelic*), so the first sentence is higher transitivity, even though the event is described as past in both cases.

*Aspect*\(^9\) refers to whether the predicate is viewed from the outside as a bounded whole (*perfective*) or viewed from within with reference to its internal structure (*imperfective*) (Comrie 1976, 24; Bybee et al. 1994, 54-5, 125-6). Telic and atelic situations can be described with either perfective or imperfective aspect, as table 3 demonstrates.
Table 3: Telicity vs. Aspect for Durative Verbs

<table>
<thead>
<tr>
<th></th>
<th>Telic</th>
<th>Atelic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfective</td>
<td>carried it home</td>
<td>carried it</td>
</tr>
<tr>
<td>Imperfective</td>
<td>was carrying it home</td>
<td>was carrying it</td>
</tr>
</tbody>
</table>

According to Hopper and Thompson, punctuality (252, 266-8, 286) “refers to the suddenness of an action, or the absence of a clear transitional phase between onset and completion. Punctual verbs contrast with durative verbs, in which internal complexity is possible under normal interpretation” (286, emphasis added). Punctual verbs (e.g., ‘kick’) are more transitive than durative verbs (e.g., ‘carry’) because they intrinsically suggest a more marked effect on their patient.

There is significant overlap between punctuality and telicity, in that punctual verbs are necessarily telic, because a punctual verb (e.g., ‘kick’) has no transition between onset and completion, so it necessarily implies an endpoint (telic).21 The distinction, however, is that Hopper and Thompson use punctuality to refer to the lexical aspect of the verb, by which they mean the view of an action that is predictable from the meaning of the verb, such as punctual or durative (271), whereas they use telicity to refer to the presence or absence of an endpoint (either stated or implied) in the description of an event. This distinction between the lexical meaning and the meaning in context allows verbs with a durative lexical meaning (such as ‘carry’) to be

21. One can use the (normally punctual) verb kick without an endpoint (atelic), such as in the sentence ‘he was kicking wildly as he was dragged off”. But this uses the verb kick as a durative verb, as seen in the fact that internal complexity is possible with this use of kick: ‘he kicked as he was carried off, wildly at first, but the force and frequency diminished as he grew tired’. The reason that kick is now durative is that it refers to a series of kicks rather than an individual kick, and there is a clear transitional phase between the onset and completion of a series of kicks.
described with an endpoint (telic) or without an endpoint (atelic), as table 3 illustrates, whereas a punctual verb like ‘kick’ is necessarily telic.

Similarly, there is significant overlap between punctuality and aspect, in that a punctual verb cannot (by definition) have internal complexity, so one cannot view it with reference to its internal structure (imperfective). Only durative verbs can be expressed with either perfective or imperfective aspect (as illustrated in table 3); punctual verbs are necessarily perfective.

The category volitionality (252, 264-5, 269-70, 286-7) refers to whether or not the agent is presented as acting intentionally. Intentional actions tend to have a more apparent effect than unintentional ones (all else being equal). For example, ‘I wrote your name’ (volitional) has a higher transitivity than ‘I forgot your name’ (non-volitional). Volitionality is mainly a lexical function of the verb, but the presumptive volitionality of a verb can be overridden, such as by an adverb like ‘deliberately’ or ‘accidentally’.

Hopper and Thompson’s category affirmation (252, 276-7) refers to whether the predicate is affirmed or negated. Affirmative predicates (e.g., ‘David killed Goliath’) have more effect, and hence are more transitive, than negative predicates (e.g., ‘Saul did not kill Goliath’).

Mode (252, 277, 287) indicates whether or not the predicate is described in terms of the real world. A predicate in the realis (or indicative) mode describes things in reference to the existing world (e.g., ‘David was king’). A predicate in the irrealis mode (subjunctive, optative, hypothetical, imaginary, conditional, etc.) is presented as occurring in a contingent or otherwise

22. If one uses ‘kick’ with imperfective aspect (e.g., ‘he was kicking it’), one is no longer using ‘kick’ as a punctual verb. Instead, ‘kicking’ refers to repeated action: the individual kicks are punctual, but the set of actions (‘kicking’) is durative.
non-real world (e.g., ‘David would have been captured if he had remained in Keilah’), so it has less effect in this world and hence lower transitivity than one that is described in the indicative (e.g., ‘David was captured’).

Hopper and Thompson measure the agency (252, 265-6, 273, 286-7) of a subject in terms of the following hierarchy (Silverstein 1976): first-person pronoun, second-person pronoun, third-person pronoun, proper name, human-referring common noun, animate-referring common noun, inanimate-referring common noun. Entities at the beginning of the hierarchy (e.g., first-person pronoun) correlate with a higher level of transitivity than those at the end. The explanation for this is that a sentence such as ‘the boy startled her’ is likely to be understood as a perceptible event with perceptible consequences, whereas ‘the picture startled her’ is likely to be understood as merely a matter of her internal state, with the picture not performing any perceptible action.

The affectedness (252-3, 261-70, 287) of an object refers to how much it is changed by the action. This category includes the fraction of the object that is affected (‘I drank up the milk’ vs. ‘I drank some of the milk’) and the level of the effect (‘I smashed the mirror’ vs. ‘I broke the mirror’). Thus qualitative intensity, which was discussed in §1.2.1 of this paper, is subsumed by this category; if all else is equal, a qualitatively intensive action has greater effect, and hence a higher semantic transitivity, than a non-intensive action.

23. Hopper and Thompson (286) do, however, admit that the order of the hierarchy may vary somewhat with culture and genre.
24. The evidence for this is Silverstein’s (1976) analysis of the conditions under which the ergative case is used in various languages.
Finally, Hopper and Thompson define the **individuation** (252-3, 256-9, 266, 279, 286-91) of an object as the extent to which it is described as a particular, concrete entity that is distinct from both the subject and its own environment. Drawing on the work of Timberlake (1975), they characterize individuation in terms of the characteristics in table 4. Different languages are sensitive to different individuation characteristics. For example, Hebrew normally marks direct objects with רָאָה only if they are definite (e.g., רָאָה אֶת־הַסֵּפֶר ‘he saw the book’ but רָאָה הַסֵּפֶר ‘he saw a book’), whereas for Spanish to mark a direct object with ‘a’, it must be both referential\(^{25}\) and human (or humanlike) (e.g., *Busco mi libro* ‘I’m looking for my book’ and *Busco un amigo* ‘I’m looking for a friend (any friend)’, but *Busco a mi amigo* ‘I’m looking for my friend’).

<table>
<thead>
<tr>
<th>Individuated</th>
<th>Non-Individuated</th>
</tr>
</thead>
<tbody>
<tr>
<td>proper noun</td>
<td>common noun</td>
</tr>
<tr>
<td>human or animate</td>
<td>inanimate</td>
</tr>
<tr>
<td>concrete</td>
<td>abstract</td>
</tr>
<tr>
<td>singular</td>
<td>plural</td>
</tr>
<tr>
<td>count</td>
<td>mass</td>
</tr>
<tr>
<td>referential(^{25})</td>
<td>non-referential</td>
</tr>
<tr>
<td>definite(^{25})</td>
<td>indefinite</td>
</tr>
</tbody>
</table>

Hopper and Thompson argue (280-95) that semantic transitivity is an important language feature with consistent components cross-linguistically because semantic transitivity correlates

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25. A **referential** noun points to a specific entity. A **definite** noun indicates that the speaker assumes that the hearer knows the specific entity to which it points. Definite nouns are normally referential, but a noun can be referential without being definite (Givón 2001, 1:441). For example, consider the following two sentences in colloquial English: “I read this book yesterday. I forget the name of it, but it was great.” ‘This book’ is referential because the speaker is describing a specific book. But ‘this book’ is indefinite because the speaker assumes that the hearer does not yet know the book to which the speaker is referring. The concepts of reference and definiteness are described in detail in (Givón 2001, 1:437-78). See also (Heim 1982; Abbott 2006).
with narrative discourse functions. Specifically, high transitivity signals that a clause is in the *foreground* of a narrative, meaning that it is part of the core chain of events that are the focus of the narrative. Conversely, low transitivity signals that a clause is in the *background* of a narrative, meaning that it could be omitted or placed in a different order without implying a change in the actual events that are the focus of the narrative.

Reviewing the components of table 2, Hopper and Thompson note that only three of them (participants, affectedness, and individuation) refer to the object, and that the other eight are unaffected by the absence of an object. They then point out that some clauses with two participants (a subject and an object) have fewer high-transitivity features than some clauses with only a subject (254). For example, the two-participant clause ‘Slavery would not be compatible with justice’ has only one high-transitivity feature: the existence of two participants (*slavery* and *justice*), whereas the one-participant clause ‘David left’ has seven features of high transitivity: action, telic, perfective, volitional, affirmative, realis, and agentive. Based on similar examples, Hopper and Thompson argue that it is possible for a one-participant clause (syntactically intransitive) to have higher semantic transitivity than a two-participant clause (syntactically transitive) (254).26

Although they do not state it explicitly, this procedure of ranking the transitivity of clauses by counting features rather than weighing them assumes that all components of semantic transitivity in table 2 have comparable weight. This assumption has been questioned by Tsunoda

26. As evidence, they cite the languages that code two-participant clauses with low semantic transitivity the same as they code clauses with only one participant (254, 263, 265-6). But this, at best, only demonstrates equivalent transitivity. To prove their point, they would need to show some one-participant clauses that are coded as two-participant clauses in that same language.
(1985, 1999a, 1999b), who has suggested corrections and further developments to Hopper and Thompson’s work.

### 2.2.2 Semantic Transitivity According to Tsunoda

Tsunoda (1985) defines prototypical transitive verbs as “those verbs which describe an action that not only impinges on the patient but necessarily creates a change in it” (387; cf. Tsunoda 1999b). By this definition, ‘kill’ is a prototypical transitive verb, but ‘hit’ is not, because it is possible to hit something without affecting it.

Tsunoda then categorizes verbs based on how closely their meaning approximates this notion of a prototypical transitive verb, as shown in table 5. Prototypical transitive verbs are at the top of the table (type 1A), where the verb indicates a change in the patient. Thus Jenni’s factitive and resultative verbs are type 1A. As one goes toward the bottom of the table, the level of affectedness decreases. For example, a type 1B predicate has a lower level of affectedness than a type 1A predicate, because, for example, it is possible to kick something (1B) without having an effect on it, but it is not possible to break something (1A) without affecting it.

Although some of these distinctions seem debatable in principle (e.g., does liking have less of an effect than knowing?), each type distinction is based on one or more languages that use case markings to encode that distinction.\(^{27}\) For example, in Tibetan, the patient of a type 1A predicate is always in the absolute case, indicating the highest level of transitivity, whereas the

---

27. Tsunoda’s levels of affectedness are not based on case markings alone. He also claims that the syntactic processes of passivization, antipassivation, reflexivization, and reciprocalization are easily applied to type 1A predicates (in languages that have those processes), but become increasingly awkward or impossible as one moves to less transitive types.
patient of a type 1B predicate is always in either the dative or locative case, indicating a lower level of transitivity.

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>resultative: direct effect on patient that necessarily changes the patient</td>
<td>kill, break, bend</td>
</tr>
<tr>
<td>1B</td>
<td>non-resultative: direct effect on patient, but does not necessarily change the patient</td>
<td>hit, shoot, kick, eat</td>
</tr>
<tr>
<td>2A</td>
<td>perception</td>
<td>hear, see, find</td>
</tr>
<tr>
<td>2B</td>
<td>attempted perception (not necessarily successful)</td>
<td>listen, look</td>
</tr>
<tr>
<td>3</td>
<td>pursuit</td>
<td>search, wait, await</td>
</tr>
<tr>
<td>4</td>
<td>knowledge</td>
<td>know, understand, remember, forget</td>
</tr>
<tr>
<td>5</td>
<td>feeling</td>
<td>love, like, want, need, fear, be angry, be proud, boast</td>
</tr>
<tr>
<td>6</td>
<td>relationship</td>
<td>possess, have, lack, be similar, correspond, consist</td>
</tr>
<tr>
<td>7</td>
<td>ability</td>
<td>be capable, be proficient, be good</td>
</tr>
</tbody>
</table>

Tsunoda’s work complements that of Hopper and Thompson by making more precise the affectedness parameter. His work does not, however, include all aspects of affectedness, such as the proportion of the object that is affected or the intensity of the effect (e.g., ‘break’ vs. ‘smash’). This raises the question of whether the other aspects of affectedness are relevant to whether any language marks a clause as transitive or intransitive.

Tsunoda also disputes Hopper and Thompson’s (1980, 254) assumption that all components of semantic transitivity (table 2) have comparable weight in determining the transitivity of a clause. He points out in table 5 that type 2B verbs (e.g., ‘listen’) are volitional, whereas type 2A verbs (e.g., ‘hear’) are less volitional. Thus, for verbs of perception, reducing the transitivity (by shifting from 2A to 2B) increases the volitionality. The significance of this is
that according to Hopper and Thompson (252), increasing the volitionality should increase the transitivity, so the data behind the distinction between type 2A and 2B in table 5 constitute counterexamples to Hopper and Thompson’s argument that increasing volitionality always increases transitivity. Instead, the effect (if any) of an increase in volitionality on transitivity can be more than outweighed by the corresponding decrease in affectedness.

Based on this type of counterexample and a survey of several languages, Tsunoda argues, pace Hopper and Thompson, that the telicity/aspect and affirmation of the action, as well as the volitionality of the agent are irrelevant to transitivity in many or perhaps most languages (Tsunoda 1999a, 389–90; Tsunoda 1985, 393–5). This leads to his view that “different parameters are manifested in different areas of grammar, and not all the parameters involved are equally relevant to a given morphosyntactic phenomenon” (Tsunoda 1985, 395). In other words, each of the parameters of transitivity cited in table 2 (and tables 4 and 5) might affect the transitivity of various clauses, but they do not necessarily have the same importance as one another, and their relative importance depends upon the language and the morphological or syntactic item that is affected by the level of transitivity.

This fits nicely with the prototypical view of transitivity. When a clause with an intermediate level of transitivity is compared with a prototypical transitive clause in terms of its relevant characteristics (tables 2, 4, and 5), it is similar to it in some ways and dissimilar in other ways.28 The semantic transitivity of a clause cannot be reduced to a single number by counting or

---

28. For example, ‘David left’ is similar to a prototypical transitive clause in terms of the following features: action, telic, perfective, volitional, affirmative, realis, and agentive, but it is dissimilar in terms of having only one participant.
weighing the components. Instead, the semantic transitivity of a clause can only be measured and compared to other clauses as a list of characteristics.

2.2.3 Semantic Transitivity According to Givón

Like Tsunoda, Givón also bases his work on Hopper and Thompson’s. Rather than critiquing or modifying their work, however, Givón sets out to explain semantic transitivity within a larger framework of semantic roles and prototypes. In his 2001 two-volume monograph on syntax, Givón (1:126) defines a prototypical transitive event as one with a deliberate, active agent and a concrete, affected patient involved in a bounded, terminated, fast-changing event in real time. To understand this definition, we must first understand different types of predicates and the distinction between grammatical roles and semantic roles.

In the most general terms, a predicate describes either a state or an action (1:106). If it involves no change over time, it is state, whereas if it describes a change from one state to another over time, then it is an event. A state may be temporary (e.g., ‘she was angry’) or permanent (e.g., ‘she is tall’), or of some intermediate duration. An action may be bounded, meaning that it is construed as a change from a distinct initial state to a distinct terminal state (e.g., ‘the bowling ball fell to the floor’). An unbounded action is described as a process without reference to its temporal boundaries (e.g., ‘the bowling ball rolled’).

A grammatical role is a syntactic slot that a word plays in a clause in relation to the other words in its clause. The main grammatical roles that a participant in a clause can play are subject, direct object, indirect object, and adverb (1:108). Because grammatical roles comprise a
syntactic view of the participants in a clause, our syntactic definition of a transitive clause (‘a clause with a direct object’ §2.1.1) is described in terms of grammatical roles.

*Semantic roles*, on the other hand, describe the function that a participant has in relationship to the specific predicate, taking into account the lexical meaning of the predicate. Table 6 describes prototypes of the main semantic roles (1:107).

**Table 6: Main Semantic Roles According to Givón**

<table>
<thead>
<tr>
<th>Semantic Role</th>
<th>Prototype</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>The animate participant who acts deliberately to initiate the event, and thus bears the responsibility for it</td>
</tr>
<tr>
<td>Patient of Change</td>
<td>A participant that registers a change-of-state as a result of an event</td>
</tr>
<tr>
<td>Patient of State</td>
<td>A participant whose state is described by the predicate</td>
</tr>
<tr>
<td>Experiencer</td>
<td>A conscious participant in the event, who does not deliberately initiate the event and is not visibly changed by the event, but whose conscious participation in the event is in some way integral to it(^{29})</td>
</tr>
<tr>
<td>Instrument</td>
<td>An inanimate participant that is used by the agent to perform the action</td>
</tr>
<tr>
<td>Benefactive</td>
<td>The animate participant for whose benefit the action is performed</td>
</tr>
<tr>
<td>Locative</td>
<td>The concrete, inanimate place where the state is, where the event occurs, or in relation to which some participant is moving</td>
</tr>
<tr>
<td>Associative</td>
<td>An associate of the agent, patient, or experiencer of the event, whose role in the event is similar to the agent, patient, or experiencer, but who is not as important in the event</td>
</tr>
<tr>
<td>Manner</td>
<td>The manner in which an event occurs or in which the agent performs the action</td>
</tr>
</tbody>
</table>

To understand semantic roles and how they relate to grammatical roles, consider the examples in table 7 (1:107-8).

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\(^{29}\) Givón names this role *dative*, following (Fillmore 1968, 387-92). In order to avoid confusion with the use of the word *dative* as a grammatical case that often marks indirect objects, I name this role *experiencer*, following (Longacre 1996, 156-7; Payne 1997, 50). Næss (2007, 185–208) discusses the relationship between the dative case and experiencer participants. For the sake of clarity, I reword Givón’s definition.
### Table 7: Examples of Semantic and Grammatical Roles

<table>
<thead>
<tr>
<th>Clause</th>
<th>Participant</th>
<th>Semantic Role</th>
<th>Grammatical Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary broke John’s arm</td>
<td>Mary</td>
<td>Agent</td>
<td>Subject</td>
</tr>
<tr>
<td>Mary broke <em>John’s arm</em></td>
<td>John’s arm</td>
<td>Patient of change</td>
<td>Direct object</td>
</tr>
<tr>
<td><em>John’s arm</em> broke</td>
<td>John’s arm</td>
<td>Patient of change</td>
<td>Subject</td>
</tr>
<tr>
<td>Mary is strong</td>
<td>Mary</td>
<td>Patient of state</td>
<td>Subject</td>
</tr>
<tr>
<td>Mary knew <em>John</em></td>
<td>John</td>
<td>Patient of state</td>
<td>Direct object</td>
</tr>
<tr>
<td><em>Mary</em> knew John</td>
<td>Mary</td>
<td>Experiencer</td>
<td>Subject</td>
</tr>
<tr>
<td>Mary met <em>John</em></td>
<td>John</td>
<td>Associative</td>
<td>Direct object</td>
</tr>
<tr>
<td>Mary scared <em>John</em></td>
<td>John</td>
<td>Experiencer</td>
<td>Direct object</td>
</tr>
<tr>
<td>Mary apologized to <em>John</em></td>
<td>John</td>
<td>Experiencer</td>
<td>Indirect object</td>
</tr>
<tr>
<td>Mary broke John’s arm with <em>a two-by-four</em></td>
<td><em>a two-by-four</em></td>
<td>Instrument</td>
<td>Adverb</td>
</tr>
<tr>
<td><em>A two-by-four</em> broke John’s arm</td>
<td><em>a two-by-four</em></td>
<td>Instrument</td>
<td>Subject</td>
</tr>
<tr>
<td>Mary called 911 for <em>John</em></td>
<td>John</td>
<td>Benefactive</td>
<td>Adverb</td>
</tr>
<tr>
<td>The ambulance went to <em>the hospital</em></td>
<td>the hospital</td>
<td>Locative</td>
<td>Adverb</td>
</tr>
<tr>
<td>Mary went to the hospital with <em>John</em></td>
<td>John</td>
<td>Associative</td>
<td>Adverb</td>
</tr>
<tr>
<td>They left in <em>a hurry</em></td>
<td>a hurry</td>
<td>Manner</td>
<td>Adverb</td>
</tr>
</tbody>
</table>

There are constraints on which grammatical roles a participant with a given semantic role can play. An agent can only be the subject. A patient can be a subject or direct object. An experiencer can be a subject, direct object, or indirect object.

Returning to table 6, note that the right column is labeled ‘prototype’ rather than ‘definition’, since playing a semantic role is a matter of degree, not binary. For example, in the clause ‘That law came to his rescue, saving his life’, ‘that law’ is not animate and does not act deliberately, so it is not a prototypical agent. Nonetheless, it is portrayed as if it were, so it is still an agent, albeit a less-than-prototypical one. To make this notion of less-than-prototypical

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30. When the participant in the example is the object of a preposition, the grammatical role listed in table 7 is the grammatical role of the prepositional phrase.
agency more precise, Givón (1984–90, 1:107–8, 1:154) defines agency in terms of the five parameters in table 8.

Table 8: Parameters of Agentivity According to Givón

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Highest</th>
<th>Medium</th>
<th>Lower</th>
<th>Lowest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanity</td>
<td>Human</td>
<td>Animate</td>
<td>Inanimate</td>
<td>Abstract</td>
</tr>
<tr>
<td>Causation</td>
<td>Direct cause</td>
<td>Indirect cause</td>
<td>Non-cause</td>
<td></td>
</tr>
<tr>
<td>Volition</td>
<td>Strong intent</td>
<td>Weak intent</td>
<td>Non-voluntary</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Clear control</td>
<td>Weak control</td>
<td>No control</td>
<td></td>
</tr>
<tr>
<td>Saliency</td>
<td>Very obvious/salient</td>
<td>Less obvious/salient</td>
<td>unobvious/nonsalient</td>
<td></td>
</tr>
</tbody>
</table>

With these concepts in mind, we are now ready to return to Givón’s definition of a prototypical transitive event as one with a deliberate, active agent and a concrete, affected patient involved in a bounded, terminated, fast-changing event in real time. To illustrate this, table 9 distinguishes various types of prototypical transitive verbs according to the type of change experienced by the object (1:127-8). Note that in all cases, the subject of the verb is animate, acts deliberately to initiate the event, and bears responsibility for the event, so the subject is an agent. The direct object in each case registers a change of state, so it is a patient of change. And because there is a change from a distinct initial state to a distinct final state that completes the event, the predicate is a bounded, terminated event.

Table 9: Prototypical Transitive Verb Types According to Givón

<table>
<thead>
<tr>
<th>Prototypical Transitive Verb Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creation of an object</td>
<td>He built a house</td>
</tr>
<tr>
<td>Destruction of a previously existing object</td>
<td>They demolished the house</td>
</tr>
<tr>
<td>Change in the object’s physical condition</td>
<td>She cracked the pot</td>
</tr>
<tr>
<td>Change in the object’s surface conditions</td>
<td>They painted the barn</td>
</tr>
<tr>
<td>Change in the object’s internal qualities</td>
<td>He chilled the soup</td>
</tr>
<tr>
<td>Change in the object’s physical location</td>
<td>They moved the barn</td>
</tr>
</tbody>
</table>
These types of prototypical transitive verbs have subtypes with an incorporated manner (e.g., ‘crafted’ = created with care; ‘murdered’ = killed wrongly and with intent, etc.), an incorporated instrument (e.g., ‘drove’ = moved with a car), or an incorporated location (e.g., ‘imprisoned’ = changed location to a prison).

Of course, not all clauses are prototypical transitive clauses. If a clause lacks a deliberate, active agent (as defined in table 8), it has less than prototypical transitivity. The same is true if the patient is not concrete or not affected or if the clause describes something other than a bounded, terminated, fast-changing event in real time. Table 10 gives examples of such less-than-prototypical transitive clauses (1:128-36).
Table 10: Examples of Clauses with Less-than-Prototypical Transitivity

<table>
<thead>
<tr>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>He saw it</td>
<td>The subject is an experiencer, not an agent, because, although it is animate, it does not necessarily intend the event or actively initiate it. The object is not a patient of change because it is not affected by the action.</td>
</tr>
<tr>
<td>They insulted him</td>
<td>The patient is not a prototypical patient of change because it is not visibly affected by the action.</td>
</tr>
<tr>
<td>The offer insulted her</td>
<td>The subject is a less-than-prototypical agent because it is a concept that is personified as if it were animate and acting deliberately.</td>
</tr>
<tr>
<td>A brick smashed the glass</td>
<td>The subject is an instrument, not an agent.</td>
</tr>
<tr>
<td>She approached the house</td>
<td>The object is a locative, not a patient of change.</td>
</tr>
<tr>
<td>He met Sylvia</td>
<td>The object is an associative, not a patient of change.</td>
</tr>
<tr>
<td>They ate</td>
<td>The object is omitted.</td>
</tr>
<tr>
<td>He gave a brief speech</td>
<td>The object is a nominalization of the action of the verb, not a patient. To see this, note that the same meaning can be communicated without an object: ‘He spoke briefly’.</td>
</tr>
<tr>
<td>She has a big house</td>
<td>The verb describes a state rather than an event.</td>
</tr>
</tbody>
</table>

2.2.4 Semantic Transitivity According to Kittilä

In his 2002 dissertation (Kittilä 2002b; cf. Kittilä 2002a), Seppo Kittilä argues that a prototypical transitive event has the features shown in table 11 (51–2, 367–8, 480–1).

31. The distinction between an instrument and an inanimate thing that is personified as an agent is whether the participant is portrayed as if it were acting deliberately, or if it is portrayed as if it were a tool being used by someone. For example, in ‘A brick smashed the window’, brick is naturally construed as an instrument used by an unnamed agent. Chocolate truffle might also be an instrument in ‘After a savory buffet, the chocolate truffle satisfied her sweet tooth’. However, in ‘The chocolate truffle was calling her name, promising to satisfy her sweet tooth’, chocolate truffle is personified as an agent.
### Table 11: Features of a Prototypical Transitive Event According to Kittilä

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agent is referential</td>
<td>The speaker has a specific agent in mind.</td>
</tr>
<tr>
<td>The agent is definite</td>
<td>The speaker expects that the hearer can identify the agent to whom she refers.</td>
</tr>
<tr>
<td>The agent is distinct from the patient</td>
<td>The agent and the patient are different entities. This excludes reflexive events.</td>
</tr>
<tr>
<td>The agent is acting volitionally</td>
<td>The agent is not forced to act, but freely chooses to do so. The agent could have chosen not to act.</td>
</tr>
<tr>
<td>The agent is acting intentionally</td>
<td>The agent intended that action and that patient.</td>
</tr>
<tr>
<td>The agent is in control of the action</td>
<td>The agent controls the event, knows what is happening, and could stop acting.</td>
</tr>
<tr>
<td>The agent is unaffected by the action</td>
<td>The agent is not also a patient of the action.</td>
</tr>
<tr>
<td>The patient is referential</td>
<td>The speaker has a specific patient in mind.</td>
</tr>
<tr>
<td>The patient is definite</td>
<td>The speaker expects that the hearer can identify the patient to whom she refers.</td>
</tr>
<tr>
<td>The patient is concrete</td>
<td>Abstract entities can be changed only metaphorically (e.g., ‘She fought against crime’).</td>
</tr>
<tr>
<td>The patient is distinct from the action</td>
<td>This rules out an object that is the nominalization of the action of the verb (e.g., ‘He gave a speech’).</td>
</tr>
<tr>
<td>The patient is directly affected by the action</td>
<td>The patient is changed by the action directly, not through secondary causes or by non-action.</td>
</tr>
<tr>
<td>The patient is affected in a salient way</td>
<td>The change is significant and can be detected readily and directly. Thus, mental changes are less transitive than physical changes.</td>
</tr>
<tr>
<td>The patient is not volitional</td>
<td>The patient cannot be regarded as participating in the event of her own free will. The patient could not have chosen not to be the patient.</td>
</tr>
<tr>
<td>The patient lacks control</td>
<td>The patient is not able to change or stop the action</td>
</tr>
<tr>
<td>The energy flow of the action is unilateral</td>
<td>The agent acts on the patient, not vice versa. This excludes reciprocal events.</td>
</tr>
<tr>
<td>The action is successfully completed</td>
<td>The action finished and has its intended effect. So imperfective aspect is less transitive than perfective.</td>
</tr>
</tbody>
</table>

---

32. If the meaning can be communicated without an object, then the patient is not distinct from the action (i.e., the object is the nominalization of the verb). For example, ‘He gave a brief speech’ can be rewritten as ‘He spoke briefly’, so the patient is not distinct from the action. But ‘The orchestra played Beethoven’s Ninth Symphony’ cannot be rewritten in the same way, so the patient is distinct from the action. For further discussion of this, see (Longacre 1996, 158-9).
2.2.5 Semantic Transitivity According to Næss

In what is perhaps the most recent monograph on semantic transitivity, Åshild Næss (2007) simplifies matters considerably by defining a prototypical transitive clause as having two participants that are maximally semantically distinct from one another in terms of their roles in the event (30). To be precise, maximal semantic distinction in role requires that they have the contrasting properties of volitionality, instigation, and affectedness that are assigned to agent and patient in table 12.

Table 12: Semantic Roles of Agent and Patient According to Næss

<table>
<thead>
<tr>
<th></th>
<th>Volitional VOL</th>
<th>Instigative INST</th>
<th>Affected AFF</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>+</td>
<td>+</td>
<td>–</td>
<td><em>I deliberately broke the window</em></td>
</tr>
<tr>
<td>Patient</td>
<td>–</td>
<td>–</td>
<td>+</td>
<td><em>I deliberately broke the window</em></td>
</tr>
</tbody>
</table>

Næss (41) defines a participant as volitional (+VOL) “if its involvement in the event in question is partly defined by its being volitional or sentient. This definition is intended to include experiencer arguments of verbs of cognition or perception ... The specific choice of the term ‘volitionality’ is meant to suggest that the exercise of volition in carrying out an event may be seen as the (proto)typical way in which participants involve their cognitive capacity in interacting with an event, even though it is not the only possible way” (41). As a result of this definition, an accidental or negated action that requires the cognitive facilities (e.g., ‘I looked at her accidentally’, ‘I did not look at her’) is still +VOL, whereas an accidental action that does not require cognition (e.g., ‘I accidentally broke the window’) is -VOL.33

33. Fauconnier (2011) disputes the direct connection of volitionality to transitivity. Because her argument and counterproposal are somewhat complicated and do not deal with Næss’ examples of non-ambitransitive verbs such as ‘eat’, this paper omits discussion of Fauconnier’s work.
Næss (41) defines a participant as *instigative* (+INST) if it “act[s] to instigate the experience.” This explicitly requires that the event took place; negated events are -INST.

Næss (41) defines a participant as *affected* (+AFF) if it “in some way undergoes a change of state as a result of the event.” Strictly speaking, this is not a binary function, since the proportion affected is relevant to case marking in some languages (42–3).

In order to better understand a prototypical agent and patient, it is helpful to contrast them with alternatives, as shown in table 13.

<table>
<thead>
<tr>
<th>Table 13: Semantic Roles According to Næss</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Agent</td>
</tr>
<tr>
<td>Affected Agent</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Patient</td>
</tr>
<tr>
<td>Volitional Undergoer</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
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<tr>
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<td>Neutral</td>
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34. Surprisingly, objects that are created through the action of the verb (*effected objects*, e.g., “I baked a cake”) are marked as if they were -AFF. Næss (2007, 103–5, 112–13) explains this as being due to the fact that they do not exist prior to the action of the verb, so technically speaking,
Næss’ approach has several major advantages: It defines participant roles precisely (compare table 13 with table 6) and motivates why those roles, and no others, are relevant categories for the issue of transitivity. It also motivates the definition and cross-linguistic importance of transitive clauses. The root issue is not merely having the agent affect the patient; instead, the root issue is having two maximally distinct participants of a two-participant clause.

Most importantly for our purposes, Næss’ analysis greatly simplifies the wide variety of factors involved in a transitive clause (e.g., tables 2, 5, 8, and 11) by boiling them down to whether the two participants are maximally distinct from their environment and from each other. For example, instead of having a separate parameter for whether the predicate is affirmative or negative, that information is incorporated in the parameters INST and AFF; if an action is negated, then the subject does not instigate it (-INST) and the object is not affected by it (-AFF) (114–18). As another example, indefinite objects are less affected than definite objects because an indefinite object is merely part of a class, and an affect on one member of a class only partially affects the entire class (112). As a final example, imperfective aspect and atelic actions reduce the transitivity of the clause because they reduce the affectedness of the patient (118–19; 135).

Næss’ analysis is also able to explain many of the distinctions between Tsunoda’s verb types (table 5). For example, ‘break’ is more transitive than ‘hit’ because the object is +AFF in the former but may be -AFF in the latter. Similarly ‘hit’ is more transitive than ‘see’ because the

they do not change state as a result of the action of the verb. One would think that they would change from the state of non-existing to the state of existing, but Næss’ data indicate that such a change is not linguistically relevant to transitivity.
subject is -AFF in the former but +AFF in the latter. It can also explain why some languages violate one aspect of Tsunoda’s table: Tsunoda claims that ‘look’ is never more transitive than ‘see’, but in fact, although some languages code ‘see’ as more transitive than ‘look’, other languages code ‘look’ as more transitive than ‘see’ (Næss 2007, 186–96). The explanation for this is that the subject of ‘see’ is -VOL but +AFF, whereas the subject of ‘look’ is +VOL but may be -AFF. Since the subject of a prototypical transitive clause is +VOL -AFF, the two verbs ‘see’ and ‘look’ differ from a prototypical transitive clause in different ways, so we should expect different languages to differ in which of them (if either) is marked as transitive.

2.2.6 Semantic Transitivity and the D Stem

To see the relevance of semantic transitivity to the D stem, note that the factitive approaches to the D stem discussed in §1.2.2 correlate with high semantic transitivity. For example, Goetze and Jenni classify all true D-stem verbs as factitive or resultative. By definition, because factitive and resultative indicate a change in the object, their work classify all true D-stem verbs as prototypical transitive verbs in Tsunoda’s system (type 1A) (§2.2.2). Similarly, Waltke and O’Connor’s description of the D stem as causative with a passive undersubject makes two of Kittilä’s features of a prototypical transitive event the key to the D stem: the patient is not volitional and the patient lacks control (§2.4).

The situation with Kouwenberg’s explanation of the D stem is more complicated, but we are now in a position to understand the role of semantic transitivity in his work. As discussed in §1.2.6, according to Kouwenberg, the D stem began as a form marked for qualitative intensity (e.g., ‘to be/become/make very wide’). Because qualitative intensity increases the affectedness of
the object, it increases the semantic transitivity of the clause, and so the origin of the D stem is associated with high semantic transitivity.

This association of the D stem with high semantic transitivity is the key to Kouwenberg’s explanation for how the D stem became associated with factitive verbal meanings. To get there, Kouwenberg notes that some verbs (alternating-valency verbs)\(^{35}\) can be used either with or without an agent (1997, 242-3). For example, one can say, ‘the glass broke’, or ‘I broke the glass’; the former has no agent, whereas the latter does. Kouwenberg defines a factitive verbal meaning as one that indicates the presence of an agent subject with an alternating-valency verb (1997, 243–4, 2010, 257). Since a factitive meaning adds an agent to a verb that does not require one, it increases the number of participants, which increases the semantic transitivity of the sentence (§2.2.1, etc.). Since the D stem was already associated with an increase in semantic transitivity relative to the G stem because it was marked for verbal intensity, the D stem became preferred for the agentive (factitive, high-semantic-transitivity) meaning (e.g., ‘I broke the glass’; ‘She made it holy’), and the G stem became preferred for the non-agentive (low-semantic-transitivity) meaning (e.g., ‘the glass broke’; ‘it is holy’).

Note the key role that semantic transitivity plays in this explanation: It is true that forming a factitive meaning by adding an agent to an alternating-valency verb makes it syntactically transitive (e.g., ‘the glass broke’ → ‘I broke the glass’). Syntactic transitivity, however, is not affected by qualitative intensity, so syntactic transitivity does not provide the needed link between qualitative intensity and a factitive meaning. That link is provided by

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35. Kouwenberg calls these verbs process verbs in his 2010 monograph (2010, 256-7), but we avoid that term here because we use it with a different meaning in chapter 4.
semantic transitivity, because qualitative intensity and a factitive meaning both increase semantic transitivity. Semantic transitivity thus provides Kouwenberg’s answer to Bauer and Leander’s question (§1.2.1) about how an intensive stem came to have a causative meaning.

This definition of factitive as adding an agent to an alternating-valency verb raises the question of what other categories of verbs exist, and how verbs of those types are related to the D stem.

2.3 Semantic Categories of Verbs

2.3.1 Action vs. Alternating-Valency and Agentive vs. Patientive

As discussed in §2.2.6, Kouwenberg defines a factitive meaning as an agent-requiring meaning of an alternating-valency verb. But not all verbs are alternating-valency verbs; other verbs are action verbs (2010, 256-7).

Action verbs refer to events that by their very meaning require an agent (e.g., ‘he walked’, ‘she ate’). Because an action verb intrinsically has an agent, and because an agent is always the subject (§2.2.3), adding an additional agent to an action verb entails the creation of an additional action for the additional agent to be the subject of it. This is done by forming a causative. For example, the sentence ‘he walked’ has one action ‘walked’ and one agent ‘he’ that is the subject of that action. The causative sentence ‘she caused him to walk’ has an additional action ‘caused’ and an additional agent ‘she’ that is the subject of that action. In the causative sentence ‘she caused him to walk’, the original agent ‘he’ is now an undersubject; it is the subject of the embedded original action ‘walk’ and the object of the action ‘caused’.

46
In contrast with action verbs, *alternating-valency verbs* refer to events that can occur without an agent (e.g., ‘the glass broke’). Adding an agent to an alternating-valency verb that lacked an agent does not require that there be two agents, and hence it does not require a second action. Instead, it indicates that there is an agent involved in a process that can occur without an agent. In Kouwenberg’s nomenclature, such a verbal meaning is *factive* (e.g., ‘The glass broke’ becomes ‘I broke the glass’, and ‘The wall is strong’ becomes ‘They strengthened the wall’).

Kouwenberg thus distinguishes between factitive and causative: A *factive* is an alternating-valency verb with an agent.36 A *causative* is an action verb with an additional agent.

According to Kouwenberg, the significance of this distinction between alternating-valency verbs and action verbs is that the D stem in Akkadian can add an agent to alternating-valency verbs, forming a factitive, but it does not normally add an agent to action verbs, so it rarely forms a causative.37 That is Kouwenberg’s explanation for why some verbs (alternating-valency verbs) use the D stem to add an agent, and why other verbs (action verbs) use the H stem to add an agent.

We can, however, define these categories more precisely by using the distinction between grammatical roles and semantic roles in §2.2.3 and the definitions of semantic roles in table 6. We can also clarify the categories by renaming them: A *patientive verb* is one that under normal

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36. Note that Kouwenberg’s definition of factitive includes both the factitive and the resultative meanings as defined by Jenni in §1.2.2. See later in the current section for further discussion.

37. This is the main application of Kouwenberg’s fundamental rule that the D stem can add an agent relative to the G stem only if the G stem has low semantic transitivity (1997, 98–100). Kouwenberg cites a few exceptions, mostly with a phonological explanation (1997, 248–9).
interpretation can be used with a patient (semantic role) as its subject (grammatical role). An *agentive verb* (Kouwenberg’s *action verb*) is one that requires (under normal interpretation) an agent or experiencer (semantic role) as its subject (grammatical role). All verbs are either agentive or patientive. Using these definitions, *to break, to be strong*, and *to fall* are all patientive verbs because they can have a patient subject (‘John’s arm broke’, ‘Mary is strong’, and ‘The tree fell’), whereas *to run, to chase*, and *to know* are agentive verbs because under normal interpretation, the subject must be an agent or an experiencer (‘John ran’, ‘Mary chased John’, and ‘Mary knew John’).

Thus, following Kouwenberg, we define *factitive* as the use of an agent subject with a patientive verb and *causative* as adding an additional agent to an agentive verb. Under these definitions, ‘Mary broke John’s arm’, ‘Sue strengthened Mary’, and ‘Mary felled the tree’ are all factitive because they are patientive verbs with an agent subject. Conversely, ‘Sue made Mary run’, ‘Sue had Mary chase John’ and ‘Sue had Mary get to know John’ all are causative because they add an additional agent to an agentive verb.

A significant advantage of this approach is that it gives a linguistic explanation that unifies Jenni’s two functions of the D stem: factitive and resultative. Recall from section 1.2.2 that Jenni said that for intransitive G-stem verbs, the D stem is factitive (bringing the object into a state), whereas for transitive G-stem verbs, the D stem is resultative (causing the object to be in the state that results from the action). Under Kouwenberg’s definition of factitive, all of these

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38. Patientive verbs thus include Kouwenberg’s alternating-valency verbs as well as any verbs that never have an agentive meaning (a possible type of verb that Kouwenberg does not address in this context).
verbs are factitive. Another advantage of this approach is that it defines factitive in a way that minimizes the role of reader-dependent aesthetic judgments in the decision about whether a particular occurrence of a verb is factitive or not: if the verb does not require an agent subject but has one in this occurrence, then the meaning is factitive.

Finally, Kouwenberg’s approach suggests that table 1 should be relabeled as in table 14, but only for certain verbs: the D, Dp, and tD stems of patientive verbs and the H and Hp stems of agentive verbs.

<table>
<thead>
<tr>
<th>Table 14: The Main Stems of Biblical Hebrew with Kouwenberg’s Column Labels</th>
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<tbody>
<tr>
<td><strong>Simple</strong></td>
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<tr>
<td>Active voice</td>
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<tr>
<td>Passive voice</td>
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<td>Middle/Reflexive voice</td>
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Note that table 14 does not explain the meaning in the D, Dp, and tD stems for verbs that are agentive in the G stem or the meaning in the H and Hp stems for verbs that are patientive in the G stem. Thus his approach only partially systematizes the Hebrew verbal system. The reasons for this and the significance of it are discussed in §2.5.2, §7.3, and §7.4.

### 2.3.2 Fientive vs. Stative

Instead of being classified as agentive or patientive, Hebrew verbs are often classified as being either fientive or stative (Waltke and O’Connor 1990, 348-9, 363-4; Arnold and Choi 2003, 38; van der Merwe et al. 1999, 76-7; Williams and Beckman 2007, 56-7). A **fientive verb** refers

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39. In Kouwenberg’s system, **resultative** can be defined as a subcategory of factitive: A verbal meaning is resultative if it is factitive and the G-stem (patientive) verb is fientive (§2.3.2).
to an activity (e.g., ‘to run’, ‘to build’), whereas a **stative verb** describes a characteristic, quality, circumstance, or state (e.g., ‘to be high’). To relate this to the preceding section (§2.3.1), note that by definition (§2.2.3), the subject of a stative verb has the grammatical role *patient*, and a verb with a *patient* subject is stative. Therefore a **patientive verb** is a verb that can be stative. An **agentive verb** is one that is never stative (and hence is always fientive). Note that the terms **fientive** and **stative** classify a particular use of a verb, whereas **patientive** and **agentive** classify a verb itself, taking all of its uses into account.

The significance of this distinction between fientive and stative verbs for the D stem is that verbs that can be stative (and hence are patientive) in the G stem are usually factitive in the D stem, and verbs that are always fientive (and hence agentive) in the G stem usually have some meaning other than factitive in the D stem, if they occur in the D stem at all.

This division between fientive and stative verbs is often correlated with **stem-vowel** patterns in the G stem. In biblical Hebrew, fientive verbs often have stem vowel ŏ (Holem) in the G-stem prefix conjugation (e.g., יִשְׁמֹר יִשְׁמֹר ‘he will guard’), whereas stative verbs often

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40. Joüon and Muraoka (2003, 126) call them **action verbs**, but I avoid that name because it is used for the category that contrasts with alternating-valency verbs in §2.3.1. Joüon and Muraoka (2006, 115-16) call them **active verbs**, but I avoid that name because it is used for the category that contrasts with middle-voice verbs in §2.3.3.

41. The **stem vowel** (abbreviated V₃), also called the **theme vowel**, is the vowel in front of the third root consonant. For example, in the verb יִשְׁמֹר יִשְׁמֹר (qātal), V₃ is the vowel a (Pathach). For more details, see the definition in the glossary.

42. There are corresponding stem vowel patterns in the G stem of all Semitic languages. In West Semitic languages (such as Hebrew), the verbs are classified according to their vowels in the suffix conjugation (the **perfect**) and the prefix conjugation (the **imperfect**). In Akkadian (the main example of East Semitic), the contrast is between the durative and the preterite (Huehnergard 2002, 110-19; cf. Huehnergard 2000, 18-19, 96-7).
have stem vowel \( a \) (Pathach) there instead (e.g., יִכְבַּד \( yikbad \) ‘he will be heavy’). There are, however, two difficulties with this correlation between meaning and the stem vowel.

The first difficulty is that there are more than two stem-vowel patterns. By looking at the stem vowels in both the suffix conjugation and the prefix conjugation of the G stem, Huehnergard notes six different stem-vowel patterns in biblical Hebrew and argues that they developed from five different stem-vowel patterns in Proto-Semitic (2002, 114-19). Waltke and O’Connor (1990, 367-71) note the same six stem-vowel patterns in biblical Hebrew, but trace them back to three stem-vowel patterns in Proto-West-Semitic: one for fientive verbs, one for statives designating a temporary state, and one for statives designating a lasting state. Either way, dividing Hebrew verbs into two stem-vowel categories and corresponding meaning categories (rather than none or three or five or six) must be justified rather than assumed.

The second difficulty is that even if one groups the stem-vowel patterns into two groups: fientive and static, there are a significant number of exceptions to the correlation. Numerous verbs with a fientive meaning have ‘stative’ stem vowels, and many verbs with a stative meaning have ‘fientive’ stem vowels. The latter can be explained as paradigm leveling to the dominant pattern, since most verbs are fientive. Some of the former can be explained phonologically. But

\[\text{43. This is an oversimplification. See static stem vowel in the glossary for details.}\]

\[\text{44. One might argue that stem vowels have been lexicalized for all verbs and never correlate with meaning. It seems hard to dispute that the stem vowel has been lexicalized for at least some verbs, given the evidence for paradigm leveling (such as differences between contextual and pausal forms; Huehnergard 2002, 114) and the fact that certain root consonants affect stem vowels (see note 45).}\]

\[\text{45. For example, verbs with a guttural for the second or third root consonant tend to have stem vowel \( a \) in the prefix conjugation of the G stem, even if their meaning is fientive (e.g., \( yi`ptah \) הָיַ֫ת, ‘he will open’). For more details, see static stem vowel in the glossary.}\]
there remain verbs like בָּלֵשׁ ‘to learn’, נָלֵז ‘to flow’, קָרוּב ‘to approach’, לְבַשׁ ‘to lie down’, and דַּבְּךָ ‘to cling’, which follow the paradigm of stative verbs but have a fictive meaning (Joosten 1998, 207-8). To resolve this issue, several scholars have argued that the semantic distinction that correlates with the vowel distinction between the two groups of paradigms is not fictive vs. stative; instead, it is active voice vs. middle voice (Joosten 1998; Cohen 1955; Rundgren 1959, 101, 118-119; Kuryłowicz 1956, 68, 71; Cohen 1984, 143-50).

2.3.3 Active vs. Middle

Joosten (1998, 207) defines active voice and middle voice as follows: “active verbs denote a process taking its point of departure in the subject and accomplished outside of it, whereas middle verbs describe a process taking place within the subject: the subject is involved in the process.” For active-voice verbs, “the process is accomplished outside the subject: the subject is an external agent, while it is the object which is affected by the action” (1998, 212). Whereas for middle-voice verbs, “the process is situated within the subject, thus affecting it directly. ... Even where a direct object is added, however, the subject continues to be the real locus of the action” (1998, 212). Joosten (1998, 208) indicates six categories of middle-voice meanings: ❶ qualities (e.g., גדל ‘to be great/grow’), ❷ motion or change of position (e.g., נָלֵז ‘to flow’), ❸ inner activity or state (e.g., לָמַד ‘to learn’) ❹ physical condition or process (e.g., גָע ‘to toil’), ❺ covering (e.g., לְבַשׁ ‘to wear/put on’), and ❻ miscellaneous (e.g., שָאָל ‘to ask’, שְכָנ ‘to dwell’).
Following this definition, Joosten claims that all verbs in biblical Hebrew that are spelled with a ‘stative’ (or ‘middle’) stem vowel either have middle meaning, or else their stem vowel can be explained phonologically. Unfortunately, there are four difficulties with this claim.

The first difficulty was already noted (§2.3.2), namely that there are more than two stem-vowel patterns in biblical Hebrew. This suggests the possibility that Joosten’s lumping of all verbs into two categories may not reflect the natural categories of the language.

Even if we take Joosten’s approach on its own terms, however, we encounter a second difficulty: contrary to his claim, there are verbs that have a stative/middle stem vowel (with no phonological explanation for it) and a fientive/active meaning in the G-stem. Joosten himself mentions חצב ‘to hew out’ as an exception (1998, 208n32). Another exception that he does not mention is קוש ‘to set a trap’. The meaning is active under Joosten’s definition, since the process is accomplished outside of the subject and the focus of the action is its effect on the object (any effect on the subject is peripheral). Yet its stem vowel is stative/middle in Jeremiah 50:24.

The third difficulty is that Joosten inconsistently applies his definitions of active and middle voice when classifying Hebrew verbs. For example, Joosten states that “verbs of motion or of change of position” are middle voice and lists the examples נחל ‘to flow’, קרב ‘to approach’, and רכוב ‘to lie down’ as middle voice (1998, 208). This fits his definition of middle voice, since the subject is the one affected by the action. The inconsistency is that he lists דלג ‘to leap’, הלך ‘to ride’. It consistently uses stative/middle stem vowels. It seems to be active in meaning, since the process is accomplished outside of the subject. On the other hand, Joosten might argue that the meaning is middle, since the focus is the effect on the subject (the rider), not the effect on the thing that is ridden.

46. A common but debatable exception is רכוב ‘to ride’. It consistently uses stative/middle stem vowels. It seems to be active in meaning, since the process is accomplished outside of the subject. On the other hand, Joosten might argue that the meaning is middle, since the focus is the effect on the subject (the rider), not the effect on the thing that is ridden.
go’, נתר ‘to leap’, and רקד ‘to skip’ as active (1998, 222), even though they are verbs of motion, and even though the subject is the one affected by the action. And then in the appendix of his paper, he states that “the meaning of the verb [نسيים] is not incompatible with a middle nuance” (1998, 229).

This inconsistency points to the fourth, underlying difficulty: applying Joosten’s definitions of active and middle voice to a particular verb often requires knowledge of how the speaker thought about the action of the verb. For example, when someone walks (הלך), is the verb active because it is accomplished outside the subject, or is it middle because the effect on the subject is in focus? Joosten seems unable to decide whether הולחנ is active voice or middle voice (1998, 208, 222, 229). To give another example, when Rebekah rode a camel (Genesis 24:61), is the verb רכב middle voice since the focus is on the effect on Rebekah not the effect on the camel? Or is the verb active voice since the process of motion is accomplished by the camel outside of Rebekah? Joosten’s system requires that it be middle, due to the stem vowel. But one can justify either answer. This level of flexibility in applying the definitions of active and middle, along with the fact that he has a ‘miscellaneous’ category of middle-voice verbs (1998, 208), may allow his system to accommodate a wide variety of verbs, but only at the expense of reducing the confirmatory power of the data.47

Nevertheless, as discussed in §1.2.6, this distinction between active and middle-voice verbs is critical to Joosten’s explanation of the D stem. Joosten argued that the correlation

47. Furthermore, because verbs with a middle meaning but an active paradigm can always be explained as leveling to the predominant pattern, there is no way to test whether Joosten’s definition of a middle-voice meaning is too broad. That part of his hypothesis is unfalsifiable.
between voice and stem vowel in biblical Hebrew occurs in other Semitic languages, and that this consistent correlation indicates that there were separate active-voice and middle-voice paradigms of the G stem in proto-Hebrew or proto-Semitic (Joosten 1998, 206-16; but see Waltke and O'Connor 1990, 367-71; Huehnergard 2002, 110-19). He then hypothesized that the D stem originally indicated the intensive of either the active or the middle-voice G stem. When voice became fixed for each verb in the G stem, the meaning of the D stem shifted for some verbs, depending upon which G-stem voice became fixed for that particular word, and this explains the variety of D-stem meanings and their varied relationship to the G stem. For a more thorough explanation of how Joosten’s hypothesis depends upon the concept of voice, see §1.2.6.

In addition to or instead of these distinctions between verb types (action vs. alternating valency, agentive vs. patientive, fientive vs. stative, and active vs. middle), several of the explanations of the Semitic D stem discussed in §1.2 rely explicitly (Fehri 2003; Kaufman 1996; Greenberg 1991; Kouwenberg 1997, 2010) or implicitly (Gesenius et al. 1910; Edzard 1965; Weingreen 1983) upon the concept of verbal plurality, so to that concept we now turn.

2.4 Verbal Plurality

2.4.1 Verbal Plurality Theory

In his study of Chitimacha, a Native American language, Swadish (1946, 325; cf. Greenberg 1991, 577) noted that there are verbal forms that are marked for verbal plurality (he called it occurrence number), which he described as repetition of an action over time, dispersion of an action over space, action by many subjects, or action on many objects. Similar patterns of verbal plurality have been discovered in over forty languages worldwide (Durie 1986, 356).
Although the last two items (action by many subjects or action on many objects) sound like simply verbal agreement with the subject or the object, verbal plurality can and should be distinguished from verbal agreement (Durie 1986). 48

In his 1968 monograph on verbal plurality, Dressler divides verbal plurality into four categories, each with numerous subcategories: iterative (repeating an action), distributive (an action performed by multiple subjects, a state that applies to multiple subjects, or an action done to multiple objects or in multiple steps or in a variety of places), continuous (like iterative, but with the repetition blending into an ongoing or customary action), and intensive (drawing attention to the certainty of or degree to which an action is done or a state exists). 49

48. Durie points to the following phenomena in various languages as evidence that verbal plurality is distinct from verbal agreement: (1) natural ergativity, meaning that the same pluralic forms are used with a plural subject of an intransitive verb and with the plural object of a transitive verb, (2) when the number (from a semantic standpoint) differs from the morphological number, verbal plurality follows the semantic number whereas verbal agreement normally follows the morphological number, (3) verbal plurality distinguishes features (e.g., dual) that are not marked in the morphology of the nouns, whereas verbal agreement is restricted to agreement between features that are marked in the morphology of both the noun and the verb, (4) verbal plurality occurs in forms that omit verbal agreement, such as infinitives, (5) morphological patterns of verbal plurality are carried over into nouns, adjectives, and adverbs that are derived from verbs, whereas morphological patterns of verbal agreement are not, and (6) in many languages, verbal plurality is marked by changes to the stem itself (e.g., reduplication), whereas verbal agreement is marked by affixes that are external to the stem.

49. Dressler divides these four categories of verbal plurality into numerous subcategories. Iterative nuances include discontinuative (repeated action with a pause in between, e.g., ‘I sold several things on several occasions’), repetitive (repeated action a countable number of times, where the breaks are not emphasized, e.g., ‘she drew repeatedly’), frequentative (frequent repetition, e.g., ‘it rises again and again’), conative (repeated attempts, e.g., ‘fluttered’ as a way of saying ‘tried to fly’), and alternative (repeated opposite actions, e.g., ‘she was going in and out’). Distributive nuances include multiple subjects (acting at the same time), successive action (multiple subjects acting one after another, e.g., ‘one after another, they got up’), distributive over multiple objects (e.g., ‘pick many herbs’), reciprocal, composite (a single action that is composed of many separate steps, e.g., ‘he built a house’), distributed in space (e.g., ‘be dry here
Dressler justifies grouping these four categories and their numerous subcategories together as verbal plurality on the basis of the fact that in language after language, any morphological feature that indicates one type of verbal plurality will also indicate other types of verbal plurality; a morphological feature rarely if ever indicates only a single type of verbal plurality. For example, Dressler points to Hockett’s study of verbs in Potowatomi (an Oklahoma Algonquin language), where Hockett describes reduplication of the root as “the chameleon preverb” that can indicate “iteration, intensitivity, continuity, habitualness, or (at least in one case) inception” (Hockett 1948, 141). Dressler argues that this ambiguity or polysemy is a fundamental feature (“grundsätzliche Mehrdeutigkeit”) of verbal plurality because a verb interacts with multiple parts of the sentence and can indicate strengthening or distribution in both time and space, bringing a great wealth of possible nuances (Dressler 1968, 59). As a result of the verb interacting with multiple parts of the sentence, an essential feature of verbal plurality is

and there’ as opposed to ‘be dry’), diversative (the verbal action causes something to be distributed in space, e.g., ‘to throw in various directions’ as opposed to ‘to throw’), and ambulative (the verbal action affects different points in space, e.g., ‘she goes along holding it’ as opposed to ‘she holds it’). Continuous nuances include customary (e.g., ‘one who obeys’), durative (more frequent than frequentative or customary, to the point that the individual instances may no longer be countable, e.g., ‘I kept on shoving everything into the sack’), and continuative (stressing the unceasing nature of the act, e.g., ‘he walks on and on’). Intensive nuances include intensive (often through repetition of action or through a metaphorical set of agents, e.g., ‘he eats like a whole pack of wolves’, but sometimes without repetition or metaphorical agents, such as ‘to give freely’ as opposed to ‘to give’), emphatic (e.g., ‘we are very, very cold’), augmentative (e.g., ‘we paddled vigorously’), completive (drawing attention to the action fully reaching its end point, e.g., ‘you disappeared completely’ as opposed to ‘you disappeared’), accelerative (doing something quickly, e.g., ‘to push rapidly’ as opposed to ‘to push’), retardive (doing something slowly, e.g., ‘to eat slowly’ as opposed to ‘to eat’), plural of majesty (to do something in a solemn manner), exaggerative (expressing a greater degree of the action than actually happened), pejorative (emphasizing that something is very bad, e.g., ‘to be here in a devilishly bad place’ as opposed to ‘to be here’), asseverative (strongly asserting the certainty of something, e.g., ‘I did do it’ as opposed to ‘I did it’), attenuative (e.g., ‘to nod slightly’), and excellence (e.g., ‘to cry out’ as opposed to ‘to say’).
that it sets a plural meaning for the entire sentence, and even beyond the sentence, rather than just for the verb (Dressler 1968, 92-3; cf. Cusic 1981). The term ‘verbal plurality’ thus refers to verbal morphology that is marked for plurality of the sentence rather than marked for plurality of the verbal action alone.

2.4.2 Verbal Plurality and the D Stem

On the basis of this fundamental polysemy of verbal plurality, Kouwenberg argues (1997, 46) that it would be linguistically naive to argue on semantic grounds that the D stem has multiple origins (e.g., that the co-occurrence of intensive and frequentative meanings in the Semitic D stem indicates that the D stem was originally separate intensive and frequentative forms that later fell together). This seems to be correct: Since the morphological processes that cause a verb form to have multiple origins (by two forms falling together morphologically) are by definition independent in unrelated languages, a cross-linguistic pattern of those meanings co-occurring suggests that their co-occurrence is due to semantic reasons rather than due to multiple forms falling together morphologically.

This argument, however, only applies to verbal meanings for which there is a cross-linguistic pattern of those meanings co-occurring. Since causative (or factitive) is not part of Dressler’s (1968) cross-linguistic pattern of verbal plurality, Kouwenberg (1997, 46) is wrong to use Dressler’s data against Goetze’s argument (see §1.2.2) that the so-called ‘cursive’ D stem (a type of verbal plurality) has a separate origin from the factitive D stem. To make that argument, one needs to show a cross-linguistic pattern of verbal plurality and causativity co-occurring in
verb forms. As we will see later (§2.5.3), there is evidence of such a pattern, so Kouwenberg’s argument against Goetze is correct even though he bases it on inadequate data.

Kouwenberg also argues (1997, 46) that it is incorrect to accept one type of verbal plurality (e.g., frequentative action) as a meaning of the Semitic D stem while rejecting a priori the possibility of other types of verbal plurality (e.g., verbal intensity) in the D stem.50 This argument is valid, but one must not extend it beyond its limits: Even if one were to grant that verb forms that express any type of verbal plurality always express multiple types of verbal plurality, as Dressler’s data seems to suggest, it would not follow that a particular verb form must express every possible type of verbal plurality. Indeed, Dressler suggests the opposite, in that no verb form is used as an example of every subcategory.49 Furthermore several of Dressler’s verb forms are omitted from certain categories altogether. For example, Dressler lists the Slovak frequentative verb form as having distributive (67-70, 72) and continual (75) nuances, but not iterative or intensive. Similarly, he lists the Winnebago frequentative suffixes as having intensive (64) and continual (74) nuances, but not distributive. This is an argument from silence, but it suggests that we should not assume that a verb form that indicates one type of verbal plurality necessarily can indicate all types of verbal plurality.

Comparing Dressler’s description of verbal plurality with the descriptions of the D stem given in §1.2, we see that verbal plurality unifies some of the meanings that have been attributed to the D stem, but not all of them. In particular, it unifies Gesenius’ intensive and iterative

50. This does not, however, mean that any form that indicates verbal plurality is able to express every type of verbal plurality for every verb. For example, Kouwenberg argues that the D-stem meaning of intensive action is limited to certain verbs in Akkadian (1997, 175-9, cf. 128-30).
functions, but not his causative, declarative, or denominal (1910, 141). Dressler’s discussion of verbal plurality also gives cross-linguistic support for Weingreen’s (1983) category of the extensive meaning of the D stem, but not Weingreen’s unification of extensive and factitive meanings. Kouwenberg draws upon Dressler’s concept of verbal plurality to argue that the D stem can indicate plurality of the direct object, or of the subject, or of the indirect object, or of the adjunct accusative, or of the action itself (Kouwenberg 1997, 117-75). Kouwenberg does not, however, argue that a factitive meaning is a type of verbal plurality. Indeed, Kaufman (1996, 280-2) and Greenberg (1991) assert that a factitive meaning is not a kind of verbal plurality.

The contrary position is taken by Fehri (2003), who argues on a theoretical basis that causative and factitive meanings are a type of verbal plurality (§1.2.1). The fact that those meanings are not included in Dressler’s cross-linguistic study raises the question of why Dressler did not note a factitive meaning, if a factitive meaning is an expression of verbal plurality, as Fehri claims on theoretical grounds. Since Dressler does not show cross-linguistic support for Fehri’s inclusion of factitive meanings under verbal plurality, the question remains whether there is cross-linguistic support (outside of the Semitic languages) for such a connection. This topic will be resumed in §2.5.3, where we see cross-linguistic evidence that intensity and a factitive meaning are connected.

51. Kaufman and Greenberg use the term plurative rather than verbal plurality. As a side note, Kaufman (1996, 280-2) and Greenberg (1991) describe the D stem as being plurative for fientive verbs, meaning that it indicates a plural object for verbs with a direct object and repeated action for verbs without a direct object. These two meanings are a subset of verbal plurality, as described by Dressler, so Kaufman’s and Greenberg’s unification of plural direct object with repeated action fits within a cross-linguistic pattern. The fact that their two meanings are a small subset of Dressler’s categories (see note 49) suggests that one should check if the biblical Hebrew D stem is used to indicate other types of verbal plurality as well, as we do in §6.3.
Kouwenberg also unifies verbal plurality with a factitive meaning (§1.2.6), but he does so differently than Fehri. Whereas Fehri argues synchronically that a factitive meaning is a type of verbal plurality, Kouwenberg (1997, 435–7) argues diachronically that D stem verbs were originally formed from adjectives that were marked for intensity. Since intensity is a type of verbal plurality (§2.4.1), over time, the D stem broadened to include other types of verbal plurality, such as iterative action. Similarly, since verbal intensity increases the affectedness of the object and thus the semantic transitivity of the verb, over time the D stem broadened to include other types of high semantic transitivity, such as a factitive meaning (§2.2).

In fact, this reconstruction has even more explanatory power than Kouwenberg states. Recall that Dressler’s categories of verbal plurality (§2.4.1) include iterative, distributive, and continuous actions as well as intensive ones. Comparing this to Hopper and Thompson’s list of factors that contribute to high semantic transitivity (table 2 in §2.2), we see that although intensive verbal plurality increases semantic transitivity by increasing the affectedness of the object, iterative and continuous verbal plurality decrease semantic transitivity because they are intrinsically imperfective and atelic (cf. Næss 2007, 135).52 This could explain why D stem verbs can be iterative or factitive but never an iterative factitive (e.g., ‘to widen repeatedly’); the decrease in semantic transitivity from iterative action weakens the association with high transitivity that is needed for the development of a factitive meaning.

52. Because iterative, distributive, and continuous verbal plurality correlate with low semantic transitivity, whereas intensity correlates with high semantic transitivity, Kouwenberg’s interchangeable use of the terms ‘plurality’ and ‘intensity’ is potentially misleading.
The broadening of the D stem from verbal intensity to other forms of verbal plurality (e.g., iterative) for some verbs and the broadening to other forms of high semantic transitivity (e.g., factitive) for other verbs are both types of grammaticalization.

2.5 Grammaticalization

2.5.1 Grammaticalization Theory

Grammaticalization is “the change whereby lexical items and constructions come in certain linguistic contexts to lose their lexical meaning and serve grammatical functions, or the change whereby a grammatical item develops a new grammatical function” (Rubin 2005, 2, italics in original; cf. Kuryłowicz 1965, 69; Hopper and Traugott 2003, xv; Brinton and Traugott 2005, 99). In other words, content words like dog or run become abstract or functional words like will or to or not and then continue to develop new grammatical functions (cf. Brinton and Traugott 2005, 11). For example, in French, the word pas used to be exclusively a content word, meaning ‘a step’. However, over time, it has gained the grammatical meaning ‘not’.

The grammaticalization process for pas was as follows (Rubin 2005, 2-3):

1. Before grammaticalization, pas was optionally used with verbs of motion that were negated by ne to indicate the complete absence of motion. Je ne vais (pas) ‘I don’t go (a step)’.
2. When used in the context of negated motion verbs, pas was reanalyzed as a negation, without the content meaning of ‘a step’. Je ne vais pas ‘I don’t go’. This reanalysis from a content word (a step) to a grammatical word (not) is a type of grammaticalization.
3. Since pas was now seen in negated contexts as meaning ‘not’ rather than ‘a step’, pas came to be used in negated contexts with non-motion verbs (e.g., Je ne sais pas ‘I don’t know’). This extension of a grammatical word from a
Specialized context to general contexts through analogy is also a type of grammaticalization. In contemporary spoken French, *pas* has been reanalyzed as indicating negation by itself, in a context that has no other markers of negation. *J'sais pas* ‘I don’t know’ and *pas encore* ‘not yet’. This reanalysis is also a type of grammaticalization.

Grammaticalization also operates on morphemes – not just independent words – and includes an increase in the range of a morpheme that is already grammatical. For example, the Indo-European accusative case originally indicated a direction (e.g., Latin *Romam ire* ‘to go to Rome’), but through grammaticalization, it came to indicate a direct object (e.g., Latin *diligere Romam* ‘to love Rome’) (Kouwenberg 1997, 27-8; Kurył owicz 1965, 65-7). The fact that grammaticalization operates on morphological markers is important because it is far from clear that the distinctive morphology of the D stem (the doubling of the second root consonant) comes from the assimilation of an independent word (Ryder 1974, 164-5; cf. Hopper and Traugott 2003, 132; Brinton and Traugott 2005, 99n8). Since grammaticalization operates on morphemes, if the D stem were to gain a new grammatical meaning, that would be a type of grammaticalization.

The gain of a grammatical meaning for a word through grammaticalization does not, however, eliminate all previous meanings of that word. For example, in the case of *pas*, although it has become the grammatical word ‘not’ through grammaticalization, it can still be used as a content word, meaning ‘a step’. Similarly, although the accusative case mainly indicates a direct

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53. “Grammaticalization consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status, e.g. from a derivative formant to an inflectional one” (Kuryłowicz 1965, 69). For an example of the application of grammaticalization to a morpheme that cannot come from a lexical source, see the discussion of reduplication in (Bybee et al. 1994, 166-74).
object in Latin (e.g., *diligere Romam* ‘to love Rome’), it still occasionally is used for a direction (e.g., *Romam ire* ‘to go to Rome’).\(^\text{54}\) This persistence of older meanings (e.g., ‘a step’) alongside newer meanings (e.g., ‘not’) for a form that has undergone grammaticalization is what Hopper and Traugott call *layering* (Hopper and Traugott 2003, 124-6; cf. Cook 2001, 119-22; Andrason 2011, 28-9; Bybee et al. 1994, 15-19; Operstein 2014, 104-5).\(^\text{55}\)

Cross-linguistically, there are certain types of words and morphemes that tend to change over time so that they perform certain grammatical functions (Rubin 2005, 64; Cook 2001, 23-4; Hopper and Traugott 2003, 6-7; Bybee et al. 1994, 14-15). For example, definite articles usually come from the grammaticalization of demonstratives (Lyons 1999, 331-4; cf. Rubin 2005, 65-90) and it is “extremely common” for present tense markers to arise from the grammaticalization of a locative construction (Rubin 2005, 151). Similarly, forms that express the perfect tense tend to shift over time to a generalized past and then become the normal form for past-tense narrative (Kuryłowicz 1975, 106). These cross-linguistically attested patterns are called *paths* or *clines*. The possible significance for the D-stem of recurring patterns of grammaticalization will be discussed in §2.5.3.

An important, but controversial, feature of grammaticalization is *unidirectionality*: grammaticalization is common, but the reverse process is rarer. As stated in the preceding paragraph, there are several cross-linguistically common grammaticalization paths along which

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\(^{54}\) The preposition *ad* is normally used for a direction (*ad Romam ire* ‘to go to Rome’), but the preposition is occasionally omitted (*Romam ire*), with the accusative case alone as the indicator of direction.

\(^{55}\) Be aware that some authors use the term *layering* to refer to multiple forms expressing the same meaning (Cook 2001, 119-20; Bybee et al. 1994, 21-2).
certain types of lexical items tend to turn into certain types of grammatical markers. Examples of the reverse type of change, wherein a grammatical marker gains semantic content, are less common and even more rarely attested cross-linguistically (Hopper and Traugott 2003, 99-139). Nevertheless, the existence of reverse examples makes the unidirectionality hypothesis controversial (Norde 2001; Janda 2001). Indeed, the entire concept of grammaticalization as a linguistic process is controversial (e.g., Campbell and Janda 2001; Campbell 2001; Joseph 2001; Janda 2001; Newmeyer 2001).

2.5.2 Grammaticalization and the Semitic D Stem

Kouwenberg (2010, 282-7, 1997, 445-50) argues that the D stem originally indicated intensity, which he characterizes as a lexical meaning, since it affects the meaning but not the grammar of a clause. Since intensity increases semantic transitivity (§2.2.1), the D stem is thus associated with high transitivity. For reasons discussed below (§2.5.3), the D stem of many verbs came to have the more abstract grammatical function of indicating high transitivity of any type, particularly a factitive function, which explains the connection between intensity and factitivity.

56. Kouwenberg argues that the connection between the distinctive morphology of the D-stem (gemination of the second root consonant) and verbal plurality is iconic (2010, 284, 287, 1997, 19–26, 33–45, 445). Iconicity is a controversial linguistic category, and declaring gemination to be an icon for verbal plurality is even more so. Goetze (1942, 2) called it a “romantic notion” which “modern linguistics must reject.” Waltke and O’Connor (1990, 397n8) admit that iconicity is a legitimate category, but deny its application to this case. This debate, however, seems to be of minor importance; the key question is whether the D stem indicates verbal plurality. If the D stem indicates verbal plurality, it matters little if it does so because of an iconic connection between gemination and plurality, or if the morphology of the D stem is an arbitrary sign. Conversely, if actual uses of the D stem do not indicate verbal plurality, the plausibility of an iconic connection would not change that fact.
This shift from a lexical meaning (intensity) to a grammatical meaning (high transitivity) is, by definition, a type of grammaticalization.

Within Kouwenberg’s system, the concept of layering in grammaticalization (§2.5.1) may explain why the D stem has a variety of meanings. According to Kouwenberg, the D stem originally indicated intensity and then other forms of verbal plurality, but over time it was grammaticalized to a factitive. The gain of a grammatical function in some contexts, however, does not eliminate the use of old functions (e.g., verbal plurality) in other contexts; this is layering. As a result of layering, a single column in table 1 may need multiple labels; if a verb stem has been grammaticalized, it will express meanings from different points on its grammaticalization path, depending on the verb and the context.

The hypothesis that grammaticalization is unidirectional (§2.5.1), if correct, leads us to expect some lexical items to become grammatical, not the reverse. So it gives a reason to expect that if there was a change between verbal plurality and a factitive meaning, it is more likely that verbal plurality developed into factitivity (a more grammatical meaning, according to Kouwenberg) than the reverse.

Because grammaticalization tends to follow certain paths (§2.5.1), the hypothesis that the D stem was grammaticalized from intensity to factitivity raises the question of whether there is evidence for this change occurring in other languages. Is there a grammaticalization path from intensity to factitivity?
2.5.3 A Cross-Linguistic Grammaticalization Path

Synchronically, it is common cross-linguistically for the same morpheme to indicate causative (including factitive)\textsuperscript{57} meanings and verbal plurality (including intensity) (Comrie 1985, 350). For example, in Swahili, \textit{chanjisha} can either mean ‘to cause (someone) to chop’ or ‘to chop energetically’. The same type of ambiguity occurs in the unrelated languages Bari, Buli, Mwera, Indonesian, Chichewa, and Boumaa Fijian (Li 1993, 349-51; Hopper and Thompson 1980, 260-1, 264; Kulikov 1999, 24-5). Similarly, Kulikov (2001, 894; cf. Comrie 1985, 350; Kulikov 1999, 26) states that intensives, iteratives, and distributives are all connected to causatives, and suggests that the common denominator is that they all imply channelling extra force into the action. As an example of this connection between causative, iterative, and distributive, Golovko (1993) demonstrates that the Aleut causative morphemes are also used to indicate distributed plurality (repeated action on multiple objects) as well as repeated action on the same object. Similarly, in Zulu and in early Vedic Sanskrit, the causative verb morpheme is also used to indicate intensives and iteratives, and in Miwok, the causative verb morpheme also indicates a plural object (Kulikov and Nedjalkov 1992, 144; Kulikov 1999, 25; cf. Maslova 1993, 274-80). In Komi-Zyrjan, the causative verb morpheme is also used to indicate increased semantic transitivity, such as a totally affected direct object, an intensive action with added force, or an increase in the volitionality of the agent (Kalinina et al. 2006). All of these forms with

\textsuperscript{57}According to Kulikov (2001, 886), the distinction between \textit{factivites} and \textit{causatives} that was discussed in §1.2.2 (Jenni) and §2.3.1 (Kouwenberg) is rarely used by linguists except in French and Semitics. Thus the sources cited here do not distinguish between factitive and causative in their examples. One other thing to be aware of in reading the literature is that one tradition of Russian linguistics uses the word \textit{factive} (German \textit{Faktitiv}) to refer to causation where the causer has total control, as opposed to \textit{permissive} (Kulikov and Nedjalkov 1992, 142; Kulikov 2001, 886).
multiple meanings can be explained synchronically by Hopper and Thompson’s Transitivity Hypothesis: Because causativity increases semantic transitivity, the same form may be used as a marker for other types of increased semantic transitivity (such as intensity), but will not be used as a marker for decreased semantic transitivity (such as imperfective aspect) (Hopper and Thompson 1980, 255, 264).

This synchronic evidence of polysemy, however, is of limited value in proving that there has been a diachronic change, namely that there is a grammaticalization path from intensity/verbal plurality to causative/factitive. Recently, however, two linguists (Li and Whaley 2012; also Kuryłowicz 1956, 88) have argued that there is a cross-linguistic grammaticalization path from verbal plurality58 to causativity to indicating reciprocal action. They have offered cross-linguistic evidence for this path and explained why verbal plurality would grammaticalize into causativity rather than into something else.

For cross-linguistic evidence of this grammaticalization path, Li and Whaley (2012) point to diachronic evidence in Arabic, Oroqen, and Sanskrit. Table 15 shows the Arabic evidence from Saad’s study of Arabic verbs, in which Saad claims that multiple verbs that indicated verbal plurality in form II (the D stem) in Classical Arabic have become causatives in Modern Standard Arabic (Saad 1982, 74). Although Li and Whaley do not mention it, Saad also states that in many contemporary Arabic dialects, form II (the D stem) has taken over the causative function of form IV (like the Hebrew H stem), and where the same verbal root occurs in both forms, “the form II

58. Li and Whaley (2012) refer to intensity rather than verbal plurality, but their examples of intensity include qualitative intensity (e.g., ‘slept heavily’), repetitive action (e.g., ‘wept much’), and numerous patients (e.g., ‘died in large numbers’), so the term verbal plurality is appropriate.
verb indicates intentionality, intensity and/or persistency whereas the form IV verb doesn’t” (Saad 1982, 74). This data from contemporary spoken Arabic dialects suggests that the Arabic D stem is continuing to follow a grammaticalization path from verbal plurality to causative and that it is retaining the nuance of intensity/verbal plurality as it does. For another example, in Oroqen, the suffix -kan has archaic, non-productive uses as an intensive, and it is productive as a causative (Li and Whaley 2012). Finally, the Sanskrit causative suffix -āya- also expressed intensive, frequentative, or iterative meanings in the early Vedic dialect (Li and Whaley 2012; Kulikov 1999, 25). Thus there is evidence of a diachronic change from intensity/verbal plurality to causative/factitive in these three languages.

Table 15: Saad’s Arabic Examples of D Stem Verbal Plurality Becoming Causative

<table>
<thead>
<tr>
<th>Verbal Root</th>
<th>D-Stem (Form-II) Meaning</th>
<th>Verbal Plurality in Classical Arabic</th>
<th>Causative in Modern Standard Arabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>mwt ‘to die’</td>
<td>mawwata al-ʔiblu ‘The camels died in large numbers’</td>
<td>mawwat zaydun al-ʔiblu ‘Zayd caused the camels to die’</td>
<td></td>
</tr>
<tr>
<td>nwm ‘to sleep’</td>
<td>wa rawwaḥa rīḥānun wa nawwama summaru ‘And the shepherds went back home and the companions in nightly entertainment slept heavily’ [sic]</td>
<td>nawwamat al-ʔummu ṭīflahā ‘The mother put her child to sleep’</td>
<td></td>
</tr>
<tr>
<td>brk ‘to kneel’</td>
<td>barrakat al-ʔiblu ‘The camels kneeled down in large numbers’</td>
<td>barraka zaydun al-ʔiblu ‘Zayd made the camels kneel down’</td>
<td></td>
</tr>
<tr>
<td>bky ‘to weep’</td>
<td>bakkat hindun ‘Hind wept much’</td>
<td>bakkā zaydun hindun ‘Zayd made Hind weep’</td>
<td></td>
</tr>
</tbody>
</table>

Li and Whaley explain this change from intensity/verbal plurality to causativity as follows. The two meanings are connected in that both indicate a higher degree of the feature FORCE than the corresponding non-pluralitves and non-causatives. But causativity is more grammatical and less lexical than verbal plurality. It is more grammatical because causatives
increase the valency (number of arguments) of a verb and thus have a grammatical function that is absent in verbal plurality. It is less lexical because the involvement of an intermediary decreases the semantic feature **CONTROL**. Since causativity is more grammatical and less lexical than verbal plurality, the unidirectionality of grammaticalization leads us to expect it to be possible for a form that indicates verbal plurality to gain a causative meaning, but not the reverse.\(^{59}\)

This explanation of the path by which a marker for verbal plurality might shift to indicating causativity is not a claim that markers for verbal plurality always grammaticalize into causativity rather than into something else, or even that markers for verbal plurality always grammaticalize.\(^{60}\) But what it does offer is an explanation for the linguistic connections that may be involved in the grammaticalization of a word or morpheme from verbal plurality to causativity when it does occur. It also leads us to expect any shift to be from plurality to causativity, not the reverse, if the unidirectionality hypothesis (§2.5.1) is true.

An important caveat is that even if a marker for verbal plurality were to be grammaticalized from indicating verbal plurality to having a factitive function, that grammaticalization does not imply that every use of the marker will have the new meaning. The

\(^{59}\)In fact, Li and Whaley argue that the path continues on from causative to reciprocal. Their explanation for this is that if the **control** feature is lost even further, the verb form may become a reciprocal, since the agent of a reciprocal action has less control of the action than a causative.

\(^{60}\)For example, although Li and Whaley argue that the grammaticalization path continues to a reciprocal meaning (see note 59, above), they argue that the Arabic D stem (form II) does not become a reciprocal because Arabic already has a reciprocal that corresponds to the D stem, namely form V. Thus the Arabic D stem is an example of a marker going only part way down a cross-linguistically attested grammaticalization path.
concept of layering (§2.5.1) leads us to expect that the marker may continue to be used with the older meaning of verbal plurality.

In addition to gaining new meanings through grammaticalization, words can also gain new meanings that are independent of their paradigms through a process called lexicalization.

2.6 Lexicalization

“Lexicalization is the change whereby in certain linguistic contexts speakers use a syntactic construction or word formation as a new contentful form with formal and semantic properties that are not completely derivable or predictable from the constituents of the construction or the word formation pattern” (Brinton and Traugott 2005, 96, emphasis added). Thus, if a verb were to gain a meaning that is not predictable from its root and stem, that would be lexicalization.

An example of lexicalization in biblical Hebrew is the D stem of the stative verb חלה. In the G stem, חלה means ‘to be or become weak, tired, or sick’. It is widely acknowledged (§1.2) that verbs that are stative in the G stem have a factitive D stem, so we would expect חלה to mean ‘to cause to be weak, tired, or sick’ in the D stem and ‘to be caused to be weak, tired, or sick’ in the Dp stem. חלה has this meaning once in the D stem (Deuteronomy 29:21), and the one time that it occurs in the Dp stem it means ‘to be caused to be weak’ (Isaiah 14:10). However, the vast majority of the time, חלה in the D stem means ‘to appease or flatter’. One can see how the meaning ‘to cause to be weak’ could be used to refer to weakening someone’s resolve through appeasement or flattery, so a shift in meaning from ‘to cause to be weak’ to ‘to appease or flatter’ is a plausible development. Nevertheless, the meaning ‘to appease or flatter’ in the D stem does
not follow any pattern of relationship to the G stem meaning, so חלה has been lexicalized in the D stem. Thus, table 1 only indicates the meanings of a verb in various stems if the verb has not been lexicalized in that stem (Kouwenberg 2010, 250, 449).

The significance of this for the biblical Hebrew D stem is that lexicalization can perhaps explain the D-stem meanings of verbs that seem to fit no category, as described in §1.1. Lexicalization leads us to expect (with Waltke-O’Connor, Ryder, and Harris) that some words will have D-stem meanings that do not fit any pattern.

Lexicalization could be abused as a way to dismiss problems that should be solved, but there is a way to distinguish legitimate and illegitimate appeals to lexicalization: Although lexicalization can explain meanings of individual words that fit no pattern, it does not explain a pattern of meaning that is followed by multiple words. For example, if a frequentative, non-causative meaning occurs for multiple verbs in the D stem, lexicalization would not explain it. Lexicalization can explain why individual verbs have unpredictable meanings that do not fit table 1, but whenever there is a pattern, a different explanation is needed.

An additional control is that lexicalization is a more likely explanation when there is a plausible contextual use that can explain the development of the new meaning, even if it does not allow us to predict that development. For example, although the meaning ‘lobe of the liver’ does not fit within the expected meaning ‘leftover thing’ for יֹתֶ֫רֶת, it seems plausible that the word ‘leftover thing’ could develop into ‘extra thing’ and then be used to refer to the lobe of the liver.

One final possible control is that lexicalization is more common on frequently used words. The reason for this is that one of the main enablers of lexicalization is that high-frequency
derived forms tend to be stored as separate items in a speaker’s mental lexicon rather than being mentally processed as their root forms modified through a paradigm. This independent mental storage frees words to change their meanings (and occasionally their morphology) in ways that no longer fit their paradigms (Kouwenberg 2010, 35-6). The difficulty of applying this control is the limited size of our source; the Hebrew Bible is too small a sample and too restricted in subject matter and genre to confidently extrapolate the frequency of a word in spoken classical Hebrew from its frequency in the Hebrew Bible.
Chapter 3. Methodology

Now that we have reviewed the problem of the biblical Hebrew D stem and prior attempts at solving it (chapter 1) and discussed linguistic theory and how it has been applied to the problem (chapter 2), we are in a position to collect the data needed to evaluate Waltke-O’Connor’s proposal (chapter 4) and claimed patterns (chapter 5) as well as Kouwenberg’s proposal (chapter 6).

In order to avoid repeating information that is common to multiple chapters, this brief chapter addresses issues of methodology that affect all of our data collection.

3.1 Data Source

As a source for biblical Hebrew, this study uses the Leningrad Codex of the Hebrew Bible because it is the oldest complete manuscript of the Hebrew Bible and it is the standard manuscript used in biblical studies. Although it would be useful to examine non-biblical texts as well, their lack of pointing\(^1\) renders them less suitable because pointing provides a way to detect

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61. The Hebrew Bible was originally written without distinct symbols for vowels or the doubling of a consonant. Based on their knowledge of the language and oral tradition (as well as certain consonants that occasionally served as vowel markers), the original audiences generally knew which vowels to use and when consonants were doubled. A pointed manuscript includes written indications of all of the vowels and doubled consonants, using writing systems that were developed centuries after the biblical texts were composed. Because the morphology of Hebrew has shifted over time (Lambdin and Huehnergard 2000), the pointing in the Leningrad Codex (and all other biblical manuscripts) is not the vowel system of the original writers and readers (Blau 2010, 5-7). But for the purposes of this study, the only thing that matters is the parsing of a verb, not the pointing that indicates the parsing. Furthermore, the consistency of the vowels in the Leningrad Codex and their regular correspondences with the vowels in the verbal systems of other Semitic languages (Huehnergard 2002; Blau 2010) suggest that the pointing in the Leningrad Codex is a reliable witness to one of the descendants of the verbal system used by the authors and editors of its texts (cf. Barr 1987, 188-222; Joosten 1998, 206; Hofijzer 1992).
the stem of a verb independently of its meaning in context. For most verb forms, the pointing, not the consonants, distinguishes a D stem from a G stem.

This critical role of the pointing raises a question: When the Leningrad Codex points a verb in the D stem, how can we be certain that the author intended a D stem rather than a G stem? The troubling answer to this question is, ‘we usually cannot’. In fact, for a dozen verbs (בָּשַׁה, נַגְשׁ, לֶסֶף, מְכַר, מְשַׁה, פַּרְשׁ, קֶבֶצ, וּרְכֵמ, רֶכֶב, רֶקֶח), the Samaritan Pentateuch regularly uses the D stem where the Leningrad Codex has the G stem (Zurawel 1984; cf. Fassberg 2001). Thus it would be useful to include other reading traditions of the Hebrew Bible (such as the Samaritan Pentateuch) in our data source. In order to keep the present study to a manageable size, however, our data source will be limited to the Leningrad Codex, and other data sources will be left for future work (§7.5).

In order to facilitate analyzing thousands of verbs in context, we rely upon an electronically tagged database of the Leningrad Codex, hereafter referred to as our source. As a

62. The three other known dialects of Hebrew that have vocalized texts of parts of the Bible are the Palestinian, Babylonian, and Samaritan. For a discussion of why the Tiberian dialect, represented by the Leningrad Codex, should be the main source, see (Joüon and Muraoka 2006, 1-2).

63. Another problem is that the Leningrad Codex has some errors in its pointing. For example, the verb יְרַדֵּף [sic] in Psalm 7:6 in the Leningrad Codex (and in the Aleppo Codex) is pointed as a mixture of the G stem (יָרַדִּית) and the D stem (יַרְדֵּית). Since the root occurs in both stems with no clear difference in meaning, it is unclear whether יְרַדֵּף is in the G or D stem in Psalm 7:6. Thankfully, such ambiguous pointings are rare, and collecting data on every occurrence of every verb (§3.2) helps protect us from being misled by an occasional mispointed verb. In addition to occasional mispointings, certain classes of verbs are systematically mispointed (e.g., Qal Passive verbs are pointed as Pual in the suffix conjugation and as Hophal in the prefix conjugation). There is, however, no known systematic mispointing that affects the D stem. For further discussion of methodological problems that result from using the biblical corpus in general and the Leningrad Codex in particular, see (Joosten 1998, 206).
result, this study would be more accurately titled “Toward the Meaning of the Hebrew D-stem in the Masoretic Reading Tradition of the Hebrew Bible as Reflected in the Leningrad Codex and tagged in the 2010 Groves-Wheeler Westminster Morphology and Lemma Database, release 4.14.”

In an attempt to eliminate inappropriate data, the following occurrences that were tagged as G or D stem verbs in our source were excluded from our analysis of verbal roots that occur in the D stem: (1) the 10 occurrences of a G or D infinitive absolute used in conjunction with a root in a different stem; (2) 22 occurrences of verb forms that seem to be due to textual corruption or mispointing; (3) 31 occurrences of G-stem verbs for which the only occurrence of a D-stem of that root (כָּשׁל and סָפַח) seems to be corrupt; (4) 4 occurrences that our source seems to have mistagged; (5) 3 occurrences of quadriliteral verbs there were tagged as D stem. After eliminating these occurrences, our source has 418 different verbal roots that occur in the D stem a total of 6,473 times. Of those 418 verbal roots that occur in the D stem, 244 of them occur in the G stem a total of 12,841 times.

3.2 Sampling

Rather than only examining some verbal roots (as most authors have done), or even some examples of every verbal root (as Jenni did), this study examines every occurrence of every D-stem verb in our source along with every occurrence of the corresponding G stem. This avoids

64. I also changed the homonym number on a few items that our source seemed to have tagged with the wrong homonym.
65. I count homonyms (e.g., 1ָשׁר and 2ָשׁר) as separate roots.
66. Except that a few high-frequency verbs are sampled rather than examined exhaustively, as
the risk of unrepresentative examples and fits our goal of developing a system that can explain the wide variety of apparent meanings of the D stem.

To reduce to a tractable size the amount of data that must be collected on very common verbs, this study examines a sample rather than all occurrences of the eleven verbs that occur more than 400 times in a particular stem. In the D stem, only two verbs are sampled: דָּבַר (2–1092 occurrences) and צָוה (487). In the G-stem, nine verbs are sampled: לָכַד (1419 occurrences), חָלָה (821), יָשַׁב (1039), קָבָר (594), שַׁלֵּחַ (470), נִשָּׁא (459), שָׁמַע (557), עָבַר (1057), and שְׁמֵר (425).

Sampling verbs rather than studying them exhaustively runs the risk of an unrepresentative sample. To minimize this risk, each sample includes all of the examples listed by (Koehler et al. 2000) as well as (where available) at least one from every book of the Bible and two of every conjugation. Through this sampling procedure, we ended up collecting data on 7,307 G-stem verb occurrences (out of 12,841 total) and 5,114 D-stem verb occurrences (out of 6,473 total). These 12,421 occurrences are hereafter referred to as our sample.

described in this section.
Chapter 4. Causation with a Passive Undersubject?

4.1 Waltke & O’Connor’s Hypothesis

Waltke and O’Connor propose that the columns of table 1 are distinguished by the voice of the undersubject, as shown in table 16 (1990, 355–8). By undersubject, Waltke and O’Connor refer to the secondary subject of a verb that describes causation: the subject causes the undersubject (a direct object) to be something (middle column) or do something (right column).

Table 16: The System of Hebrew Verbal Stems according to Waltke and O’Connor

<table>
<thead>
<tr>
<th></th>
<th>No Undersubject</th>
<th>Passive Undersubject</th>
<th>Active Undersubject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Subject</td>
<td>qal (G)</td>
<td>pi ‘‘el (D)</td>
<td>hif‘il (H)</td>
</tr>
<tr>
<td>Passive Subject</td>
<td>nif‘al (N)</td>
<td>pu‘al (Dp)</td>
<td>hof‘al (Hp)</td>
</tr>
<tr>
<td>Middle/Reflexive Subject</td>
<td>nif‘al (N)</td>
<td>hithpa‘el (tD)</td>
<td>-None-</td>
</tr>
</tbody>
</table>

The left column (G and N stems) has no undersubject; the verb describes the action of the subject; any direct object is described as an object, not as an undersubject that is caused to be or do something. The middle column (D, Dp, and tD stems) has a passive undersubject, so the verb describes the undersubject (the direct object) as being caused to enter into a state (i.e., it is caused to be something). Although the subject is doing an action, the focus is not on that process. Instead, the focus is on causing the undersubject to enter a state. The right column (H and Hp stems) has an active undersubject, meaning that the verb describes the subject causing the undersubject to do an action. Therefore, the G, D, and H stems are distinguished as follows (1990, 351–9, 396–400):

67. This description applies to active voice verbs (D and H stems). For passive causative stems (Dp and Hp), the grammatical subject of the verb is the undersubject, and the ‘subject’ in table 16 is normally left unstated. For the reflexive tD stem, the subject is the undersubject, so the subject causes itself to enter a state.
The G stem indicates a ‘simple’ action or state, meaning that it describes the direct object (if there is one) as an object rather than as an undersubject. In other words, a verb in the G stem describes the action or state of the subject, not the resulting state or action of an undersubject.

The D stem describes an action with a passive undersubject, meaning that the focus is on the undersubject (the direct object) being put into a new state, without regard to the process that the subject is doing to bring about that new state. The undersubject is passive because it is not described as doing anything; instead, it is passively entering a new state as a result of the action of the subject.

The H stem describes an action with an active undersubject, meaning that it portrays the undersubject (the direct object) performing an action as a result of the subject causing it to do so.

Thus, using Waltke and O’Connor’s example sentence ‘John cooked the cabbage’, the G stem refers to John cooking, the D stem refers to John causing the cabbage to passively enter the cooked state, and the H stem refers to John causing the cabbage to actively undergo the process of cooking (1990, 354–5).

Setting aside the H stem for future work, we will concentrate on the proposed unity of the D stem and its distinction from the G stem, because this is the key to Waltke and O’Connor’s system. Both of these are exemplified in table 17.68

68. The examples in the middle and right column in table 17 are culled from (Waltke and O’Connor 1990, 354–9, 405) and reworded to make the distinctions more explicit. The left column was added to clarify how their system applies to factitive verbs.
In Waltke and O’Connor’s system, the G stem can have the meaning of the left column or the middle column of table 17, but the D stem always has the meaning of the right column. The meaning of a particular verb in the D stem is called **factive** if the G-stem of that verbal root has a meaning in the left column (stative). Alternately, the meaning of a particular verb in the D stem is called **resultative** if the G-stem meaning of that root is in the middle column (process). **Factive** and **resultative** D-stem meanings are identical; their different labels indicate different G-stem meanings, not different D-stem meanings. This is what unifies the D stem in their system; this is Waltke and O’Connor’s core hypothesis.

### 4.2 Criteria and Plan to Test Waltke and O’Connor’s Hypothesis

The difficulty with testing this hypothesis is that the difference between a process meaning (the middle column of table 17) and a factitive/resultative meaning (the right column of table 17) is difficult to detect and awkward to express in European languages. Waltke and O’Connor acknowledge this difficulty (1990, 358–9, 405), but do not set out systematic criteria for detecting that difference. Their definitions and discussion, however, suggest the criteria in table 18.

**Table 17: Waltke and O’Connor’s Meaning Categories**

<table>
<thead>
<tr>
<th>Stative Meaning (G Stem)</th>
<th>Process Meaning (G Stem)</th>
<th>Factitive/Resultative Meaning (D Stem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cabbage is in the cooked state.</td>
<td>John did the process of cooking the cabbage.</td>
<td>John made the cabbage to be in the cooked state.</td>
</tr>
<tr>
<td>The airplane is in the flying state.</td>
<td>Sarah did the process of flying the airplane.</td>
<td>Sarah made the airplane to be in the flying state.</td>
</tr>
<tr>
<td>The stick is in the broken state.</td>
<td>She did the process of breaking the stick.</td>
<td>She made the stick to be in a broken state.</td>
</tr>
</tbody>
</table>
Table 18: Criteria for Detecting a Process or Resultative Meaning

<table>
<thead>
<tr>
<th>Features that Suggest a Process Meaning (G Stem)</th>
<th>Features that Suggest a Factitive/Resultative Meaning (D Stem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverbs or adverbial phrases describe the process.</td>
<td>Describes the result “without regard to the actual process of the event” (1990, 400). This is likely the case if the subject does the action indirectly (through others), without the means being stated (1990, 408–9).</td>
</tr>
<tr>
<td>The verb is affirmed, but the result is not achieved.</td>
<td>The result is achieved when the verb is affirmed. This is a necessary but insufficient condition for a factitive/resultative meaning.</td>
</tr>
<tr>
<td>The clause states that the subject ‘began’ or ‘finished’ doing the process. The verbal construction may describe the action in process, such as with ב or כ on an infinitive, or with a prefix-conjugation verb used in present or past time.</td>
<td>The focus is on the result, not on the process itself. This focus may be indicated by the general context or by certain grammatical constructions or particles (e.g., לְמַעַן).</td>
</tr>
<tr>
<td>The direct object is not changed by the action of the verb. This is generally the case if the direct object is vague, abstract, or non-existent, or if the meaning of the verb implies that it does not normally change its object (e.g., ‘to see’).</td>
<td>The verb indicates a change in the direct object. This is a necessary but insufficient condition for a factitive/resultative meaning. This usually requires a specific, concrete direct object, although the direct object may be implied rather than explicit. The change can be a change in attribution (e.g., to declare guilty) without being an actual change (e.g., to become guilty).</td>
</tr>
<tr>
<td>A substantival participle is likely to have a process meaning since it describes the one who does the action, not the outcome. This is particularly likely if there is no direct object.</td>
<td>Focus is on the undersubject (direct object) having a changed state.</td>
</tr>
<tr>
<td>The verb cannot be reflexive, since the D-stem undersubject is passive by their definition. Section 4.5 explores the possibility of eliminating this requirement.</td>
<td>The subject and direct object (the undersubject) are distinct. This is a necessary but insufficient condition for a factitive/resultative meaning.</td>
</tr>
<tr>
<td>The subject and its actions are in focus.</td>
<td>The direct object and what happened to it are in focus.</td>
</tr>
</tbody>
</table>

We use the criteria in table 18 to mark each occurrence of a verb as either likely, possible, or unlikely to have a factitive/resultative meaning as defined by Waltke and O’Connor. A particular occurrence is marked as likely to have such a meaning if it contains only features that
are described in the right column of table 18. It is marked as unlikely to have such a meaning if it clearly contains one or more features that are described in the left column of that table. And it is marked as possible if there are clear features from both columns or from neither column.

This chapter shows the result of testing every occurrence\textsuperscript{69} in both the G and D stems of every verbal root that occurs in the D stem in our source. Testing every occurrence of every verbal root ensures that the conclusions take all of the data into account, reducing the risk of basing conclusions on unrepresentative examples. Classifying every verbal occurrence with the same criteria regardless of whether it is in the G stem or in the D stem helps insulate the conclusions from distortions introduced by the standard of evidence being too tight or too loose. Doing so also reduces the risk of reading distinctions between the G and D stems into the data rather than out of it.\textsuperscript{70}

This test of Waltke and O’Connor’s hypothesis is divided into two major sections. Section 4.3 examines every verbal root that Waltke and O’Connor use as an example in their chapter on the D stem (1990, 401–17). Then section 4.4 broadens the search to include every verbal root that occurs in the D stem in our source. A more thorough test would ask the corresponding questions about all G-stem verbs (not only those that also occur in the D stem) and all H-stem verbs; that test is deferred to a future project (§7.5).

\textsuperscript{69} Except that for a few very frequent verbs, we sample their occurrences rather than testing every occurrence. See §3.2 for details.

\textsuperscript{70} These safeguards are important because Waltke and O’Connor base their work on Jenni, who has been accused of using unrepresentative examples and of reading distinctions into the data rather than out of it. See footnote 12 on page 15 for references.
4.3 Looking for a Passive Undersubject in Waltke and O'Connor’s Examples

In examining the verbal roots that Waltke and O'Connor use as their examples, we will follow their categorization of D-stem meanings as factitive, resultative, denominal, frequentative, and mixed forms, depending on their G stem, as described in table 19.

| Table 19: Waltke and O’Connor’s D-stem Categories |
|---------------------------------|---------------------------------|
| **G stem**                      | **D Stem**                      |
| Stative (describes the state or condition of the subject) | Factitive (put the undersubject in the state) |
| Fientive Transitive (describes an action done to a direct object) | Resultative (put the undersubject in the state that results from the G-stem action) |
| Does not occur in the G stem | Denominal (derived from a noun or adjective) |
| Fientive Intransitive (describes an action done without a direct object) | Frequentative (the same as the G stem, but done repeatedly) |
| Does not occur in the G stem | Mixed Forms (factitive of the N stem) |

Understand from §4.1, however, that in Waltke and O’Connor’s system, the difference between the rows in table 19 is a difference between their G-stem meanings; all rows are supposed to have the same type of D-stem meaning, namely that they describe the subject causing a passive undersubject to be in a state, focusing on the causation of a state rather than on the process by which it is caused (1990, 354–8).

The following sections (§4.3.1–§4.3.5) go through Waltke and O’Connor’s categories from table 19, examining every occurrence in both the G and D stems of every verbal root that

71. Their table on page 400 suggests that the G stem being intransitive is the key to their classification of a D stem as factitive. Furthermore, on page 401 they state that they include some quasi-fientives, which suggests that being stative is unnecessary. Nevertheless, their statement that “the verbs denote at base a condition” and their separate category of fientive intransitive verbs indicate that a stative G stem is the defining characteristic of this category (1990, 401).
they use as an example to see if there is evidence that it fits in right column of table 17, or if it is in the left or middle columns. Because the distinction between the middle and right columns of table 17 (process vs. factitive/resultative) is subtle but also critical for their hypothesis, we focus on that distinction, using the criteria in table 18.

4.3.1 Factitive Examples

Waltke and O’Connor categorize a D stem as factitive if the corresponding G stem designates a state or condition rather than an action, such as ‘to be small’ rather than ‘to run’ (1990, 401). In terms of table 17, the D stem (right column) is factitive if the G-stem meaning fits the left column. Their definition of a factitive verbal meaning is that it describes a passive undersubject being placed in the condition (or state) described by the G stem.

Because Waltke and O’Connor distinguish between the middle and right columns of table 17 (e.g., ‘to break’ vs. ‘to make broken’), the question that we are asking in this section is not “are these verbs what would generally be called factitive?” but rather “is there evidence that the G stem has a stative or process meaning and the D stem has a factitive/resultative meaning as defined by Waltke and O’Connor and exemplified in table 17?” In particular, we are looking for evidence (see table 18) that the D stem has a factitive meaning instead of a process meaning, as

72. Whereas if the G-stem meaning fits the middle column of table 17 (process meaning instead of stative), then the D stem is resultative.

73. They classify a D stem meaning as factitive even if the G stem is not extant, if they think that there was a G stem with a stative meaning (the left column of table 17), based on evidence from cognate languages and semantic patterns. For example, because the Arabic equivalent of the G stem of גלק designates a condition (‘to be bald’), Waltke and O’Connor classify the Hebrew גלק D ‘to shave’ as factitive even though the G stem of גלק does not occur in the Hebrew Bible (1990, 400).
defined by Waltke and O’Connor. For example, for the verb *
�ָּלוֹד*, which means ‘to be great’ in the G stem and ‘to make great’ in the D stem, we are asking if there is evidence in the context of each occurrence of the D stem that it means ‘to make something to be in the state of greatness’ (the right column of table 17) rather than ‘to do the process of magnifying something’ (the middle column of table 17). One might object that if the G stem is stative and the D stem can be understood as the subject placing the object in a state, then of course the verb is factitive and fits their hypothesis. But this objection begs the question because the key to Waltke and O’Connor’s hypothesis is that they draw the distinction between process and factitive/resultative meanings that is exemplified in the distinction between the middle and right columns of table 17.

4.3.1a לְמַד

Waltke and O’Connor use the verb לְמַד to exemplify how the D stem indicates the causation of a state rather than the causation of an action. לְמַד is usually glossed ‘to learn’ in the G stem and ‘to teach’ in the D stem. Since the G stem sounds like a process (the middle column of table 17), the D stem sounds like the causation of an action (‘to cause someone to do the action of learning’, not in table 17), which would be the H stem in their system. Waltke and O’Connor argue, however, that לְמַד originally meant ‘to be accustomed (to something)’ in the G stem (the left column of table 17), and that the D stem means ‘to cause (someone) to be accustomed (to something)’, which is the causation of a state (the right column of table 17) rather than the causation of an action (not in table 17), just as they predict for the D-stem.

50 of the 58 times that לְמַד occurs in the D stem, it indeed seems possible that it describes a subject causing a passive undersubject to be in the state of being accustomed to something,
without regard to the process by which it happens. (Yes, that is long-winded, but that is one of Waltke and O’Connor’s points: the D stem has been misunderstood because its meaning is awkward to express in European languages.) By ‘possible’, I mean that there is no evidence in context that would allow us to decide if the verb belongs in the middle column or the right column of table 17. The vast majority of occurrences of לְלַמֵּֽד in the D stem are thus compatible with Waltke and O’Connor’s hypothesis, but none of them specifically support it.

The remaining 8 out of 58 occurrences of לְלַמֵּֽד in the D stem, however, all seem unlikely to describe a passive undersubject being placed in a state (Jeremiah 31:34; Psalm 60:1; 119:99; Proverbs 5:13; Ezra 7:10; 2 Chronicles 17:7, 9, 9). For example, Psalm 60:1 reads לְלַמֵּֽד ‘to the supervisor; according to Shushan Eduth; a miktam of David, for instruction’. In this verse, because the focus is on the subject (the Psalm) rather than on the direct object (the listeners), and because the direct object is general and implied (it is to teach whoever listens to it), it seems likely that the focus is on the action of teaching rather than on a passive undersubject being placed in the state of being accustomed to something. In terms of Waltke and O’Connor’s examples, the D stem of לְלַמֵּֽד in Psalm 60:1 seems to focus on the process of John cooking rather than on the cabbage being placed in the cooked state; this makes it fit the G stem rather than the D stem in their system. In terms of table 17, the D stem of לְלַמֵּֽד in Psalm 60:1 seems to have a process meaning (the middle column) rather than the factitive/resultative meaning (the rightmost column) that Waltke and O’Connor say it has.

The situation is similar in Ezra 7:10, which reads כ שָׁעַרָא מַגֵּד לְךָ וַעֲרָוָה אַתְיָנָאָה שָׁתְיָה ‘for Ezra had set his heart to study YHWH’s torah, and to do [it], and to teach statute and judgment in Israel’. The direct object is the thing taught rather than the
one taught, and the focus of the context is a description of the subject (Ezra), so it seems likely that it describes Ezra’s action of teaching rather than the unstated undersubjects being placed in the state of being accustomed. To use one of Waltke and O’Connor’s English examples (1990, 405), the D stem of למד in Ezra 7:10 seems to describe an action like ‘to break’ (process) rather than the causation of a state like ‘to make broken’ (resultative). It thus fits the middle column rather than the right column of table 17, contrary to Waltke and O’Connor’s hypothesis.

Both of the preceding examples are infinitive constructs, but the same situation occurs with a finite verb in 2 Chronicles 17:9, which reads וַיְלַמְדוּ יְהוָהֵּם הֵם הֵנָּה וְלָבְּרוּ בָּכֵלָּרוּ יְהוָהֵּם: ‘And they taught in Judah, and the Book of YHWH’s torah was with them. And they went about through all of the cities of Judah, and they taught among the people’. Both of the preceding two verses describe the subject, so the context leads us to expect this verse to continue to describe the subject and its actions rather than focusing on the effect on an undersubject. The ones taught are described in general terms, are not in focus, and are described using the locative preposition ב (in Judah, and among the people), which indicates that they are functioning adverbially, describing the sphere in which the teaching took place. All of these suggest that the D stem of למד in this verse describes the action of teaching (like ‘to break’) rather than a passive undersubject being placed in a state (‘to make broken’). It thus fits the middle column of table 17, not the right column as Waltke and O’Connor’s hypothesis predicts.

The use of the D stem of למד in 2 Chronicles 17:7 is similar to that in 2 Chronicles 17:9.

Jeremiah 31:34 reads לֹא לֹאִיתָהוּ שָׁלֹת אָשֶׁר אָרְצוֹתָהּ לָבְּרֹת לָבְּרוּ יְהוָהֵּם לָבְּרוּ שָׁלָחוּ: ‘And they will not teach again – each one his neighbor and each his brother – saying,
“Know YHWH,” for they will all know me’. This is likely to have a process meaning for two reasons: First, the reported speech describes the process by which teaching would occur. Second, the meaning in context is that the process of teaching will not occur. The whole point of the passage is that the process will not occur because the result will have already been achieved (‘they will all know me’)!

Finally, Proverbs 5:13 reads: And I did not listen to the voice of my teachers. And to my instructors I did not incline my ear.’ The point of this passage is that the subject did not learn from or obey those who did the process of teaching. The process took place (למד is affirmed), but the result was not achieved because the subject did not listen (לышה is negated). So according to Waltke and O’Connor’s hypothesis, למד should be in the G stem since it indicates the process, yet it is in the D stem in Proverbs 5:13.

Thus out of 58 uses of למד in the D stem, only 8 uses have evidence in context that allow us to distinguish between ‘to teach’ and ‘to make accustomed’, and all 8 fit Waltke and O’Connor’s description of the G stem (the middle column of table 17) rather than of the D stem (the right column of table 17). When using the criteria described in table 18, the verb למד in the D stem consistently lines up with a process meaning rather than a resultative meaning.

One might object that the verb is still factitive since it can be understood as causing an object to be in a state, even if the focus is on the action instead of the result. But that objection would miss Waltke and O’Connor’s point. In order to unify the factitive and non-factitive meanings of the D stem, they draw a critical distinction between a process meaning (that happens to have a result) and a resultative meaning (that happens to require a process). It is essential to
their system that the D stem fits the right column of table 17 (‘John made the cabbage to be in
the cooked state’) rather than the middle column (e.g., ‘John did the process of cooking the
cabbage’). Usually one cannot tell the difference between the two. Yet in the few occasions that
the criteria described in table 18 enable us to distinguish the two meanings, the D stem of
לָרֹחַ: always lines up with a process meaning rather than with a factitive/resultative meaning. This is
the opposite of what their hypothesis predicts.

4.3.1b Real Factitives: הָלָ֔ה, כֹּדֶשׁ, כָּרֶב, לֶדֶת, לֶדּ, מָלֵד, מָר

In Waltke and O’Connor’s terminology, a factitive is a real factitive if the acquired state
is observable by non-participants (1990, 401). In this section, we analyze all occurrences of the
seven verbs that Waltke and O’Connor use as examples of real factitives, checking to see if the G
stem has a stative or a process meaning (the left or middle columns of table 17) and if the D stem
has a factitive/resultative meaning (the right column of table 17).

הָלָ֔ה occurs 37 times in the G stem, usually with the meaning ‘to be or become weak or
sick’. Such a meaning is stative (the left column of table 17) and is incompatible with a factitive/
resultative meaning, so it fits Waltke and O’Connor’s hypothesis. Twice, however, the G stem of
לָרֹחַ has a different meaning that might be factitive/resultative. Qohelet 5:12 and 15 read לָרֹחַ,
However, twice the stem has different meanings: ... We see that the stem לָרֹחַ may be a stative
with more than one meaning. It has a stative meaning in Qohelet 5:12 and 15, and a factitive
meaning in Qohelet 1:18-19: ‘There is a sickening misfortune that I have seen under the sun: wealth was kept by its
owner to his hurt. ... And this also is a sickening misfortune: in every way as he came, thus he will go. And what advantage is there for one who toils for the wind?’ It is possible that the phrase
לָרֹחַ means simply ‘a great misfortune’, but the use of the verb לָרֹחַ (rather than an adjective
such as חלה) suggests the possibility that it refers to a misfortune that makes the writer feel sick. Such an understanding seems to be reflected in the traditional translation ‘grievous ill’ (RSV, NASB, NAB, NIV), which suggests a misfortune that grieves the writer. The semantics of ‘sickening’ suggest a resultative meaning, but it is unclear how to exclude the possibility of a process meaning, so the categorization of חלה in Qohelet 5:12 and 15 is uncertain.

It is possible that those verses use the G stem of חלה to describe a misfortune as one that puts the implied passive undersubject (the writer or reader) in the state of feeling sick or grieved, yet that is what Waltke and O’Connor say is the function of the D stem, not the G stem.

Turning to the D stem of חלה, we find that 16 of the 17 times that the verb חלה occurs in the D stem, it describes the subject as imploring someone. One can conceive of this use as arising out of weakening the resolve of the person who is implored, and hence be describing the subject as putting a passive undersubject in a state. In all 16 cases, however, the focus is on the process of imploring, not on the effect on the one who is implored. This is perhaps clearest in Malachi 1:9, which reads:וַהֲזֵרִי הַמַּלְאָכָ֖י הַקָּנֶסֶתָּ֣הּ וְנִקָּחֵֽהּ תּוֹאֳ֖ת חַלּוּ אֶפְּרֵֽים מִכֶּם מִיֶּדְכֶם מִכֶּם נַפְּדָֽנוּ אֶפְרֵֽים:

‘And now, **implore** God’s face so that he will be gracious to us. [With] this [blind or lame offering] from your hand, will he lift up your face? says YHWH of armies.’ The implied answer is ‘no’ because in verse 8, God complains that the people are offering blind, lame, and sick animals in sacrifice, and that if they offered such offerings to their ruler, he would not grant them any favor. Then in verse 10, YHWH states that he will not accept an offering from their hand. The context thus clarifies that the action of the verb does not have the intended effect on the object. Therefore, the D-stem חלה ‘implore’ describes the action itself, not the placing of a passive undersubject in a state, since the imploring happens, but it has no effect on the one
implored, even though the verb is not negated. This makes it like ‘to do the process of cooking the cabbage’ rather than ‘to make the cabbage be in the cooked state’; it is in the middle column of table 17, not the right column. Thus Waltke and O’Connor’s hypothesis leads us to expect חלה in Malachi 1:9 and similar passages to be in the G stem, yet it is in the D stem.

There is, however, one occurrence of חלה in the D stem that seems to describe the subject placing a passive undersubject in a state. Deuteronomy 29:21b reads התאצם חלה העם וירשה את עוניו וראה אشرح אשם וחלה בה אלה׃ ‘And they will see the afflictions of that land and the sicknesses with which YHWH has made it sick’. The focus on the state of the land clarifies that this is describing the land as being placed in a state rather than describing the action itself; in Waltke and O’Connor’s terms, this D stem has a factitive/resultative meaning rather than a process meaning.

Thus for the verb חלה, Waltke and O’Connor’s hypothesis is supported by the majority (and possibly all) G-stem occurrences and a single D-stem occurrence. Unfortunately, when we examine the texts carefully to detect the subtle distinction between a process meaning and a resultative meaning that their hypothesis requires, 16 out of 17 D-stem occurrences constitute evidence against their hypothesis.

קדשׁ. The verb קדשׁ occurs 11 times in our source in the G stem, always with a stative meaning, ‘to be/become holy’ or ‘to be forfeited/defiled’. So the G stem always fits Waltke and O’Connor’s hypothesis.

The D stem of the verb קדשׁ occurs 75 times in our source, usually with a meaning ‘to make or declare something or someone to be holy’, but three times with the meaning ‘to prepare
or appoint someone’ and three times with the meaning ‘to declare or prepare for war’. For 68 of these 75 occurrences, a factitive meaning is possible but not required, so those occurrences are compatible with Waltke and O’Connor’s hypothesis without specifically supporting it.

In the remaining 7 cases, however, we did find evidence to distinguish a process and a result meaning. In all 7 cases (Exodus 19:10; Jeremiah 17:24, 27; Ezekiel 44:19; Job 1:5; 2 Chronicles 29:17, 17), the evidence points to a process rather than a result. For example, Exodus 19:10–11a reads אֶל־הָעָ֔ם Rֽ֣לֵ אֶל־מֹשֶׁה֙ ה֤וּ וּיְוָוֹנִיִּ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹנִיִ֖ו וּיְוָוֹ
‘And YHWH said to Moses, “Go to the people and consecrate them today and tomorrow, and have them wash their clothes, so that they will be ready for the third day.”’ In the text, ‘today and tomorrow’ refers to the length of time that the process of consecration takes and the instruction about washing clothing describes part of the process, so the passage is describing the process (the middle column of table 17). One might argue that this is still a factitive meaning, since it can be glossed ‘to put in a consecrated state’, but that argument ignores the subtle distinction that Waltke and O’Connor make between the process meaning ‘to break a stick’ and the factitive/resultative meaning ‘to put a stick in a broken state’ (table 17). Because their definition of a factitive/resultative meaning requires that it describe the causation of a state “without regard to the actual process of the event” (Waltke and O’Connor 1990, 400), and these 7 occurrences describe the process of the event, they have a process meaning, not a factitive/resultative meaning, by Waltke and O’Connor’s definitions, even though they are in the D stem.

Thus, although most D-stem occurrences provide no evidence to distinguish a resultative meaning (‘to cause the state of holiness’) from a process meaning (‘to do the process of
sanctifying something or someone’), in the 7 cases where there is such evidence, the D stem of קֶרֶב always has a process meaning, contrary to Waltke and O’Connor’s hypothesis.

קרב. The G stem of קֶרֶב occurs 94 times in our source, always with the meaning ‘to be near someone or something’ (stative) or ‘to become near someone or something; to approach’ (process). Thus the G stem of קֶרֶב always has a stative or process meaning, just Waltke and O’Connor’s hypothesis predicts.

The D stem of קֶרֶב occurs 7 times. In 6 of those occurrences, the factitive/resultative meaning ‘to cause something to be near’ is possible. In no case, however, is there any evidence that would allow us to distinguish a process meaning (‘to do the process of bringing something near’) from a factitive/resultative meaning (‘to cause something to be near’). Thus these D-stem occurrences are compatible with Waltke and O’Connor’s hypothesis, but do not provide any evidence for or against the distinction that is at the core of their hypothesis.

In Ezekiel 36:8, however, קֶרֶב in the D stem is used differently. It reads יִשְׂרָאֵל֙ יֵרָהוֹן וְאַתֶּ֞ם יֵכְלֵלָה׃ But you, mountains of Israel, you will give your branches, and you will bear your fruit for my people Israel, for they will bring near to arrive’. Here, the verb קֶרֶב is used with the verb בוֹא to mean ‘arrive soon’. There is no direct object, and the only possible candidates for an undersubject would be either the subject Israel or their act of arriving. Either way, it is difficult to see how this use of קֶרֶב could be interpreted as the subject putting a passive undersubject in a state as Waltke and O’Connor’s hypothesis requires.
Thus the one time that there is evidence to decide between a process and a factitive/resultative meaning for the D stem of ישׁב, the evidence points to the opposite of what Waltke and O’Connor hypothesize.

The verb ישׁב occurs 1039 times in the G stem in our source, so we sampled it 105 times as described in §3.2. It typically has no direct object and means ‘to sit or dwell’. Sometimes it has a patient subject, meaning ‘to be inhabited’. Occasionally it has a direct object, the place that the subject inhabits. In all cases, however, a factitive/resultative meaning seems unlikely, because it never seems to describe the subject causing an undersubject to passively enter a state. So the G stem consistently fits Waltke and O’Connor’s hypothesis.

The one time that ישׁב occurs in the D stem is in Ezekiel 25:4, which reads לְמֽוֹרָשָׁ֗ה לִבְנֵי־קֶ֜דֶם וְבִּשְׁתָּהוּ וְאֵלָ֣֔כָּאָ֗י יְמָ֣רְיָֽאֶה. ‘Therefore I am about to give you [Ammon] to sons of the East for a possession, and they will set up their tent-camps among you and make their dwellings among you. They will eat your fruit and drink your milk’. This is compatible with Waltke and O’Connor’s hypothesis, since it reads naturally as the subject (sons of the East) causing the undersubject (their tent camps) to be in the state that results from being set up. On the other hand, it is also quite possible that it has a process meaning: the sons of the East will do the process of setting up their tent camps. Since ישׁב is in a series of verbs that are all in the G stem (שותה, אכל, ישׁנה), Waltke and O’Connor’s hypothesis requires that they have a process meaning rather than a resultative meaning, so the contexts suggests that the D stem of ישׁב might have a process meaning in Ezekiel 25:4.
Thus ישב is compatible with Waltke and O’Connor’s hypothesis, but it does not specifically support it. The reason for this is that Waltke and O’Connor make a distinction between process and resultative meanings (‘to break’ vs. ‘to make broken’), but the one time that ישב occurs in the D stem, there is insufficient evidence to decide if it has a process meaning (‘to do the action of setting up tents’) or a resultative meaning (‘to cause tent camps to be in the state of dwelling’).

ישב occurs 233 times in the G stem in our source,74 always with the meaning ‘to give birth’ or ‘to beget’. It likely refers to the process 32 times, according to the criteria in table 18. The other 201 times it may refer to the process, but it might also refer to the result. For example, Genesis 4:18a reads ישבות ארה מד ישב ישב וְעִירָ֕ד אתֵיְנֵּר יֶבֶל יָהֲנֵּא אֶלְעָ֖ד, ‘And to Enoch was born Irad, and Irad begot Mehujael’. The word translated ‘begot’ is ישב in the G stem. It could refer to the process of Irad begetting Mehujael. On the other hand, a meaning of ‘to cause Mehujael to be in the born state’, though awkward to say in English, would also fit the context. Furthermore, the preceding verb is ישב in the N stem, which is passive voice. This puts the focus on the child who was born, which suggests that the resulting state of a child being born is in focus in the following use of ישב, which would be a resultative meaning. Yet this is in the G stem, which according to Waltke and O’Connor’s hypothesis must have a stative or a process meaning. 200 other occurrences are similar to Genesis 4:18a. Thus although the G stem of ישב is always compatible with Waltke and O’Connor’s hypothesis, the vast majority of occurrences also have the possibility of a resultative meaning, which is incompatible with their hypothesis.

74. We exclude the Kethib in 2 Samuel 3:2 because it seems to be corrupt. The Qere corrects it to the N stem, which fits the context.
Nine of the ten times that ילד occurs in the D stem in our source it is a participle acting as a noun, meaning ‘midwife’, and it lacks a direct object. As such, it focuses on the one who does the process rather than on the affect on an undersubject; it is a process meaning (‘one who does the process of midwifing’) rather than the factitive/resultative meaning that Waltke and O’Connor’s hypothesis requires.

The other time that ילד occurs in the D stem, it is an infinitive construct in Exodus 1:16a, which reads ובְּיַלֶדְכֶן֙ בֹּאֶלְתֶּןְם֙ אַעֲרַבְרִיֵּיָֽו אִשָּׁ֔תָא וַלָּאֶלְתֶּ֖נְהוֹת יִתְאַרַּסֵנְהוֹת. ‘And he said, “When you are midwifing Hebrew women, and you see [them] on the birth stones”’. The infinitive ילד is the object of the preposition ב, so it forms a temporal phrase, ‘when you are midwifing’. This grammatical structure strongly suggests that the verb refers to the process rather than the result, because it focuses on the time of the process, not the achievement of the result. In terms of Waltke and O’Connor’s distinction between process and result, this is ‘to break’ rather than ‘to make broken’. It fits the middle column of table 17, not the right column, even though it is in the D stem.

In summary, the G stem of ילד is always compatible with Waltke and O’Connor’s hypothesis, and for 32 occurrences there is specific evidence that it has the process meaning that Waltke and O’Connor’s hypothesis predicts. For the D stem, however, all ten occurrences have a process meaning. Thus the G stem and the D stem of ילד both seem to have a process meaning. Their meanings are different, but the distinction between process and result (as Waltke and O’Connor define it) does not describe the distinction between the G and D stems of ילד.
ולָבֵן occurs 58 times in the G stem, always with the meaning ‘to be or become great or valued or preserved’. There is never a direct object or a reasonable candidate for an undersubject; instead, it always has a stative meaning and therefore fits Waltke and O’Connor’s hypothesis.

ולָבֵן occurs 25 times in the D stem, always with the meaning ‘to make or allow to become great, or to show or declare to be great’. A factitive/resultative meaning as Waltke and O’Connor define it seems possible, but not required, 24 times. There is, however, one occurrence that allows us to distinguish a process meaning from a factitive/resultative meaning. Daniel 1:5 reads

And the king appointed for them a thing of a day in its day [i.e., a daily ration] from the king’s food and from the wine that he drank, and to bring them up [i.e., educate them] three years, and from their end [i.e., afterward] they were to stand before the king’. The temporal phrase ‘three years’ indicates the duration of the process of bringing them up. If the verb were factitive/resultative, it would mean that the achieved state lasted three years,75 which does not fit the context. Thus, although we cannot distinguish a process meaning (‘to do the process of magnifying something’) from the resultative meaning (‘to make something great’) for most occurrences of ولָבֵן in the D stem, the one time that we can distinguish the two, the evidence points to a process meaning, contrary to Waltke and O’Connor’s hypothesis.

75. Because Waltke and O’Connor’s definition of a factitive/resultative meaning requires that it describe the causation of a state “without regard to the actual process of the event” (Waltke and O’Connor 1990, 400), if the verb in Daniel 1:5 is factitive/resultative, the three year time period can only be the time period of the state, not the time period of the process of causing the state.


occurs 18 times in the G stem, always with the meaning ‘to be or become few or fewer’ or ‘to lack something’. In all cases a stative meaning fits, so the G stem consistently fits Waltke and O’Connor’s hypothesis.

occurs twice in the D stem. In Psalm 8:6 it means ‘to make something lower’, with a focus on the achieved state. This is a resultative meaning. In Qohelet 4:8 it means ‘to cause [myself] to lack’ something. A resultative meaning fits here as well, but since the subject and undersubject are the same person, the undersubject is not passive as Waltke and O’Connor’s hypothesize, so it does not fit their hypothesis. Thus the D stem ofוור fits Waltke and O’Connor’s hypothesis once and violates it once. Section 4.5 explores the option of modifying their hypothesis so that Qohelet 4:8 will not be an exception.

In summary, for all seven verbal roots that Waltke and O’Connor use as examples of a real factitive, the G stem is always compatible with their hypothesis. In looking at the D stem of those seven verbs, one (וור) provides some evidence for their hypothesis and some against it, one (יושב) provides no evidence either way, and the remaining five verbs (תהל, קדש, כיוד, גדל) provide evidence against their hypothesis and none for it, although for קדש and גדל, the amount of evidence is slight. Thus when we make Waltke and O’Connor’s distinction between process and factitive/resultative meanings, the verbs that they use for examples of a real factitive meaning provide more evidence against their hypothesis than for it when we look at every occurrence of those verbs in the D stem.
4.3.1c Psychological/Linguistic Factitives: קָלַל, אָשֶּׁר-2, תָּהֳר, צָדָק, בָּכָר

In distinction from real factitives, Waltke and O’Connor categorize a factitive verb as a *psychological/linguistic factitive* if it describes the mental state (perhaps verbally expressed) of a participant. This section examines all occurrences in the G and D stems of the five verbal roots that they use as examples of a psychological/linguistic factitive.

כַּלַל occurs 12 times in the G stem, always with the meaning ‘to be small or despised or swift’. This is a stative meaning (the left column of table 17). There are no occurrences where it can plausibly be described as a subject causing a passive undersubject to enter a state (the right column of table 17), so the G stem consistently supports Waltke and O’Connor’s hypothesis.

All 40 times that כַּלַל occurs in the D stem, it is commonly glossed ‘to curse someone’. Waltke and O’Connor assert (1990, 402–3) that it actually means ‘to declare someone to be trifling’. In other words, according to Waltke and O’Connor, כַּלַל in the D stem means to declare someone to be כַּלַל-in-the-G-stem. If so, then כַּלַל in the D stem is a linguistic factitive and fits their definition of the D stem, because it is the same type of meaning as ‘to declare a stick to be in a broken state’.

When we examine the 40 occurrences of כַּלַל in the D stem, we find that Waltke and O’Connor’s explanation is possible 32 times, although none of them require it. Instead, a description of the process of cursing someone (like ‘to break a stick’) also seems possible. For example, Genesis 8:21a reads נָתַתְךָ יְהוָה אָדָם זַכָּר וּאֱמֹר יְהוָה אָלֶיךָ לֵאמֹרוּ כַּלַל שָׁוָא אֹתֵךָ וְאֵת אֵחָד מֵאֵיתָהוּ And YHWH swelled the pleasant aroma, and YHWH said to his heart, “I will never again curse the ground on account of mankind, for the tendency of man’s heart is evil from his youth.” This could have the factitive meaning ‘to declare or cause to be
cursed’ (the right column of table 17), but a meaning ‘to do the action of cursing’ (the middle column of table 17) would also fit the context.

In 8 occurrences, however, there is evidence to decide between the two possibilities, and in all 8 cases (Exodus 21:17; Leviticus 24:14, 23; 1 Samuel 3:13; 2 Samuel 16:5, 7; Psalm 62:5; Qohelet 7:21), the evidence is against their hypothesis. For example, Psalm 62:5 reads: Surely from his exalted position they plan to scatter him. The delight in falsehood. With their mouth they bless, but in their heart they curse.’ This passage is describing the characteristic actions of wicked people. The direct object is implied rather than stated and has a generic reference. The description of cursing describes how the cursing happens (‘in their heart’), but not the ones who are cursed or the effect on them. Thus according to the criteria in table 18, this has a process meaning, not a factitive/resultative meaning, contrary to Waltke and O’Connor’s hypothesis.

The occurrences of the D stem in 2 Samuel 16:5 and 7 are particularly instructive because 2 Samuel 19:22, which Waltke and O’Connor use as an example of קָלָל in the D stem having a factitive meaning, is a later report of the incident that 16:5–7 describes from the perspective of while it was occurring. 1 Samuel 16:5 reads: And King David came to Bahurim, and look! From there, there was going out a man from the clan of Saul’s house, and his name was Shimei, the son of Gera. He went out cursing as he went.’ In the context of a past-tense narrative, the use of קָלָל with a participle (קָלָל) is a literary device to draw the reader into visualizing the event as it is happening. Furthermore, the grammatical structure – a verb and infinitive absolute of the same
root (אשׁר, אָשַׁר) followed by a participle (נָבַלְנָבַל) – indicates simultaneous action. Thus two grammatical features of 1 Samuel 16:5 indicate that we should read the D stem of קָלַל in that verse as describing an action in process. Two verses later, 1 Samuel 16:7a reads niệmא קַלַל קָלַל ‘And thus Shimei said as he cursed ...’. The use of the preposition ב with an infinitive construct forms a temporal phrase, describing the process as it is happening. Thus the grammar indicates that the D stem of קָלַל in 1 Samuel 16:7 has a process meaning. The verb קָלַל may well mean ‘to declare someone to be of no importance’, as Waltke and O’Connor state, but the grammar and context of 1 Samuel 16:5 and 7 indicate a focus on the process, not the result, contrary to their hypothesis.

If Waltke and O’Connor did not draw the distinction between a process and resultative meaning (the middle column verses the right column of table 17), then we might say that קָלַל in the D stem is factitive as they assert that it is. But evaluating their hypothesis requires that we make the distinction that is at the heart of their system. When we do, we find that whenever the D stem of קָלַל occurs in a context that allows us to detect that distinction, we consistently find that it has the meaning opposite of what Waltke and O’Connor’s hypothesis predicts. In other words, all eight times that we find evidence that allows us to distinguish ‘to do the process of declaring someone to be of no importance’ from ‘to put someone in the state of having been declared of no importance’, the evidence for the D stem always falls on the wrong side.

2רשא occurs only in the D stem. It consistently means ‘to declare that someone is happy or blessed’. In all seven occurrences, a factitive/resultative meaning is possible. Waltke and

76. In fact, both Gesenius (1910, 343–4) and Joüon and Muraoka (2006, 395) cite 2 Samuel 16:5 as an example of this structure indicating simultaneous action.
O’Connor’s hypothesis, however, depends upon a distinction between a process meaning and a factitive/resultative meaning. Unfortunately, none of the occurrences of אַשָּׁר-וַהֲיָה provide any evidence to decide if it refers to the process of declaring someone to be happy or if it refers to the end result. Thus אַשָּׁר-וַהֲיָה provides no evidence either for or against their hypothesis.

טֹהֶר occurs 34 times in the G stem, always with the stative meaning ‘to be or become clean’. As such, the G stem is consistently stative and fits Waltke and O’Connor’s hypothesis.

טֹהֶר occurs 39 times in the D stem, always with the meaning ‘to declare or make someone or something clean’. 4 times (Ezekiel 39:12, 14; 2 Chronicles 34:5, 8) there seems to be a focus on the outcome, so a factitive/resultative meaning is likely, 3 times (Ezekiel 43:26; Malachi 3:3; 2 Chronicles 34:3) a process meaning is likely, and the remaining 32 times there is no evidence to distinguish the two. Thus the evidence for טֹהֶר favors their hypothesis in the G stem, but is mixed in the D stem.

צָדָק occurs 22 times in the G stem. In consistently means ‘to be righteous’. As such, the G stem is consistently stative and fits Waltke and O’Connor’s hypothesis.

צָדָק occurs 5 times in the D stem, always with the meaning ‘to prove or make someone appear to be righteous’. This fits naturally as a factitive meaning, but there is nothing in any of the contexts to allow us to exclude the possibility of a process meaning. In Jeremiah 3:11 and Job 32:2, however, the direct object of the verb is the subject herself (אַזְדוֹן) or himself (שָׁפֶךְ). Since the subject is doing the action to herself or himself, the undersubject is not passive as Waltke and O’Connor’s hypothesis specifies. Thus those two occasions provide evidence against Waltke and
O’Connor’s hypothesis, unless one modifies their hypothesis to include both passive and reflexive undersubjects in the D stem (see §4.5).

כבד occurs 22 times in the G stem in our source, always with the stative meaning ‘to be heavy or honored’. As such, the G stem consistently fits Waltke and O’Connor’s hypothesis.

כבד occurs 38 times in the D stem in our source, usually with the meaning ‘to honor someone or something’ but twice with the meaning ‘to harden one’s heart’. The former meaning is always compatible with the factitive meaning that Waltke and O’Connor hypothesize; it is likely to have a factitive meaning once (Isaiah 60:13), and the remaining times it is compatible with either a factitive meaning ‘to put someone in the state of having been declared to be honored’ or a process meaning ‘to do the process of declaring someone to be honored’. For example, Isaiah 29:13a reads וּבִשְׂפָתָיו֙ וְיֵ֔פֶר בּ֖הַזֶּ֔ה נִגַּשׁ֙יֵ֔כּון יּוֹנָ֖יִם רֶםְמָֽה יַנֻּמְלָֽהּ וְלֹא יִנְשַׁמָּֽהּ. And the Lord said, “Because this people drew near with its mouth, and with their lips they honored me, but they made its heart distant from me”. This could have a factitive meaning, ‘they declared me to be in an honored state’. On the other hand, the point of the text is that they were going through the motions, but the Lord was not truly honored by them, so one could argue that כבד describes the process but implies that the result was not achieved. This is an example of how the meaning ‘to honor’ can often have either a process meaning or a factitive meaning.

The remaining two occurrences of כבד both occur in 1 Samuel 6 and describe people hardening their own hearts. Since the undersubject is a part of the subject, the undersubject is reflexive rather than passive as Waltke and O’Connor’s hypothesis requires. Thus those two
occurrences provide evidence against Waltke and O’Connor’s hypothesis, unless one modifies their hypothesis to include both passive and reflexive undersubjects in the D stem (see §4.5).

In summary, of the five verbal roots that Waltke and O’Connor cite as examples of the D stem having a psychological or linguistic factitive meaning, when we check for their distinction between a process meaning and a factitive/resultative meaning, we find no verbs that support their hypothesis in the D stem. One verb (אָשַׁר-2) provides no evidence either way. One verb (טָהֵר) provides some evidence for the hypothesis and some against it. Two verbs (חָבֶר and חָמר) are ambiguous except for occurrences that are incompatible with the hypothesis because the undersubject is reflexive. The remaining verb (כָּלַל) is consistently incompatible with the hypothesis in the eight occurrences that allow us to make Waltke and O’Connor’s distinction. Thus the evidence of the D stem of their example verbs is against their hypothesis.

4.3.2 Resultative Examples

As described in table 19, Waltke and O’Connor categorize a D stem as resultative if the corresponding G stem is fientive (describes a process) and syntactically transitive (has a direct object) (1990, 404). A resultative meaning in the D stem describes the subject causing the undersubject (the direct object) to be in the state that is the end result of the action of the G stem. Thus, for example, 1 means ‘to break’ in the G stem, so it means ‘to make broken’ in the D stem, and 2 means ‘to scatter’ in the G stem, so it means ‘to make scattered’ in the D stem (1990, 405). This is the distinction between the middle and right columns of table 17.

Waltke and O’Connor categorize resultatives as simple, irreal, or other. A simple resultative like 1 ‘to break’ in the G stem means ‘to make broken’ in the D stem. For an
irreal resultative, the D stem may be metaphorical (e.g., ‘he built a bridge to the new topic’) or indirect (e.g., ‘Pharaoh Khufu built the Great Pyramid of Giza’). In the category of ‘other’ resultatives, Waltke and O’Connor place D-stem verbs that are distinguished from the G stem by having multiple objects, and hence multiple incidents.

4.3.2a Simple Resultatives: שבר-1, חלק, בחר, הפרש, משק, ששח

Traditionally, the verb שבר has been used to illustrate the intensive meaning of the D stem, glossing it ‘to break’ in the G stem and ‘to break entirely’ or ‘to smash’ in the D stem (Brown et al. 1907, s.v; Blau 2010, 229; Pratico and Van Pelt 2007, 309). According to Waltke and O’Connor, however, the D stem should be understood as a resultative and be glossed ‘to make broken’, in distinction to the G stem which describes the process of breaking (1990, 405). This is the distinction between the middle and right columns of table 17.

The verb שבר occurs in our source 51 times in the G stem. 49 of those times there is no evidence to distinguish the process ‘to break’ from the resultative ‘to make broken’. Of the remaining two G-stem occurrences, one (Jeremiah 19:10) is likely to have a process meaning, just as Waltke and O’Connor predict. That verse is in a series of instructions that YHWH is commanding Jeremiah. It reads: And you will break the jar in the sight of the men who are going with you. The prepositional phrase ‘in the sight of the

77. The verb is labeled שבר rather than שבר-1 because it has a homographic homonym שבר-2 that means ‘to buy grain’ in the G stem.
78. Waltke and O’Connor also list שבר-1 as an irreal resultative used for indirect action (1990, 408). This will be discussed in §4.3.2c.
men’ is adverbial, describing where Jeremiah is to do the process of breaking the jar. This indicates that the focus is on the process of breaking, not on the result that it is broken.

In Isaiah 30:14, however, the G stem of שִׁבְרָן seems to have a resultative meaning. That verse reads: ‘And he will break it’ like the breaking of a potter’s jar, beaten without pity so that there will not be found in its fragments a potsherd to scoop fire from the hearth or to dip water from a cistern’. The extended simile in this verse focuses on the result of the breaking; it will be totally smashed into fragments that are too small to be useful for anything. There is no mention of the one who breaks it or how it is broken; the entire focus is on the result. Therefore it has a resultative meaning, yet it is in the G stem, contrary to Waltke and O’Connor’s hypothesis.

Thus the evidence for the G stem of 1 שִׁבְרָן is mixed: once it fits their hypothesis, once it contradicts it, and the remaining 49 times there is no evidence to distinguish the two.

The D stem of 1 שִׁבְרָן occurs 36 times in our source. In a dozen of those occurrences, there is evidence in context that it has a resultative meaning, as Waltke and O’Connor’s hypothesis predicts. For example, Isaiah 21:9b reads: ‘And he answered and said, “Fallen, fallen is Babylon! And all of the images of her gods he has broken to the ground!”’ In context, the ‘he’ that is the subject of the verb ‘he has broken’ has no clear antecedent.79 This suggests that the process of breaking is unimportant. Rather, what is in focus is that the images are on the ground in the broken state. This is a resultative meaning.

79. This may be the use of an impersonal third person subject for passive: ‘and it will be broken’ (Isaiah 30:14) and ‘have been broken’ (Isaiah 21:9b). See page 111 for an explanation.
Once, however, there is evidence that שבר in the D stem has a process meaning. 1 Kings 19:11b reads

‘And behold! YHWH was passing by! And a great and strong wind was tearing off mountains and breaking rocks before YHWH. But YHWH was not in the wind.’

And a participle is a literary device to pull the reader in, as if witnessing the events in process. In addition, the episode ends with a reference to the wind, whereas the rocks are not referred to again. This indicates that the action of the wind is in focus, not the result on the rocks, so this occurrence has a process meaning, contrary to Waltke and O’Connor’s hypothesis.

Thus for שבר, the evidence is mixed for both the G stem and the D stem. In the vast majority of occurrences, there is no evidence that allows us to distinguish the process ‘to break’ from the resultative ‘to make broken’. Yet when there is evidence, both the G stem and the D stem have examples of a process meaning and examples of a resultative meaning. The D stem has more examples of a resultative meaning, however, so this is slight evidence for Waltke and O’Connor’s proposal, albeit with exceptions.

וּ שָׁבַר. Waltke and O’Connor list שָׁבַר as an example of the distinction between the G and D stems. They cite Joshua 14:5 as the G stem meaning ‘to apportion’ and Joshua 19:51 as the D stem meaning ‘to make apportioned’.

Joshua 14:5 reads

‘As YHWH commanded Moses, thus the sons of Israel did, and they divided the land’. Given the focus on the action of the Israelites (שָׁבַר), this fits Waltke and O’Connor’s hypothesis that the G stem
describes the action (‘they divided the land’) rather than the end result (‘they made the land divided’). So far, so good.

Their contrasting D-stem example from Joshua 19:51 reads

\[\text{Joshua 19:51 reads}\]

\[
\text{These are the inheritances which Eleazar the priest and Joshua the son of Nun and the heads of the patriarchs for the tribes of the Israelites caused [the people] to inherit by lot in Shiloh before YHWH [at] the entrance of the tent of meeting. And so they ceased from dividing the land’. The focus on the end product (\(\text{ venir }\) ‘the inheritances’) in the first half of the verse fits}

Waltke and O’Connor’s hypothesis that the D stem focuses on the end result (‘make divided’) rather than the process (‘to divide’). The actual wording of the verbal phrase, however, indicates that the verb itself describes the process. Note that it says \(\text{נָּכַּלָּה מַקְּלָא}\) ‘and they ceased from dividing’. The use of \(\text{כלה}\) ‘to finish’ combined with the privative preposition \(\text{מ}\) ‘from’ indicates that the verbal phrase is describing the process of dividing rather than the end result (‘making divided’). One finishes a process, not a result.\(^{80}\)

\(^{80}\) Jenni (1968, 127) reads Joshua 19:51 differently. He argues, “Im Schlußabschnitt des Berichtes über die Landverteilung wird das erreichte Resultat mit \(\text{כלה}\) pi. [D stem] und \(\text{מ}\) + Inf. festgehalten. Das Land ist jetzt definitiv verteilt; das Verb steht entsprechend im resultativen Pi`el [D stem].” Thus Jenni argues that it is resultative because the result was achieved. It is true that it would not be resultative if the verb were affirmed and the result negated. Nevertheless, the fact that it is affirmed rather than negated does not prove that it is resultative, since one can affirm an action as well as a result. Following Jenni’s logic consistently would require us to mark all verbs as resultative if the result was actually achieved! Furthermore, Jenni does not explain how one can cease from a result (\(\text{כלה with }\text{מ}\) followed by an infinitive ‘to cease from <infinitive>’). So, pace Jenni, the grammatical construction in Joshua 19:51 indicates that the infinitive \(\text{כלה}\) refers to a process, not a result.
In fact, of the 25 times that \( \text{חלק} \) is used in the D stem, 19 of them are ambiguous, 3 of them are likely to be resultative (Genesis 49:7; 2 Samuel 6:19; 1 Chronicles 16:3), and 3 of them are likely to describe a process (Joshua 19:51; Judges 5:30; Isaiah 9:2). As an example of a resultative, Genesis 49:7: ‘Cursed be their anger, for it is strong, and their wrath, for it is hard. I will divide them [D stem] in Jacob, and I will scatter them [H stem] in Israel’. Given that Jacob does not actually do the scattering himself, and the scattering happens many generations later, a focus on the end result rather than the process seems likely, so this fits Waltke and O’Connor’s hypothesis. Conversely, Joshua 19:51 has a process meaning, as described above. Thus the evidence for the D stem of \( \text{חלק} \) is mixed; most occurrences are ambiguous, and there are as many counterexamples as examples.

Of the 19 times that \( \text{חלק} \) occurs in the G stem, 18 give no evidence either way. The one exception is found in 2 Chronicles 23:18, which reads: ‘And Jehoiada placed the duties of YHWH’s house in hand of the priests, the Levites whom David had assigned over YHWH’s house to offer YHWH’s burnt offerings’. In this text, the issue is that the changes that Jehoiada made were a restoration of the proper order. To support that point, the purpose of the verb \( \text{חלק} \) in this text is to assert that the Levites had been given that role centuries earlier by David. Thus the focus is on the result – they had been properly appointed – rather than on the process of appointing them, so it should be in the D stem according to Waltke and O’Connor, yet it is in the G stem.

In summary, most occurrences of \( \text{חלק} \) in the G stem and D stem could have either a process meaning or a resultative meaning as defined by Waltke and O’Connor, and the few
occurrences that lean one way or the other are mixed. Thus the verb מַלְחָה does not support their hypothesis.

The verb וּבְּחַר occurs only twice in Bible; once in the D stem and once in the G stem, both in Genesis 15:10. It reads וֹתִיתָל אַרְגָּלֹת אַלְּכֵּל וּבְּחַר אֲלֵהַם וְחָלֹת יָדָיו לַעֲבָרָם. ‘And he took to himself all these. And he cut them in two in the middle and he put them, each piece of it to meet its neighbor, but the birds he did not cut in two’. The first occurrence is D stem, and the second is G stem. It seems, however, that both verbs could be taken either way: ‘He did the process of cutting them in two in the middle’ or ‘He made them cut in two in the middle’, and ‘but the birds he did not do the process of cutting in two’ or ‘but the birds he did not make cut in two’. Waltke and O’Connor state that the second is G stem because it is negated, and negation is appropriate for the form dealing with the action. This will be discussed in §5.2. For now we simply note that when one looks at other verbs (§5.2), both D stem and G stem verbs are negated, so negation is an insufficient criterion for distinguishing process and resultative verbs.

In line with their hypothesis, Waltke and O’Connor say that G stem of פרוש specifications the movement as an event” whereas the D stem specifies the movement “as at an end” (1990, 406), namely at the end result of the process of spreading. For examples of the G stem, they list Job 11:13 and Exodus 9:29. Job 11:13 reads אִם תִּכְלָסֵב טַחְדָּס אַלּוֹז אָרְנים אֶת־כָּל־אֵלֶּה אֶת־כָּל־אֵלֶּה. ‘If you prepared your heart, you will stretch out your hands toward him’. Exodus 9:29 reads אָלָיוּ וְעָלָיוּ לְנַחֲלַת אַרְּאָם אַלְּכֵּל אֶת־כָּל־אֵלֶּה אָרְנים אֶת־כָּל־אֵלֶּה. And Moses said to him, “When I exit the city, I will spread out my hands to YHWH”. In both cases one can see how the process of spreading out one’s hands fits the context. On the other hand, it is unclear why an end-result meaning would
not fit as well. E.g., “If you prepared your heart, you will make your hands stretched out toward him.” Unfortunately Waltke and O’Connor do not explain why the event meaning fits better than the end result meaning; they simply assert that it is so.

Furthermore, when one looks at certain other examples of the G stem of פרשׂ, a resultative meaning fits better than a process meaning. For example, 1 Kings 6:27 reads, ‘הכְּרֻבִים נְפְרֹשׁוּ וְקָרְב֫וּ נֶפֶשׁ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ וְתֵשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ נְפָשׁוּ וְקָרְבּוּ נְפָשׁוּ VAnd they spread out the wings of the cherubim, and the wing of the one touched the wall and the wing of the second cherub was touching the second wall, and their wings to the middle of the house were touching wing to wing’. In this passage, there are two reasons why a focus on the end state fits better than a focus on the process. The first is that the verb has a third-person plural subject, but in context there is no third-person plural to be the subject. Therefore this is likely to be the use of the impersonal third person as passive (Gesenius et al. 1910, 460; Williams and Beckman 2007, 66), so it is usually translated “and the wings were spread out” (RSV, NRSV, NASB, NET; cf. JPS, NIV). This indicates that the resulting state of the object is what is important in this context, not the action of the subject. The second reason is that in this passage, the clause with פרשׂ is followed by three clauses describing the final position of the outspread wings. Since the context focuses on the final position of the wings rather than on the process of spreading them out, and since the verb is an impersonal third person, the verb פרשׂ is likely describe the final state at the end of the movement. Yet the verb פרשׂ in 1 Kings 6:27 is G stem, whereas Waltke and O’Connor state that the ‘end state’ meaning is the D stem, not the G stem.

To exemplify the end-state meaning of the D stem of פרשׂ, Waltke and O’Connor point to Isaiah 1:15a and 65:2. The first reads VAnd when you spread out
your hands, I will hide my eyes from you’, and the second reads ‘I spread out my hands all the day to a rebellious people’. One can see how both verses could describe the end point, (‘And when you make your hands spread out ...’) and (‘I make my hands spread out ...’). Yet a process meaning also seems to fit: (‘And when you spread out your hands...’) and (‘I spread out my hands’). Waltke and O’Connor do not explain why a focus on the process rather than the end point would not fit; they simply assert that they have an end-state meaning because they are D stem.

Furthermore, in Jeremiah 4:31 the D stem seems to focus on the action, not the end result. It reads: פֵּרַשׂ יָרְאֶה חַלָּאָה שַׁמַּעְתִּי כְּחוֹלָּה קֹל כִּי֩ שׂ פְּתִית יָדוֹ וּלְהֹרְגִֽים׃ יִשׁ פְּנָה סַף לַכְּבַ֫כִּירָ֔ה צָרָה שָׁמַ֗עְתִּי כֶּלְּקֹלָ֖ה קֹל לִֽי אֲנָהִי לְהוֹרְגִֽים׃

‘For a sound like a woman in labor I heard, distress like one bearing her first-born, the sound of the daughter Zion gasping for breath, spreading out her hands, “Woe is me! For my life is fainting before murderers!”’ In this text, the focus seems to be on the process: gasping, crying out, stretching out one’s hands. This would be a G-stem meaning according to Waltke and O’Connor’s hypothesis, yet the verb is D stem.

Thus we have seen that Waltke and O’Connor’s examples of פֵּרַשׂ in both the G stem and the D stem are ambiguous, and we have seen counterexamples in both stems.

The above discussion omits an important point, however, because Waltke and O’Connor inconsistently define the distinction between the D and G stems. On pages 354-8 and 400, Waltke and O’Connor describe the key feature of the D stem being causation with a passive undersubject (this was discussed in §1.2.2 and §4.1), whereas on page 406, their definition of the D stem of פֵּרַשׂ as specifying the movement “as at an end (terminal Aktionsart)” omits one detail:

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the undersubject being passive. That detail is not optional, since what distinguishes the D stem from the H stem in their system is that in the D stem, the undersubject is passively placed in a state, whereas in the H stem, the undersubject actively does something. For the verb שָׁם, the passivity of the undersubject is a critical feature of the definition because the verb often describes the subject spreading out her or his own hands or wings. Since the undersubject is part of the subject, the verb is arguably reflexive rather than one with a passive undersubject. Thus all of the above examples except perhaps 1 Kings 6:27 arguably do not have a resultative meaning by Waltke and O’Connor’s definition: one that describes the undersubject being passively placed in a state. This point is debatable; see section 4.5 for further discussion.

When one consistently applies Waltke and O’Connor’s definition that the D stem has a passive undersubject, we obtain the following. Of the 54 times that שָׁם occurs in the G stem, 23 cannot have a resultative (passive undersubject) meaning, one (Exodus 40:19) is likely to have such a meaning, and the rest have no evidence either way. The D stem occurs 9 times, of which 7 cannot have a passive undersubject and 2 might. Since the G stem is at least as likely as the D stem to describe a passive undersubject being placed in a state, שָׁם does not confirm Waltke and O’Connor’s hypothesis as currently stated. Section 4.5 will discuss the possibility of changing their definition of resultative to include reflexive actions.

Waltke and O’Connor use the verb פָּשַׂק as another example of the contrast between the D and G stems. The verb occurs once in the G stem, in Proverbs 13:3, which reads נַעֲרָה יִרְיָשְׁר פָּשָׂק שָׁפָתָיו שְׁפָתָיו מְחִתָּה־לֽוֹ׃ שְׂפָתָ֗יו ‘One who guards his mouth preserves his life. One who spreads wide his lips – destruction is his’. This is unlikely to be resultative because it is a substantival

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participle, so the focus is on the one who does the action. Furthermore, it is reflexive, so it does not fit Waltke and O’Connor’s definition of a resultative as having a passive undersubject.

The verb also occurs once in the D stem, in Ezekiel 16:25, which reads כַּפָּֽי׃ To every street head you built a raised platform and made your beauty abominable and spread your legs wide to everyone passing by and you multiplied your whoring’. Because the subject is spreading her own legs, the undersubject is not passive, and it is not resultative by Waltke and O’Connor’s definition.81

שׁטח. The verb שׁטח occurs once in the D stem, and Waltke and O’Connor use it as an example of the D stem referring to an end state. Psalm 88:10 reads מִנִּ֫י אֲשֶׁר מְלֹא עַמִּי יָפִי׃ My eye wasted away on me from oppression. I called on you, O YHWH, every day. I spread out my hands to you’. This is the D stem, so Waltke and O’Connor interpret this as referring to the end state ‘I make my hands spread out’. This is possible, but given the parallel with calling upon YHWH (for which an end-state description ‘I made you called upon’ seems unlikely), a focus on the process may be more likely. Furthermore, because the subject is spreading out his own hands, the undersubject is arguably reflexive rather than the passive that Waltke and O’Connor’s hypothesis requires for resultative meanings.

In addition, when we look at the five occurrences of שׁטח in the G stem, four are ambiguous, but there is one occurrence that suggests a passive undersubject with a focus on the end result. Jeremiah 8:2 reads רָֽמָתֵ֔י אֲשֶׁר אָשָׁר עֵשָׁבֹת נְפָשׁוֹת שׁטָחוּם לָני׃ To every street head you built a raised platform and made your beauty abominable.

81. If one broadened the definition of resultative to include reflexive verbs (as we shall do in §4.5), then a resultative meaning (‘you made your legs spread wide’) would also fit.
And they will spread them to the sun and to the moon and to all the host of the sky, which they loved and which they served and which they walked after and which they sought and which they worshipped. They will not be gathered and they will not be buried. They will be as dung on the face of the ground’. There are two reasons that this context suggests a focus on the end result rather than on the process. The first reason is that the third-person plural verb form without a third-person subject in context indicates that this is the use of the impersonal third person plural. As discussed on page 111, this indicates that the point of the verb is what happens to the object, not the subject doing the action, so the focus is likely to be on the final spread-out state of the object, not the process of spreading out the object. The second reason is that the last clause of the verse describes the final state of the object. Therefore, it is likely that the final state of the object is in focus. Furthermore, the direct objects are corpses, so they are passive. The use of שטח in Jeremiah 8:2 thus fits Waltke and O’Connor’s description of the D stem, yet it is in the G stem, not the D stem.

In summary, in this section we have discussed all of the verbal roots that Waltke and O’Connor use as examples of simple resultatives. One root (בתר) is completely ambiguous. The remaining roots (שבר-1, חלק-2, פרש, פשׂה, שמש) have at least as many counter-examples to Waltke and O’Connor’s hypothesis as they have examples that fit. In addition, we noted that Waltke and O’Connor’s description of the D stem as having a passive undersubject may not fit their examples of D stem verbs where the subject is spreading their own hands or lips or legs or wings. This topic will be explored further in §4.5.
4.3.2b Irreal Resultatives (Metaphorical): רוּהַ, דָּלַל

In contrast with the real resultatives that were discussed in the preceding section, Waltke and O’Connor classify some verbs as having an irreal resultative meaning in the D stem. They subcategorize irreal resultatives as metaphorical (discussed in this section) or indirect (discussed in §4.3.2c).

Waltke and O’Connor posit that for some verbs, the D-stem describes an action metaphorically whereas the G-stem describes the action in a literal, physical sense. For example, they state that רוּהַ means ‘to scatter’ or ‘to winnow’ small particles (like grain) in the G stem, whereas it is used in the D stem to describe a king ‘winnowing’ the wicked. This metaphorical use of the D stem is irreal because the king isn’t actually scattering wicked people as small particles thrown to the wind.

Even if there are such verbs (for which the G stem is literal and the D stem is metaphorical), such verbs constitute support for Waltke and O’Connor’s hypothesis only if a metaphorical meaning is intrinsically factitive/resultative. Jenni is aware of this, so he argues that metaphorical action intrinsically focuses on the end result, so it is necessarily resultative (1968, 135–40). Waltke and O’Connor, however, say that this argument by Jenni “is interesting but not compelling” (1990, 407). Unfortunately, they do not offer any other explanation for how a metaphorical meaning is intrinsically factitive/resultative, as their own hypothesis requires. In fact, it seems quite possible that a metaphorical use of a verb could focus on the process rather than the result. To return to the example of רוּהַ, it seems conceivable that one could say, “One day, while King Solomon was winnowing the wicked by listening carefully to the evidence and rendering judgments with unprecedented wisdom and insight, the Queen of Sheba dropped in to
say hello.” The multiple adverbial phrases and the use of the verb in a temporal phrase (‘while he was winnowing’) indicate that the focus is on the process of winnowing, not the end result, even though it is metaphorical. Thus a metaphorical meaning is not inherently factitive/resultative.

This possibility of a non-resultative metaphorical verb makes it necessary for us to ask if a metaphorical verbal use has a process meaning (the middle column of table 17) or a resultative meaning (the right column of table 17). This section checks for a resultative meaning (as Waltke and O’Connor define it) in every G-stem and D-stem occurrence of the verbs that Waltke and O’Connor use as examples of verbs that are metaphorical in the D stem. The question of whether there are verbs for which the D stem is consistently metaphorical in contrast to a literal G stem is deferred to the next chapter (§5.3), since it is irrelevant to testing Waltke and O’Connor’s hypothesis (per the argument above, that metaphorical is not necessarily factitive/resultative).

1. רָדַת ‘to scatter’ occurs 9 times in the G stem and 25 times in the D stem. Because the verb itself intrinsically implies that the object is affected by the action of the verb, it seems possible in almost every occurrence that the verb describes the subject putting a passive undersubject in a scattered or winnowed state (i.e., a resultative meaning). On the other hand, in all cases but two, it also seems possible that the verb describes a process (‘to break a stick’ in the middle column of table 17) rather than the imposition of a state (‘to make a stick broken’ in the right column of table 17). For example, Exodus 32:20 reads רָדַת אֲחַר הָעֵגֶל אֶת־הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵגֶל הָעֵ�ל הָעֵגֶל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ�ל הָעֵ7: ‘And he took the calf that they had made and burned it with the fire and ground it until it was crushed and he scattered it on the surface of the water and he caused the sons of Israel to drink it’. A process meaning for ‘scatter’ fits nicely here, since it is in a series of Moses’ actions. On the other hand, a resultative meaning would also work
because it is preceded by a resultative (וּבַמִּזְרֶֽה׃ ‘until it was crushed’), so the resulting state of the calf was in focus. Similarly, Leviticus 26:33 reads אֲשֶׁר־וּבַמִּזְרֶֽה׃ ‘I will scatter you among the nations and unsheathe a sword after you, and your land will be desolate and your cities will be a waste’. The last two clauses describe the resulting state of the land and the cities, so it is possible that the first two are also resultative (‘I will make you scattered ... and I will make a sword unsheathed’). On the other hand, because the last two clauses describe the result, it seems natural for the first two clauses to describe the processes (‘I will scatter you ... and unsheathe a sword’) that led to the resulting state of the land. Thus both Exodus 32:20 and Leviticus 26:33 occur in contexts which allow either a process or a resultative meaning, yet 1 רוּחַ is in the G stem in Exodus 32:20 and in the D stem in Leviticus 26:33.

There are, however, two occurrences of 1 רוּחַ that are unambiguous; both of them are in the G stem. Ruth 3:2b reads והִנֵּה־הוּא הַלָּֽיְלָה׃ ‘Look! He [Boaz] is winnowing the barley threshing floor tonight’. Because the issue at hand is finding an opportunity for Ruth to propose to Boaz, the focus is on Boaz’ activity that night, what process he is engaged in doing, not the result of the process. Therefore 1 רוּחַ seems unlikely to have a resultative meaning (‘to make winnowed/scattered’) in Ruth 3:2; instead, it has a process meaning (‘to do the process of winnowing’), just as Waltke and O’Connor’s theory predicts.

The other unambiguous occurrence of 1 רוּחַ is in Isaiah 30:24, which reads ההַלָּֽיְלָה׃ ‘And the oxen and the donkeys that work the ground will eat sorrel mash that has been winnowed with the shovel and with the fork’. In this verse, the point is that the animals will eat high-quality food, so the focus is on the state of the
food – that it has been winnowed. This is thus a resultative meaning, not a process meaning. A resultative meaning is what Waltke and O’Connor lead us to expect for the D stem, yet this is the G stem. In fact, it is the exact same verbal form (G-stem participle masculine singular) as Ruth 3:2, which unambiguously had a process meaning, as described in the previous paragraph.

In summary, all but two occurrences of לָיָּהַ דְּלֵה־ are ambiguous. The two unambiguous occurrences are both G stem, one of which has a process meaning as Waltke and O’Connor predict, but the other has a resultative meaning, which should be D stem according to their hypothesis. Therefore לָיָּהַ does not confirm Waltke and O’Connor’s hypothesis that the G stem is process (‘to winnow’) and the D stem is resultative (‘to make winnowed’).

1 לָיָּהַ ‘to bring up’ occurs five times in our source: four times in the G stem (Exodus 2:16, 19, 19; Proverbs 20:5), and once in the D stem (Psalm 30:2). In all five occurrences, there is no evidence to allow us to detect if the process or result is intended. For example, the one D-stem occurrence is in Psalm 30:2, which reads לִֽי׃ יַֽבְלָיָּהַ רָֿאִיתִי לֵיַֽוְּלֵיָּהַ אָלְּוָּיַ לָיָּהַ יַֽוְּאִיתִי לֵיַֽוְּוָּיַ נַֽתי׃ יַֽוְּאִיתִי לֵיַֽוְּוָּיַ נַֽתי׃ I shall exalt you, YHWH, because you drew me up and did not let my foes rejoice over me’. Because the resulting state is important, a resultative meaning seems possible. On the other hand, since YHWH is being praised, a focus on YHWH’s actions seems apropos, which would be a process meaning. Thus this occurrence is ambiguous.

In summary, the two verbs that Waltke and O’Connor list as metaphorical irreal resultatives in the D stem are almost always ambiguous, leaving us unable to detect if the meaning is process or result. The two unambiguous occurrences are both the G stem of לָיָּהַ, 82.

82. If Isaiah 30:24 is a mispointed Pual perfect (זֹרֶה → זֹרָה), then the counterexample disappears.
one has a process meaning and the other has a result meaning. Thus neither of these verbs support Waltke and O’Connor’s hypothesis.

4.3.2c Irreal Resultatives (Indirect Action): שָׁבַר-1, בָּקָע

Waltke and O’Connor’s other subcategory of irreal resultatives consists of verbs for which the D stem describes the subject doing the action through an intermediary (usually unspecified), in contrast with the G stem, which describes the subject directly doing the action of the verb. In principle, whenever the one who actually does the action is not mentioned, that suggests that the process of the action is less important than the result of the action. Indirect actions, therefore, seem more likely than direct actions to fit Waltke and O’Connor’s description of a resultative meaning, as long as the intermediary is not mentioned. If the intermediary is mentioned, however, a process meaning seems quite possible, since specifying the intermediary is specifying information about the process.

In chapter 5 we will investigate the question of whether there are verbs that consistently indicate indirect action in the D stem, whereas in this section we are asking whether Waltke and O’Connor’s example verbs (שָׁבַר and בָּקָע) consistently fit their hypothesis about the D stem, regardless of whether they indicate indirect action.

1. שָׁבַר. In §4.3.2a we concluded that the stem (D or G) of שָׁבַר seems to have little bearing on whether the meaning is resultative or process. To see this specifically with reference to Waltke and O’Connor’s examples of direct vs. indirect action, we examine Ezekiel 27:26 and

83. The question of whether שָׁבַר is more likely to indicate indirect action in the D stem than in the G stem will be investigated in chapter 5 (§5.4.1).
Psalm 48:8. For the G stem, Ezekiel 27:26b reads: יָדַֽהְתָּם שַׁפֶּרֶת נַחֲמָה: ‘The east wind broke you in [the] heart of [the] seas’. This is indeed direct action, since the subject (the wind) is doing the breaking. However, since Waltke and O’Connor do not argue that every direct action is process (which would leave them with very few factitive/resultative examples), the mere fact that it is direct action does not guarantee that the meaning is process rather than result. Note in this case that the meaning of an effected state would fit the context equally well: ‘The east wind made you broken’. In fact, because the following verse describes all the contents of the ships sinking, one might argue that the focus is on the resulting broken state rather than on the process of breaking, but that would be a D-stem meaning according to Waltke and O’Connor.

For their indirect action D stem example, Psalm 48:8 reads: כִּבְסָךְ שַׁפֶּרֶת אֲנָוָה הַקָּדִים: ‘With an east wind you break the ships of Tarshish’. This is indeed indirect action, since the subject (you) is breaking the ships by means of an east wind. Since the subject is not the one actually doing the breaking, it seems plausible that the focus is on the resulting state rather than the process, just as Waltke and O’Connor propose. On the other hand, the fact that the instrument of their breaking is mentioned (i.e., an east wind) suggests that the process is in view. So this D-stem example might be either process or resultative, just like the G-stem example in Ezekiel 27:26b; direct vs. indirect action ends up not being adequate evidence in either case.

כִּבְסָךְ occurs 16 times in the G stem and 12 times in the D stem. In most cases, there is no evidence on which to decide if כִּבְסָךְ means ‘to split’ or ‘to make split’. For example, Isaiah 48:21b reads: יָכִ֣שׁוּ וְרִבְגָּמָּה יָבֹ֥ער נַהֲבָ֖ה חֹם: ‘and he split a rock, and water gushed out’, and Psalm 78:15 reads: יָכִ֖שׁוּ וְרִבְגָּמָּה נַהֲבָ֖ה חֹם: ‘he split rocks in the wilderness, and gave them drink abundantly like ocean depths’. A process meaning (‘he split’) and a resultative meaning (‘he made split’)
both seem possible in both occurrences. Yet בַּקֵעַ is in the G stem in Isaiah 48:21 but in the D stem in Psalm 78:15. 84

There are, however, two cases (2 Kings 8:12; 15:16) that likely mean ‘to make split’ (resultative). Both are in the D stem as Waltke and O’Connor predict. There are also three cases (2 Samuel 23:16; Ezekiel 13:11; 1 Chronicles 11:18) that likely mean ‘to split’ (process); two are in the G stem as Waltke and O’Connor predict, but one of them is in the D stem. Ezekiel 13:11b reads וֹתְּבַקֵּעַ, ‘and a wind of gales will split [i.e., ‘break out’]’. Since the subject is the one breaking out, and there is no undersubject, it is impossible for this to be the subject causing a passive undersubject to be in a state, yet it is in the D stem, contrary to their hypothesis.

In summary, in twenty-three of the twenty-eight occurrences of בַּקֵעַ, there is no evidence either for or against the distinction that Waltke and O’Connor claim between the G and D stems of בַּקֵעַ. Of the five occurrences where there is evidence, four support their hypothesis, and one is incompatible with it. Thus בַּקֵעַ supports their hypothesis, albeit with one exception.

4.3.2d Other Resultatives (Multiple Objects): נֹשֶׂךְ, נֹשֶׁךְ

Waltke and O’Connor label their final category of resultatives as ‘other’ (1990, 409–10), but it should be labeled ‘multiple objects’, since their discussion and examples all describe the D stem being used with multiple objects, in contrast to the G stem, for which all of their examples in this section have a singular object. 85

84. One might argue that the G stem of בַּקֵעַ is used for a single object and the D stem for multiple objects, but there are several counterexamples (e.g., Amos 1:13; Qohelet 10:9; Habakkuk 3:9).
85. Their text also refers to the possibility of multiple actions, but since none of their examples show multiple actions with a single object, and since they have a separate category of
Is action upon multiple objects necessarily resultative? Waltke and O’Connor are ambiguous on this point. On the one hand, the structure of their chapter classifies these verbs as resultative (their §24.3.3 ‘other’ is a subsection of their §24.3 ‘resultative’). On the other hand, they describe and then reject Jenni’s argument that a plurality of actions must refer to the result rather than the action: “we do not find [Jenni’s arguments] compelling, for a plurality of actions, it seems to us, can be presented in actu” (1990, 409). Unfortunately, Waltke and O’Connor do not address the fact that they have just admitted that these verbs are not necessarily resultative and hence do not fit their model of the D stem as describing the subject putting a passive undersubject in a state (i.e., that they are resultative).

Jenni’s argument (1968, 148) is that because actions are not simultaneous, any verb that reports a series of actions is necessarily summarizing their result. Jenni is correct that using a single verb to report multiple actions is intrinsically a summary. Jenni does not, however, explain why the summary must be a summary of the result, instead of a summary of the process. On the contrary, it seems quite possible to summarize a process. For example, consider the sentence, “Slowly and methodically, using a sawing motion, he cut at loaf after loaf of rock-hard bread with a dull knife all day long, but he was unable to even scratch the surface of a single loaf.” It describes multiple objects and a series of actions, yet the multiple adverbial phrases indicate a focus on the process. Furthermore, ‘to cut at’ is affirmed, yet it is stated that there was no result.

frequentative verbs (1990, 414–6), ‘multiple objects’ is the focus of this category. Recall that multiple objects is one type of verbal plurality (§2.4); this fact will be investigated in chapter 6.

This indicates that ‘to cut at’ summarizes the process, not the result, in this sentence. Therefore, in agreement with Waltke and O’Connor, and pace Jenni, it does seem possible to have a verb describe a process carried out on multiple objects.

Since having multiple objects or actions does not guarantee that a verbal meaning is resultative, this section checks Waltke and O’Connor’s two example verbs (נשך and נשק) to see if there is evidence in context that their D stem is resultative as they define it, irrespective of whether it refers to multiple actions.87

1 נשתך ‘to bite’ occurs eight times in the G stem and twice in the D stem. According to Waltke and O’Connor’s hypothesis, the G stem describes the process of biting, whereas the D stem describes the result ‘to make bitten’. In nine of the ten occurrences there is no evidence in context that allows us to distinguish between ‘to bite’ and ‘to make bitten’. To see this, compare Jeremiah 8:17 with Amos 9:3. Jeremiah 8:17 reads ‘Indeed, look! I am sending serpents among you, adders for which there is no charm, and they will bite you,’ declares YHWH’. Amos 9:3b reads ‘from there I will command the serpent, and it will bite them’. In both cases, a process meaning ‘to bite’ seems most natural, but I can see no reason that a meaning ‘to make bitten’ would not work. Yet the Jeremiah text uses the D stem of 1 נשתך, whereas the Amos text uses the G stem.

There is, however, one text that allows us to distinguish a process meaning from a resultative meaning. Micah 3:5 reads
Thus says YHWH concerning the prophets who lead my people astray, the ones who, when they are biting with their teeth, they cry out “peace”’. The grammar of this sentence is awkward; it seems to describe the prophets as ones who give a favorable oracle when they have something to eat (i.e., they are well paid). The focus is therefore on the behavior of the prophets. Also, the verb נָשְׁךָ is a substantival participle, describing the ones who do the action. Furthermore, there is no direct object, so the effect on the thing that is bitten is unimportant. Thus נָשְׁךָ has a process meaning in Micah 3:5. Since it is in the G stem, this fits Waltke and O’Connor’s hypothesis.

נָשְׁךָ occurs 26 times in the G stem and 5 times in the D stem. In none of these occurrences is the effect of the kiss on the recipient in view, so there are no instances in which a meaning ‘to make kissed’ is plausible. Thus the verb נָשְׁךָ does not support Waltke and O’Connor’s hypothesis that the G stem describes the process and the D stem describes the result.

In summary, Waltke and O’Connor’s example verbs of ‘other irreal resultatives’ provide one occurrence in the G stem that clearly has a process meaning, but no evidence that the D stem has a resultative meaning.

4.3.3 Denominal Examples

Waltke and O’Connor’s hypothesis is able to explain why the D stem is the stem most commonly used to form denominal verbs (Waltke and O’Connor 1990, 410; Ryder 1966, 62-3; cf. Gerber 1896). According to their hypothesis, the D stem fundamentally describes bringing about the state described by the root, so it is natural that to create a verb from an adjective (one type of denominal verb), the D stem would be used to express the bringing about of that
adjectival state. For example עור → D stem ‘to make blind’. From this pattern it seems a small step to a verb that is made from a noun and indicates the creation of that noun. For example ענן → D stem ‘to form clouds’. Furthermore, one can imagine that in some contexts an implied negation would be needed frequently, from which the privative use of the D stem could develop in which a D-stem verb is made from a noun and indicates the destruction or removal of that noun. For example, זנב → D stem ‘to cut off the tail’ (i.e., the rear part); חטא → D stem ‘to cleanse from sin’; שור → D stem ‘to uproot’.

Note, however, that this explanation is diachronic – it traces the origin of the form as its meaning changed over time – whereas Waltke and O’Connor’s hypothesis is synchronic. This is significant because a D-stem verb whose meaning evolved as described above does not necessarily have a resultative meaning in the end. For example, even though the verb עור in the D stem means to make someone blind, and even though it may have started out as referring to the establishment of the state of blindness, this does not guarantee that in the biblical period it always has the factitive/resultative meaning ‘to make blind’ in distinction from the process meaning ‘to do the process of blinding someone’. This is particularly likely to be problematic for verbs which lack separate G and D stems to distinguish the process from the result.

Furthermore, this explanation for the D stem of denominal verbs does not depend on Waltke and O’Connor’s hypothesis that the D stem is always factitive or resultative and hence always describes the subject as placing a passive undersubject in a state. Instead, the explanation depends solely on the factitive use of the D stem.
Thus the real test of Waltke and O’Connor’s hypothesis with denominal verbs is its ability to explain the difference between the D stem and the G stem for denominal verbs that occur in both stems. Of the verbs that Waltke and O’Connor list as examples of denominal verbs, there are seven that occur in both the D and G stems: שָׁם, אָֽחלֵי, אָדוֹת, וּלְ, חָנָ֣ה, וּעֲרָבִ֔י, and אֹ֫הֶל.

אָֽחלֵי. Based on the noun אָֽחלֵי ‘tent’, the verb אָֽחלֵי is thought to be denominal. It occurs twice in the G stem and once in the D stem. For the G stem, Genesis 13:12b reads לֹאות יָשָׁב כַּפּוֹרִים וְעָרָיִם יַעֲשֹׂה, ‘But Lot settled among the cities of the circle and pitched his tent as far as Sodom’. The other G stem occurrence, Genesis 13:18a, reads כּוֹסְר וַתִּשְׁבָּה בָּאֲרָיִם אֲשֶׁר אֹהֶל, וַיַּהֲלֹא בְּעָרֵי שׁוֹם, ‘And Abram pitched his tent and came and settled among the oaks of Mamre, which are in Hebron’. The D-stem occurs in Isaiah 13:20 כָּל אֲוָרֵי שֵׁם לַא תְּשַׁבְּתוּ אֵלָה וְשָׁם לְאַבְרָם הָאֵל יָשָׁב, ‘It will never be inhabited. And it will not be dwelt in for all generations. And an Arab will not pitch his tent there. And shepherds will not make their flocks lie down there’.

In all three occurrences, the resultative meaning ‘to make a tent pitched’ seems more likely than a process meaning ‘to do the process of pitching a tent’. For the G-stem examples, the important thing in the narrative is not the process of pitching their tents but rather where Abram and Lot ended up living as a result of where they pitched their tents (resultative). For the D-stem example, the point of the verse is that Babylon will be uninhabited, which fits nicely as a result of no one making their tent pitched there (resultative). Therefore, אָֽחלֵי does not support Waltke and O’Connor’s hypothesis for the difference between the D and G stems.

אָדוֹת ‘to cover’ is thought to be a loanword from the Akkadian D-stem verb 𒊗𒇶, which is thought to be denominative based on the Akkadian noun iḫzu ‘a setting’ (Koehler et al. 127).
And he built the structure on the entire house. Its height was five cubits. **And he covered** the house with cedar planks'. Its one D-stem occurrence is in Job 26:9 ‘**He covers** the moon’s face, stretching his cloud over it’.

Although a description of the action or of the result could fit both examples, both seem somewhat more likely to have the nuance opposite what Waltke and O’Connor’s hypothesis leads us to predict. The G-stem occurrence in 1 Kings 6:10 seems more likely to be a resultative, since the passage seems to focus on the resulting structure of the temple rather than on the building process. The D-stem occurrence in Job 26:9 seems more likely to describe the process, since it describes something that does not last (covering the moon with a cloud) and since the parallel clause describes the process.

דשׁון ‘**to be/make/remove** fat’ might be a denominal verb from פֶּ֫שֶׁן ‘fat’, but this is uncertain (Koehler et al. 2000, s.v.). It occurs once in the G stem, Deuteronomy 31:20b ‘And he has eaten and is satisfied and has become fat’. Of the five times that it occurs in the D stem, it refers to collecting or removing fat twice (Exodus 27:3; Numbers 4:13), considering an offering to be fat once (Psalm 20:4), pouring oil on someone’s head once (Psalm 23:5), and refreshing someone’s bones once (Proverbs 15:30).

Unlike the two previous denominal verbs, the G stem and D stem do not have approximately the same meaning. Instead, the G stem (Deuteronomy 31:20) has the meaning of a

88. It is possible that this is个工作 ‘to seize’ used in the sense of ‘to attach’. If so, then there are no G-stem examples.
stative verb, for which the D stem is either the corresponding process or the corresponding factitive/resultative. Four of the five occurrences of the D stem seem to work equally well as a description of either the process or the resulting state. The D stem in Proverbs 15:30, however, does seem to describe the subject putting a passive undersubject in a state, as Waltke and O’Connor’s hypothesis predicts, rather than describing a process: ט֜וֹבָ֗ה ה֥ עֵוּ וּמְשׁבֵּ֫ל־מּוְיִנֵ֭י תְדַשֶּׁן׃ ‘Brightness of eyes causes a heart to rejoice // And good news refreshes [lit. ‘makes fat’] bones.’

In summary, the verb תְדַשֶּׁן does support Waltke and O’Connor’s hypothesis: the single G-stem occurrence has a process meaning, and of the 5 D-stem occurrences, the one unambiguous occurrence has a resultative meaning as Waltke and O’Connor define it.

חטא. Although the etymological information in (Koehler et al. 2000, s.v.) does not suggest that it is a denominal verb, Waltke and O’Connor treat חטא as two verbs derived from two nouns. From the noun חַטָאָה ‘sin offering’ they derive the D-stem verb חטא ‘to present a sin offering’. From the noun חֵטְא ‘sin’ they derive the D-stem verb חטא ‘to remove sin’. חטא occurs 181 times in the G stem, usually with the meaning ‘sin against’ or ‘offend’, but occasionally with related meanings like ‘to miss a mark’. In the D stem it occurs fifteen times, once with the meaning ‘bear the loss of something’ (Genesis 31:39), three times with the meaning ‘offer something as a sin offering’ (Leviticus 6:19; 9:15; 2 Chronicles 29:24), and the remaining eleven times with the meaning ‘cleanse from sin’.

The G stem follows Waltke and O’Connor’s hypothesis, in that it consistently describes a process rather than a passive undersubject being placed in a state. The one possible exception
(where the G stem might be resultative) is Proverbs 20:2:2 נִמְּשָׁהְוּ דַּבֵּֽרֵים אַל֖וֹת מַלְאֶךְ וּמַחֲטֵֽבּוֹת ְהוֹֽה׃ ‘The terror of a king is like the growling of a lion. One who angers him forfeits his life’. 89

In the D stem, a process meaning (e.g., ‘to cleanse from sin’) and a resultative meaning (e.g., ‘to make cleansed from sin’) seem equally possible, with one exception. Leviticus 6:19 reads נִמְּשָׁה הַמַּחֲטֵֽבּוֹת אֲלֵהֶםּ נִמְּשָׁהְוּ מַמְּשָׁהְוּ מַחֲטֵֽבּוֹת תֵּאָכֵל לַגְּדוּל הַמִּזְבֵּכתָּהּ אַלּ לְתוֹם מִּשְׁפָּט. ‘The priest who offers it for sin shall eat it. In a holy place it will be eaten, in the court of the tent of meeting’. This is likely to have a process meaning (contrary to the hypothesis) because both the context and the grammar (an attributive participle) indicate that the priest and his actions are in focus, not the result.

In summary, 180 out of 181 occurrence of מַחֲטֵֽבּוֹת in the G stem clearly have the nuance that Waltke and O’Connor’s hypothesis predicts, but the one remaining occurrence has the opposite nuance. Fourteen out of fifteen occurrences of the D stem are ambiguous, but the one remaining occurrence has the opposite meaning from what they predict. Thus both the D stem and the G stem of מַמְּשָׁהְוּ provide slight evidence against their hypothesis.

1. Waltke and O’Connor list מַמְּשָׁהְוּ ‘to act graciously’ as denominal, perhaps based on the noun מַחֲטֵֽבּוֹת ‘grace, charm’. It occurs 55 times in the G stem, always meaning ‘to favor or be gracious to someone’. In all cases, the G stem seems to be able to have either a process meaning (‘to favor someone’) or a resultative meaning (‘to make someone a recipient of favor’).

It occurs once in the D stem: Proverbs 26:25 reads מַמְּשָׁהְוּ דַּבֵּֽרֵים אֲלֵיהֶםּ בַּל מַמְּשָׁהְוּ דַּבֵּֽרֵים מַמְּשָׁהְוּ דַּבֵּֽרֵים מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוּ מַמְּשָׁהְוִּי. When he makes his voice gracious, do not believe him, for seven abominations are in his

89. The undersubject could be reflexive. The fact that the result is unwanted and unintended by the subject, as well as carried out by another, however, suggests that one could argue that it is passive rather than reflexive.
heart’. The D-stem describes making one’s voice sound gracious, which is compatible with Waltke and O’Connor’s hypothesis (cf. ‘to make a stick broken’) except for the fact that the undersubject is the subject’s own voice, so one might argue (see §4.5) that the undersubject is not passive as Waltke and O’Connor’s hypothesis requires. In fact, it seems possible that the D stem fits Waltke and O’Connor’s hypothesized meaning of the H stem: ‘to make one’s voice seem like it is doing the process of favoring someone’. Thus חנן־י may provide slight evidence against Waltke and O’Connor’s hypothesis.

Waltke and O’Connor treat ידע as denominal, based on the verb ידוע, ‘expert’. The verb ידע occurs 821 times in the G stem (‘to know’) and once in the D stem (‘to cause to know’).

Because the verb occurs more than 400 times in the G stem, we sampled it using the procedure described in §3.2. Of our 127 samples of the G stem, it clearly fits Waltke and O’Connor’s hypothesis 118 times. The nine remaining times, a passive undersubject seems possible but not required. Those nine times have two different meanings: Four times (Genesis 18:19; Exodus 33:12; Jeremiah 1:5; Amos 3:2) it could mean either ‘to choose’ (process) or ‘to make chosen’ (resultative). Five times (2 Samuel 7:20; Hosea 13:5; Nahum 1:7; Psalm 37:18; Psalm 144:3) it could mean either ‘to know’ (process/state) or ‘to take care of’ (process) or ‘to make taken care of’ (resultative). For example, Nahum 1:7 reads וַיִּֽהְֽבָּֽעֲרָּֽי לַמְּעָֽשָֽׂהּ לְרֹאֲֽתָֽו לְרֹאֲֽשָֽׂי נַחֲמָֽו יְהוָ֔ה בֶּֽעַֽד יָֽהִֽי׃ ‘YHWH is good, a stronghold in a day of trouble. And he knows [he takes care of? he makes taken care of?] those who take refuge in him’.

90. It is unclear if Waltke and O’Connor consider all uses of ידע to be denominal or not. Their sole example is Job 38:12, discussed below.
The sole D-stem occurrence of יד (Job 38:12) reads רַקֹּבַּיתִי מַמְקֹוֹמּוֹ׃

‘Have you commanded the morning since your days began and caused the dawn to know its place?’ This could have either a resultative meaning (‘he caused the dawn to know its place’) or a process meaning (‘he informed the dawn of its place’). Furthermore, because ‘the dawn knowing its place’ means that dawn occurs at the correct time, the D stem arguably describes the undersubject being caused to perform an action rather than being placed in a state. This last possibility fits Waltke and O’Connor’s description of the H stem, not the D stem.

Thus יד is compatible with Waltke and O’Connor’s hypothesis, but the only instance of the D stem and several of the instances of the G stem are also compatible with meanings that violate Waltke and O’Connor’s hypothesis. So יד offers slender support for their hypothesis.

In summary, Waltke and O’Connor are able to explain why the D stem is the dominant stem that is used for denominal verbs, but this is a consequence of the factitive use of the D stem, so it is not unique to their specific hypothesis. Their hypothesis is that non-factitive D-stem verbs are resultative and that factitive and resultative verbs are connected because both describe a subject placing a passive undersubject in a state, whereas a G-stem verb describes a state or a process. When we checked their examples of denominal verbs, we did not find a consistent distinction between the D and G stems; if anything, most of the verbs gave slight evidence against their proposal. Waltke and O’Connor suggest that violations of their hypothesis may be due to the G and D stem being formed at different times or from different base words (1990, 411). This can explain cases where the G and D have very different meaning, such as 1 עָצַמַּי G ‘to be strong’ and 2 עָצַמְּי D ‘to gnaw bones’. But it cannot explain 1 עָזַזְּי 2 אַחֲזֵי where the verb
has roughly the same meaning in the G and D stems, and those meanings are not distinguished as Waltke and O’Connor’s hypothesis leads us to expect.

To look for patterns, it would be good to analyze all denominal verbs as a set. Unfortunately, as Waltke and O’Connor admit (1990, 410), it is often difficult to detect if a verb is denominal. Therefore, denominal verbs will be analyzed together with all other verbs in §4.4.

4.3.4 Frequentative Examples

Waltke and O’Connor (1990, 414–6) discuss verbs that they characterize as denoting frequentative action, either repeated in time or distributed over space. Prominent groups of such verbs include verbs of movement, verbs of vocal expression, and verbs of professional or habitual activity.

These verbs are syntactically intransitive in the G stem. Most of them are also syntactically intransitive in the D stem. In §2.1.2 we discussed the fact that Waltke and O’Connor’s hypothesis cannot account for verbs that are syntactically intransitive in the D stem. They admit that most of these frequentative verbs are intransitive in the D stem (1990, 414–5), but they do not address the issue that their hypothesis requires all D-stem verbs to be transitive.

Even for frequentative verbs that are syntactically transitive in the D stem, however, if the distinction between the G and D stems is only that the D stem is marked as frequentative, such a verb would not fit Waltke and O’Connor’s hypothesis. Instead, Waltke and O’Connor’s hypothesis requires the D stem to be factitive/resultative, meaning that it describes the subject as putting a passive undersubject in a state. Waltke and O’Connor, in fact, admit that these verbs are not factitive/resultative (1990, 415). This is problematic for their hypothesis, because such a
pattern of verbal meanings constitutes a counterargument to the claim that their hypothesis unifies the patterns of meanings of the D stem. Therefore, chapter 5 (§5.7) investigates to what extent verbs with this meaning (frequentative) exist.

Setting aside for the moment the question of whether there is a pattern of verbs that are frequentative in the D stem, this section checks Waltke and O’Connor’s examples of frequentative D-stem verbs (ארב, דל, מֵל, חת, תשב, נאות, תעֵש, חות, תפר, שָׁר) to see if they are resultative as Waltke and O’Connor define that term.

ארב. Of the 20 times that the verb ארב ‘to wait in ambush’ occurs in the G stem and of the two times that it occurs in the D stem, we found none that could be interpreted as the subject causing a passive undersubject to enter a state. This is the case because the meaning of the verb describes the subject’s action, not an affect on the one for whom the subject lies in wait. For example, in Judges 16:2, the Gazites waited in ambush for Samson (ארב G stem), but he left town (Judges 16:3) before they sprang their trap, so their action had no result. Therefore, the verb ארב in Judges 16:3 indicates the action of the subject, not the result on an undersubject. As another example, Judges 9:25a uses a D-stem participle of ארב to refer to professional ambushers: שְׁכֶם בַעֲלֵי לוֹ וּמִי שָׁר יְמַעְרֵב לְעַר שַׁעֲרֵי הַרְיֹם וְעַל יָרָאָהָרֶנֶר עַלְיָם בֶּרֶךְ ‘And the leaders of Shechem set ambushers against him on the mountain tops, and they robbed all who passed over them on the road’. The substantival participle of ארב in Judges 9:25a focuses on the subject who does the action, not on the result of the action. Thus ארב seems never to have a resultative meaning, regardless of whether it is in the G or D stem.
In some sense, this is not a surprise, since Waltke and O’Connor label לָכַר and similar verbs as having a frequentative meaning in the D stem rather than as having a factitive/resultative meaning. But it is a surprise that despite laying out a beautifully logical theory of the Hebrew stems (1990, 354–9), they do not address the fact that in setting up this category of frequentative verbs, they are acknowledging an entire category of D stem verbs that do not fit their theory. Although individual verbs can be discounted as having a lexicalized D stem (§2.6), any pattern of meaning that is followed by a significant number of verbs needs to be explained, and that is what Waltke and O’Connor fail to do in the case of frequentative verbs.

דָּלַג. Of the 4 times that לָלַג ‘to leap’ occurs in our source in the D stem and the one time that it occurs in the G stem, it never describes the subject putting a passive undersubject in a state. This is to be expected, since it describes an action (leaping) that is expected not to effect the thing over which the subject leaps.

הלך. The verb לָחֻך ‘to walk’ occurs 1419 times in the G stem in our source, so it was sampled using the procedure described in §3.2. Of the 147 G-stem samples and the 25 times that it occurs in the D stem, we found none that could plausibly be interpreted as the subject causing a passive undersubject to enter a state. This is to be expected, since לָחֻך does not take a direct object in the G or D stems.

חָכָה. The verb לָחָכ ‘to wait’ occurs once in the G stem and 13 times in the D stem in our source. In none of those cases can it plausibly be analyzed as a subject placing a passive undersubject in a state, as Waltke and O’Connor’s hypothesis requires in the D stem.
‘to write’ occurs 93 times in the G stem and twice in the D stem in our source. Due to the meaning of the word, almost all occurrences (both G and D) can plausibly be analyzed as a subject (the writer) putting a passive undersubject (the thing written) in a state (having been written). The two occurrences of כּ in the D stem both occur in Isaiah 10:1 and Exodus 24:12 is in the G stem. 

Yet Isaiah 10:1 is in the D stem and Exodus 24:12 is in the G stem. All occurrences of כּ in the D stem are compatible with Waltke and O’Connor’s hypothesis but do not require it. On the other hand, the same can be said of almost all G-stem examples. For example, Exodus 24:12 reads כּ וַיֹּאמֶר יְהוָה אֶל־מֹשֶׁה, וְהַתּוֹרָה וְהַמִּצְוָה לְהוֹרֹתָם׃ And YHWH said to Moses, “Come up to me to the mountain and be there, so that I can give you the stone tablets [with] the law and the commandment that I have written for their instruction.” The purpose of the writing is specified, just as it was in Isaiah 10:1, so it might be resultative, with a focus on the outcome of the writing. Yet Isaiah 10:1 is in the D stem and Exodus 24:12 is in the G stem.

There are, however, seven occurrences, all in the G stem, for which there is evidence in context that the verb describes the process of writing rather than the result. For example, Jeremiah 36:17 reads כּ וַיֹּאמֶר בָּרוּךָ. And they asked Baruch, saying, “Tell us, how did you write all these words? [Did they come] from his mouth?” In this passage, the scribe Baruch is being asked about the process by which he wrote the words in a scroll, specifically if he wrote them at dictation. All examples like this are in the G
stem, so they provide some level of support to Waltke and O’Connor’s hypothesis. But because there are no D-stem examples that specifically indicate a resultative meaning, the support is modest.

‘to commit adultery’ occurs 16 times in the G stem and 15 times in the D stem in our source. All 31 occurrences seem to describe the action of the subject; none of them can reasonably be analyzed as describing as a subject (the adulterous person) putting a passive undersubject (their partner) in a state (having committed adultery).

‘to cry out’ occurs once in the D stem and 48 times in the G stem. In none of those occurrences could it plausibly be analyzed as a subject causing a direct object (the thing cried out) to be in a state (having been cried out). Instead, the focus always seems to be on the subject’s action of crying out.

‘to wait’ occurs 6 times in the G stem and 41 times in the D stem. Like its synonym חכה, no occurrences can be analyzed as a subject causing a passive undersubject (the one waited for) to be in the state of being waited for. A G-stem example is Psalm 25:3a נב כַלְּאָוֹדָה לָא בַלְשָׁהוּ ‘Indeed, all those who wait for you will not be ashamed’. A D-stem example is Psalm 25:21 קִוִּיתִי: ‘Integrity and uprightness – may they preserve me, for I wait for you’.

‘to sew’ occurs 3 times in the G stem and once in the D stem. One of the G-stem occurrences (Qohelet 3:7) has a process meaning. In the two other G stem occurrences (Genesis 3:7 and Job 16:15), a meaning of the subject causing a passive undersubject to be in a state seems possible. For example, Job 16:15 reads כִּי כַּפָּרָה אֲנָה אֱלֹהֵי, מִשְׁפָּרָה לְפִנַּי: ‘Sackcloth I have sewed on my skin, and I have thrust in the dust my horn’. Sackcloth (שַׂק) is normally
‘worn’ (עָזר 11 times; e.g., 2 Samuel 3:31) or ‘put on’ (שָׁמַת 4 times; e.g., Genesis 37:34), so in Job 16:15, the fact that it is sewn on (_actorוֹ) suggests that the focus may be on the fact that the sackcloth is on his body to stay, which would be a resultative sense.

By contrast, the one D stem example seems to focus on the subject’s action rather than on the resulting state; Ezekiel 13:18 reads אָמַר יִהְיוּ וּלָֽאַלְמָנָ֔ה יֹעֲמַדְוּ לְעַ֝מִּי... יִפְרָדָֽו פְּרָדָֽו וְאָמַרְתָּ...וַעֲמַדְתָּ לְעַ֝מִּי יֹעֲמַדְוּ לְעַ֝מִּי יַעֲמַדְוּ לְעַ֝מִּי יַעֲמַדְוּ לְעַ֝מִּי. And say, ‘Thus says Lord YHWH, ‘Woe to the women who sew bands on all wrists of my hands and who make the veils on the head[s] of every size to hunt down lives! Will you hunt down the lives of my people while preserving your own lives?’’. Because the focus is on the women who do the sewing, and there is no further mention of the bands that are sewn, this seems to be a process meaning (‘to sew’) rather than a resultative meaning (‘to make sewn’). Thus the only occurrence of המָר in the D stem contradicts Waltke and O’Connor’s hypothesis.

שָׂר ‘to (give/take) a tenth’ occurs twice in the G stem and 7 times in the D stem in our source. Out of the 9 total occurrences, 6 of them could have either a process or a resultative meaning; there is no evidence in context to decide either way.

Three of the occurrences of שָׂר, however, seem to have a process meaning. Deuteronomy 26:12a reads כִּי תְכַלֶּ֛ה לְשָׂר אֲרָכָ֖יִם וַעֲמַרְתָּ בִּשְׂרֵי גֵּדָה בִּשְׂרֵי גֵּדָה בִּשְׂרֵי גֵּדָה בִּשְׂרֵי גֵּדָה When you finish tithing all the tithe of your produce in the third year, the year of the tithe, then you shall give it to the Levite, to the resident foreigner, to the orphan, and to the widow’. One finishes (כָלָה) a process, not a result, so this has a process meaning, rather than a result. Nehemiah 10:39 is similar, in that it uses ב with the infinitive construct of שָׂר to indicate
the time during which the process of tithing occurs. Nehemiah 10:38b also has a process meaning, but for a different reason. It reads: ‘וּמִי נְשַׁרְתָּם בְּכָל עֵבֶֽרָֽהִנָּה: ’and they are the Levites who receive tithes in all the cities of our work’. The use of an attributive participle of עֲשֹׂר indicates that the focus is on the ones who do the process, not on the result. Since they have a process meaning, these three examples should all be in the G stem according to Waltke and O’Connor’s hypothesis, but all three are in the D stem. Thus out of 9 occurrences of עֲשֹׂר, 6 are ambiguous, and 3 provide evidence against Waltke and O’Connor’s hypothesis.

In summary, Waltke and O’Connor were correct to place frequentative verbs in a category separate from factitive or resultative, since a frequentative meaning is not a factitive/resultative meaning. Of the ten verbs that they cite as examples, none have any clear occurrences of a factitive/resultative meaning in the D stem, seven of them (אָרְבָּא, דָּלָּל, חָלָּל, נָאָק, צַעְק, קָוָּד) consistently have a process meaning in both stems, and two others (שָׂרָה and עֶשֶׂר) have clear examples of a process meaning in the D stem, so 9 of the 10 verbs provide counterexamples to the D stem being factitive/resultative.

What is the significance of this fact? If these verbs have no pattern (i.e., frequentative) to their meaning, then they may simply be the result of lexicalization of individual verbs (§2.6), and hence one should not expect them to be accounted for by a hypothesis of the D stem. On the other hand, if there is a pattern of verbs whose D stem indicates frequentative action, that pattern cannot be written off as lexicalization, and any hypothesis of the D stem needs to account for that fact – something Waltke and O’Connor’s hypothesis does not do. Therefore, chapter 5 (§5.7) investigates if there is indeed a group of verbs that have a frequentative meaning in the D stem.
4.3.5 Mixed Forms Example: גאל

Waltke and O’Connor (1990, 416–7) discuss one verb (גאל ‘defile’) for which the D stem is the factitive of the N stem, not the G stem. גאל occurs once in the D stem (Malachi 1:7), three times in the N stem (Isaiah 59:3; Zephaniah 3:1; Lamentations 4:4), and four times in the Dp stem (Malachi 1:7, 12; Ezra 2:62; Nehemiah 7:64). The N stem appears to have a stative meaning ‘to be in a defiled state’. The Dp appears also to have a stative meaning ‘to be in a defiled state’ in Malachi 1:7, 12, whereas in Ezra 2:62 and Nehemiah 7:64, it means ‘to be excluded’ (מִן־הַכְּהֻנָּה ‘from the priesthood’ in both cases), which might be stative or fientive or factitive/resultative. The sole D-stem occurrence, Malachi 1:6b-7, reads: אֶת־שְׁמֶֽלֹּויָ֖ו יִשָּׁ֑לְזָה בָּהֵן וְלַאֲמַרְתֶּ֔ם הה, 'But you say, “How have we treated you with contempt?” By offering on my altar defiled [Dp] food. And you say, “How have we defiled you?” By saying that YHWH’s table may be treated with contempt’. According to Waltke and O’Connor’s hypothesis, the D-stem verb can be expanded as “How have we put you in a defiled state?” In context, this seems possible. On the other hand, since the context focuses on the action of the subject rather than on the effect on the object, it seems possible that it has a process meaning (‘to defile’; the middle column of table 17) rather than a factitive/resultative meaning (‘to make defiled’; the right column of table 17). Thus גאל is compatible with Waltke and O’Connor’s hypothesis, but does not provide evidence that specifically supports it.

4.4 Looking for a Passive Undersubject in All Verbs

In §4.3 we examined every occurrence in the G and D stems of the 42 verbs that Waltke and O’Connor use as their examples of the D stem, evaluating the likelihood of each occurrence that it describes the subject placing a passive undersubject in a state (i.e., factitive/resultative),
which is what Waltke and O’Connor say is the unifying characteristic of the D stem. We did not find the D stem to be more likely than the G stem to have that meaning. In many cases, we found examples of G and D stem occurrences that fit their hypothesis, but we found at least as many counterexamples, where the D stem seems to have a process meaning (‘to break a stick’; the middle column of table 17), as well as examples where the G stem seems to have a factitive/resultative meaning (‘to make a stick broken’; the right column of table 17).

To study this issue more comprehensively, this section examines almost every occurrence in the G and D stems of every verbal root that occurs in the D stem. As before, we use the criteria in table 18 to check if there is evidence in context that a particular occurrence does (or does not) describe the subject as causing a passive undersubject to enter a state, that is, if it is factitive/resultative as Waltke and O’Connor define those terms (the right column of table 17).

4.4.1 Summary of All Verbs

A summary of our test data on all verbs in our sample is shown in table 20. Figure 1 shows the same data, using one pie chart for each column of table 20.
Table 20: Occurrences of a Passive Undersubject

<table>
<thead>
<tr>
<th>Condition</th>
<th>G stem</th>
<th>D stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive undersubject is UNLIKELY</td>
<td>5615 (76.8%)</td>
<td>2275 (44.5%)</td>
</tr>
<tr>
<td>Passive undersubject is POSSIBLE</td>
<td>1639 (22.4%)</td>
<td>2616 (51.2%)</td>
</tr>
<tr>
<td>Passive undersubject is LIKELY</td>
<td>53 (0.7%)</td>
<td>223 (4.4%)</td>
</tr>
<tr>
<td>Total number of occurrences</td>
<td>7307</td>
<td>5114</td>
</tr>
</tbody>
</table>

Figure 1: Occurrences of a Passive Undersubject

Note from table 20 and figure 1 that the trends follow Waltke and O’Connor’s hypothesis: the D stem is more likely to have a passive undersubject than the G stem. Nevertheless, even for the D stem, there is evidence for a passive undersubject less than 5% of the time. Furthermore, for almost half of D-stem occurrences, there is evidence in context that there is not a passive undersubject being placed in a state. So although Waltke and O’Connor’s proposal agrees with the trend from the G stem to the D stem, when we look for the subtle distinction that they posit between a process meaning and a resultative meaning (the middle vs. the right column of table 17), we actually find far more D-stem occurrences that are on the wrong side of that distinction than are on the correct side.
To better understand the data in table 20 and figure 1, we can ask whether the plausibility of a passive undersubject is evenly distributed among various verbal roots, or whether the compatibility with Waltke and O’Connor’s hypothesis depends on the root. To answer this question, the histogram in figure 2 redisplay the D-stem data from figure 1, adding the orange and gray pie slices of the D-stem pie together (since they indicate that a passive undersubject is at least plausible), and plotting each verbal root (e.g., אבד) as a separate item, adding it to the height of the bar that indicates the percentage of its occurrences for which a passive undersubject is plausible.

---

91. It would be natural to show a plot like figure 2 of the occurrences that are likely to be factitive/resultative (the gray slice in figure 1), but there are so few of them that it is not a helpful plot, so we group them together with the occurrences for which such a meaning is at least possible (the orange slice in figure 1).

92. The 0% bar in figure 2 counts the verbal roots for which it is never plausible that it has a factitive/resultative meaning in the D stem. Each other bar totals up the occurrences since the previous bar up to its labeled percentage. So the 10% bar counts the verbal roots for which there are some plausible occurrences, but no more than 10% of all occurrences. The 99.9% bar counts the verbal roots for which more than 90% (but less than 100%) of the occurrences have that meaning. The 100% bar counts the verbal roots that always plausibly have a factitive/resultative meaning as Waltke and O’Connor define it.
Figure 2: Plausibility of a Passive Undersubject in the D Stem for Every Verbal Root

In figure 2, a verbal root (e.g., אֶהְלָה ‘to pitch a tent’) that is part of the 100% bar on the right is a root for which every D-stem occurrence of that root in our source can plausibly be described as the subject causing a passive undersubject to be in a state; in other words, every D-stem occurrence of that verb is plausibly factitive or resultative. Conversely, a verbal root (e.g., בָּרָא ‘to lie in wait’) that is part of the 0% bar on the left is a root for which none of the D-stem occurrences can plausibly be described that way, so the root is never factitive or resultative.

If every occurrence of every verb followed Waltke and O’Connor’s hypothesis, a factitive/resultative meaning would be at least plausible for every occurrence of every D-stem verb, so the only purple bar would be on the far right, at 100%. The purple bar on the far right of figure 2 is indeed the largest purple bar, so the trend is in the right direction for their hypothesis. Comparing that bar with the sum of the other bars, we see that a factitive/resultative meaning is always a possibility for 43% of verbal roots. Conversely, the purple bar at the far left of figure 2 shows that such a meaning is never plausible in the D stem for 32% of verbal roots.
Is it possible that the hypothesis-incompatible purple bar on the far left of figure 2 is due to our standard for a factitive/resultative meaning being too strict? To test this, we plot the G-stem data for the same roots alongside the D-stem data in figure 3. Doing so reveals that there are almost 50 verbal roots for which a factitive/resultative meaning is sometimes or always plausible in the G stem (the green bar on the far right of figure 3). This suggests that our standard of evidence for a factitive/resultative meaning being plausible is not too tight.

![Figure 3: Plausibility of a Passive Undersubject in the G and D Stems for Every Verbal Root that Occurs in the D Stem](image)

Examining figure 3, we see that most G-stem verbs support Waltke and O’Connor’s hypothesis: a factitive/resultative meaning is never plausible for most (55%) G-stem verbs. On the other hand, a factitive/resultative meaning is always plausible for almost 20% of G stem roots. The support from D stem verbs is weaker: A factitive/resultative meaning is always plausible for less than half (43%) of roots in the D stem, and it is never plausible for almost a third (32%) of roots in the D stem. Furthermore, ‘plausible’ does not mean ‘likely’; table 20 and
figure 1 show that few occurrences provide any evidence that they actually have a factitive/resultative meaning as Waltke and O’Connor define it.

Focusing on the D-stem (the purple bars in figures 2 and 3), note the bimodal distribution: for most verbal roots, a passive undersubject is plausible in the D stem either always (179 verbal roots, the far right purple bar) or never (132 verbal roots, the far left purple bar). The remaining 107 verbal roots are scattered across the distribution. Thus we see that the imperfect fit of table 20 and figure 1 to Waltke and O’Connor’s hypothesis is a function of the verbal root: 179 verbal roots are always compatible Waltke and O’Connor’s hypothesis in the D stem, 132 are never compatible with it in the D stem.

To analyze this further, we must take into account the fact that both the G and D stems can have occurrences that are likely to have a factitive/resultative meaning, occurrences that are unlikely to have that meaning, and others that provide no evidence either way. To simplify the analysis, we group together the G-stem occurrences that provide no evidence with those that are unlikely to have a factitive/resultative meaning; this gives the benefit of the doubt to the hypothesis with respect to the G stem. Figure 4 shows the categories used for this analysis.
Figure 4: Classifying Verbal Roots Regarding Waltke and O’Connor’s Hypothesis

The Venn diagram (figure 4) categorizes every verbal root that occurs in the D stem in one of eight areas (A through H) depending on the answers to three questions: (1) Are there no G-stem occurrences that are likely to be resultative as Waltke and O’Connor define it? (2) Are there any D-stem occurrences that are likely to be resultative? (3) Are there no D-stem occurrences that are unlikely to be resultative? Each circle is labeled such that being inside a circle indicates (pink) support for or (blue and green) lack of opposition to Waltke and O’Connor’s hypothesis. A verbal root is inside the pink circle if there is at least one D-stem occurrence that is likely to have the resultative meaning that their hypothesis predicts for the D stem. A verbal root is inside the blue and/or green circle if there are no D-stem and/or G-stem occurrences, respectively, that are likely to have the meaning hypothesized for the other stem.
Table 21: Classifying Verbal Roots with Waltke and O’Connor’s Hypothesis

<table>
<thead>
<tr>
<th>Area in Fig. 4</th>
<th>(Not Green) Evidence For G Result?</th>
<th>(Pink) Evidence For D Result?</th>
<th>(Not Blue) Evidence Against D Result?</th>
<th>Total # Roots</th>
<th>% of Total Roots</th>
<th>Roots occurring 2+ times in D Stem</th>
<th>% of 2+ roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>3</td>
<td>&lt;1%</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>4</td>
<td>&lt;1%</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>23</td>
<td>6%</td>
<td>23</td>
<td>8%</td>
</tr>
<tr>
<td>D</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>&lt;1%</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>E</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>21</td>
<td>5%</td>
<td>17</td>
<td>6%</td>
</tr>
<tr>
<td>F</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>209</td>
<td>50%</td>
<td>152</td>
<td>54%</td>
</tr>
<tr>
<td>G</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>149</td>
<td>36%</td>
<td>77</td>
<td>27%</td>
</tr>
<tr>
<td>H</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>1%</td>
<td>4</td>
<td>1%</td>
</tr>
</tbody>
</table>

Features in yellow support Waltke and O’Connor’s hypothesis.

To help guard against our results being skewed by corrupt, mispointed, ad hoc, or misunderstood verbs, the two columns on the far right side of table 21 are the subset of the data that consists of verbal roots that occur more than once in the D stem. The percentages shift a little, but there are no major changes.

The most common category in table 21 is area F, which comprises about half of all verbal roots. These are the verbal roots that have no occurrences for which we found evidence for a passive undersubject (i.e., factitive/resultative) in either the G or D stems, but who do have at least one occurrence in the D stem for which there is evidence against that meaning. Thus these are the verbs for which the only D-stem evidence is against the hypothesis (and for which the G stem provides no evidence against the hypothesis).

The second most common category for verbs is area G. These are verbs that provide no evidence against the hypothesis, but whose D stem provides no evidence for it either.
The verbs that fully support Waltke and O’Connor’s hypothesis are in area E, which comprises about 5% of verbal roots. These are the verbal roots for which there is at least one occurrence in the D stem that is likely to have a factitive/resultative meaning, and no occurrences in the G or D stem that are likely to have the meaning that is hypothesized for the other stem. The 17 verbs that meet these criteria and occur at least twice in the D stem are: אָרָה, בָּצֵר-2, בָּבָר, גָּרֶשׁ-1, הָלָב-1, הָנָה, הָנָה, כָּבָּה, חָפָה, דָּשֵׁן, צָפֵל, צָפֵל, צָפָל-2, צָפָל-2, קַסֵּי.

Comparing areas E and F, we see that there are ten times as many verbal roots for which the only evidence about the D stem is against their hypothesis (area F) as roots for which the only evidence about the D stem supports their hypothesis (area E). This may be surprising, given that in figure 3, the purple bar (D stem) on the right side (factitive/resultative is always plausible) is larger than the purple bar (D stem) on the left side (factitive/resultative is never plausible). The difference is that the bars in figure 3 group together cases where a factitive/resultative meaning is plausible with those where it is likely, whereas figure 4 and table 21 only count verbs for which there are some occurrences that are likely or unlikely to be factitive/resultative; they only look for evidence where there is actually evidence one way or another. To explain the difference another way, the purple bar in figure 3 looks only at the blue circle in figure 4. As a result, the purple bar on the far right of figure 3 groups together areas D, E, G, and H of table 21. Area F of table 21 is spread throughout all the remaining bars of figure 3, and in fact comprises almost all the rest of figure 3.
This lack of support for Waltke and O’Connor’s hypothesis is disappointing. Perhaps, however, certain types of verbs support the hypothesis better than other types; if so, this might give us a clue for how to improve the hypothesis.

When checking for what kind of verbs fit Waltke and O’Connor’s proposal, one pattern to check is whether the fit depends on whether the verb is stative or fientive in the G stem. The reason for dividing verbs this way is that these two types of verbs seem to have different D stem meanings, and explaining this difference is the core problem of the D stem (see chapter 1). Furthermore, the main attraction of Waltke and O’Connor’s hypothesis is that they use the same fundamental explanation for D-stem verbs regardless this division in the G stem.

Instead of using the categories stative and fientive, however, we need to use the categories agentive and patientive that were defined in §2.3.1. The reason for this is that some verbs alternate between stative and fientive in the G stem, so in order to classify a given root as stative or fientive in the G stem, we need to use categories that summarize the entire G stem rather than describing an individual occurrence of a verb. The categories agentive and patientive do this because a verb is patientive if its G stem is ever stative (i.e., the subject is ever a patient), whereas if the verb is always fientive in the G stem (i.e., its subject is always an agent or an experiencer) then the verb is agentive. In other words, an agentive verb must have an agent (or an experiencer) as a subject, whereas a patientive verb can have a patient as a subject.

The following sections analyze subsets of data from the preceding tables and figures according to whether the G stem of the root is patientive, agentive, or never occurs.
4.4.2 Verbs that are Patientive in the G Stem

Table 22 is a subset of table 20; it includes only the verbal roots that are patientive in the G stem. Figure 5 is the corresponding pie chart, just like figure 1.

<table>
<thead>
<tr>
<th></th>
<th>G stem</th>
<th>D stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive undersubject is UNLIKELY</td>
<td>2746 (93.3%)</td>
<td>292 (23.5%)</td>
</tr>
<tr>
<td>Passive undersubject is POSSIBLE</td>
<td>190 (6.5%)</td>
<td>837 (67.4%)</td>
</tr>
<tr>
<td>Passive undersubject is LIKELY</td>
<td>6 (0.2%)</td>
<td>113 (9.1%)</td>
</tr>
<tr>
<td>Total number of occurrences</td>
<td>2942</td>
<td>1242</td>
</tr>
</tbody>
</table>

Figure 5: Occurrences of a Passive Undersubject in Patientive Verbs

The middle column of table 22 and the left pie chart in figure 5 show that verbs that are patientive in the G stem (meaning that they have a patient subject at least sometimes) are almost always unlikely to have a passive undersubject in the G stem. This is not surprising, since a patient subject cannot have a direct object, and hence cannot have an undersubject.

What might be surprising is that over 6% of the time, a passive undersubject seems possible for a patientive verb in the G stem. To understand this possibility of a passive undersubject with the G stem of a patientive verb, recall from §2.3.1 that a patientive verb is one
that can have a patient subject in the G stem; it is not necessarily one that always has a patient subject in the G stem. Some patientive verbs can be used with either a patient subject or an agent subject. For example, ‘broke’ is patientive because we can say ‘the stick broke’ (patient subject). The fact that we can also say ‘she broke the stick’ (agent subject) makes it possible for this to have a passive undersubject (i.e., a resultative meaning: ‘she made the stick broken’), yet it is irrelevant to classifying ‘broke’ as patientive. To give a Hebrew example, מלא is a patientive verb in the G stem because it can be used with a patient subject, such as in Isaiah 22:7a, which reads יִמָּלֵא נְאֹרָה הַמֶּרְמָה שְׁמַעְתֵּ֣הּ וּלְאֵלָ֑יְהַז ‘And your best valleys were full of chariots’. In Isaiah 14:21b, however, מלא has an agent subject and might have a factitive/resultative meaning: וּלְאֵלָ֣יְהַז אֲרֶ֔ץ וּשְׁרֵ֤י רִים ‘They must not rise and take possession of the land and fill the surface of the world with cities’. Therefore מלא in Isaiah 14:21 is classified as ‘possible’ for having a passive undersubject placed in a state, so it is part of the orange slice in the left pie chart of figure 5.

Comparing the G-stem and D-stem columns of table 22 and the left and right pie charts of figure 5 shows that for verbs that are patientive in the G stem, the D stem is far more likely to have a passive undersubject than the G stem, just as Waltke and O’Connor’s theory predicts for all verbs. The fact that a passive undersubject is usually possible (67.4% of the time) rather than likely (9.1% of the time) for a D stem of such verbs is perhaps acceptable given the subtle nature of the phenomenon. Nevertheless, the fact that in the D stem there is evidence against a passive undersubject (23.5% of the time) far more often than there is evidence for it (9.1%) suggests that even for these verbs, the support for Waltke and O’Connor’s hypothesis comes mainly from its plausibility in various contexts rather than from actual evidence for the hypothesized meaning.
To refine the analysis further, we can check if the occurrences that do not fit their hypothesis are evenly distributed among different verbal roots, or if some verbs fit it well and others do not fit it at all. To answer this question, figure 6 is a subset of figure 3 that contains only the verbs that are patientive in the G stem.

The green bars in figure 6 show that for the vast majority verbs that are patientive in the G stem, a factitive/resultative meaning is never plausible for the G stem. This fits Waltke and O’Connor’s hypothesis, and is expected, given that they are patientive verbs. The purple bars show that out of 78 verbs that are patientive in the G stem, a factitive/resultative meaning is always plausible in the D stem for 31 of them. Thus almost 40% of patientive verbs are always compatible with Waltke and O’Connor’s hypothesis. Comparing figure 6 (patientive verbs) with figure 2 (all verbs), we see that the bimodal distribution for the G stem is gone in figure 6 (no green bar on the right), and the bimodal distribution for the D stem is smaller (the purple bar on the left is only 13% of patientive verbal roots, whereas it was 32% of all verbal roots in figure 2).

Figure 6: Plausibility of a Passive Undersubject for Verbal Roots with a Patientive G Stem
The bimodal distribution has not, however, disappeared. The purple bar on the far left of figure 6 shows that there are ten verbs that never plausibly have a factitive/resultative D stem (as Waltke and O’Connor define it), even though their G stem can have a patient subject. Those verbs are: מָלָא, מָלָא, קָאָה, קָאָה-1, קָאָה-2, פָּהָה, פָּהָה. In some cases, the classification as a patietive verb is questionable: For example, מָלָא has a patient subject only in certain grammatical constructions with an idiomatic meaning. Other verbal roots in that list have only one occurrence in the D-stem or in the G-stem, so the results could be affected by corruption or mispointing of the text.

Nevertheless, there do seem to be unquestionable examples of verbs that are patietive in the G stem but whose D-stem is never factitive or resultative as Waltke and O’Connor define it. As an example, consider מָלָא. It occurs six times in the G stem, always with the meaning ‘to be dim or faint’, and hence always with a patient subject. For example, Isaiah 42:4a reads מָלָא נִכְהֵה יִשְׁמֹר מִן חֲרֹצֵי נִשָּׁפָת He will not be faint or be crushed until he has established justice on the earth’. Since a patient subject is possible for it in the G stem, it is classified as patietive. מָלָא also occurs three times in the D stem, sometimes with approximately the same meaning as the G stem. For example, Ezekiel 21:12b reads מָלָא נִכְהֵה יִשְׁמֹר מִן חֲרֹצֵי נִשָּׁפָת מַמְשָׁת מַמְשָׁת יִנְפָּה Every heart will melt, all hands will be feeble, every spirit will be faint, and every knee will run [with] water’. In both Isaiah 42:4 and Ezekiel 21:12, the verb describes the condition of its subject, not what its subject is doing to something else, so in neither case is it plausible that the verb describes the subject putting a passive undersubject into a state. Yet מָלָא is in the G stem in Isaiah 42:4 and in the D stem in Ezekiel 21:12.
To see an example of a verb that is mixed in the D stem, consider the verb הָלְבֹּר. In the G stem it typically means ‘joined together’ or ‘touching’. That is a stative meaning, so we would expect the D stem to have a factitive meaning. If Waltke and O’Connor’s hypothesis is correct, the D stem indicates that the subject causes a passive undersubject to be in the ‘joined’ state. In Exodus 36:18, such a meaning is likely. It reads: נָשַׁתְּ עָרְבֵר נְגַנְשִׁים לִטְחָרָה אֶרֶץ הָאָרֶץ לְכָלָה אָחָד: ‘And he made fifty bronze clasps to join the tent to be a unit’. Because הָלְבֹּר and the following verb both occur as purpose phrases (י with an infinitive construct), the focus is on the result, not the process. Furthermore, the tent is passive in the joining process, so this fits Waltke and O’Connor’s description of the D stem as placing a passive undersubject in a state. On the other hand, a factitive/resultative meaning is not always plausible in the D stem. For example, 2 Chronicles 20:36a reads: יִזְכֹּר הַשָּׁמֶשׁ לְקָנָה לְכָלָה מְחַלֵּת מְחַלֵּת לְכָלָה לָעַרְבֹּר: וַיֹּאמֶר הָלְבֹּר ‘and he joined himself with him to build ships to go to Tarshish; so they made ships in Ezion-Geber.’ The fact that the subject and direct object of the verb are the same (‘he joined himself’) makes the verb reflexive, which does not fit Waltke and O’Connor’s hypothesis (see §4.5).

Furthermore, recall that the analysis in figure 6 only looks at whether a factitive/resultative meaning is plausible in the D stem; in other words, it only looks at the blue circle in figure 4. To get a better picture of the evidence for and against their hypothesis with patientive verbs, the right two columns of table 23 show the subset of table 21 (repeated in the middle columns of table 23) that consists of verbs that have a patientive G stem.
Table 23: Classifying Patientive Roots with Waltke and O’Connor’s Hypothesis

<table>
<thead>
<tr>
<th>Area in Fig. 4</th>
<th>(Not Green) Evidence For G Result?</th>
<th>(Pink) Evidence For D Result?</th>
<th>(Not Blue) Evidence Against D Result?</th>
<th>Total # Roots</th>
<th>% of Total Roots</th>
<th># Patientive Roots</th>
<th>% of Roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>all roots</td>
<td>all roots</td>
<td>all roots</td>
<td></td>
<td>418</td>
<td>100%</td>
<td>78</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>3</td>
<td>&lt;1%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>4</td>
<td>&lt;1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>23</td>
<td>6%</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td>D</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>&lt;1%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>21</td>
<td>5%</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>F</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>209</td>
<td>50%</td>
<td>34</td>
<td>44%</td>
</tr>
<tr>
<td>G</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>149</td>
<td>36%</td>
<td>25</td>
<td>32%</td>
</tr>
<tr>
<td>H</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Features in yellow support Waltke and O’Connor’s hypothesis.

Comparing the total-root columns and the patientive-root columns of table 23, we see that patientive verbs have a slightly better fit to the hypothesis than when we look at all verbs. Nevertheless, even when we restrict our analysis to verbal roots that are patientive in the G stem (i.e., stative at least sometimes), more than half of the verbal roots provide at least some evidence against their hypothesis.

When we turn to verbs that require an agent in the G stem (agentive verbs), we find that the fit is similar, but slightly worse.

4.4.3 Verbs that are Agentive in the G Stem

Recall from §2.3.1 that a verb is classified as agentive if the subject is never a patient. In other words, a verb is agentive if it is never stative. Table 24 and figure 7 analyze the verbal roots that are agentive in the G stem.
### Table 24: Occurrences of a Passive Undersubject in Agentive Verbs

<table>
<thead>
<tr>
<th></th>
<th>G stem</th>
<th>D stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive undersubject is UNLIKELY</td>
<td>2869 (65.7%)</td>
<td>810 (41.7%)</td>
</tr>
<tr>
<td>Passive undersubject is POSSIBLE</td>
<td>1449 (33.2%)</td>
<td>1050 (54.1%)</td>
</tr>
<tr>
<td>Passive undersubject is LIKELY</td>
<td>47 (1.1%)</td>
<td>82 (4.2%)</td>
</tr>
<tr>
<td>Total number of occurrences</td>
<td>4365</td>
<td>1942</td>
</tr>
</tbody>
</table>

### Figure 7: Occurrences of a Passive Undersubject in Agentive Verbs

Comparing the G and D stems in table 24 and figure 7, we see that for agentive verbs, like for the patientive verbs in table 22, the G stem is less likely than the D stem to have a passive undersubject. This suggests that Waltke and O’Connor’s hypothesis is on the right track for what distinguishes the G and D stems, even for verbs that are not stative in the G stem.

Nonetheless, comparing table 24 with table 22 and figure 7 with figure 5 shows that the correlation is worse for agentive verbs than for patientive verbs. Two features of the lack of fit for agentive verbs are worth noting. First, note that 41.7% of the time, there is evidence against a D-stem verb having a passive undersubject if its G stem is agentive. This is the blue slice in the right pie chart in figure 7. Second, note that there is evidence for a D-stem verb having a passive undersubject less than 5% of the time. In other words, very little of the compatibility of agentive
verbs with Waltke and O’Connor’s hypothesis is due to there actually being evidence that a particular occurrence of the D stem has the nuance that they hypothesize. Instead, almost all of the compatibility with their hypothesis consists of the plausibility of that nuance, without there being any evidence for it actually being there. Since the same nuance is also plausible in the G stem over 30% of the time, its plausibility the majority of the time for the D stem is weaker evidence than it looks.

To understand this on a root-by-root basis, figure 8 analyzes the orange and grey pie slices from figure 7, just as was done in figure 6 for patientive verbs.

![Figure 8: Plausibility of a Passive Undersubject for Verbal Roots with an Agentive G Stem](image)

The strong bimodal distribution in figure 8 indicates that the G and D stems of some agentive verbal roots fit Waltke and O’Connor’s hypothesis far better than others. The purple bars count roots in the D stem. The purple bar on the far right side of figure 8 shows that 41% of verbal roots with an agentive G stem are always compatible with Waltke and O’Connor’s
hypothesis in the D stem. This is less than one would hope for. The green bar on the far right shows that the fit is even worse, since the same can be said for 28% of roots in the G stem.

Figure 8 does not tell us if the verbal roots that always fit their hypothesis in the D stem at least plausibly and those that do so in the G stem are the same verbal roots. To check for this, figure 9 is a subset of figure 8 that contains only the 68 verbs whose D stem always plausibly has a factitive/resultative meaning (i.e., those that constitute the purple bar on the right).

Figure 9: Plausibility of a Passive Undersubject in the G Stem for Verbal Roots with an Agentive G Stem and a D Stem for which a Factitive/Resultative Meaning is Always Plausible

The green bar on the right of figure 9 indicates that for verbs with an agentive G stem, if every occurrence of the D stem plausibly has a factitive/resultative meaning as Waltke and O’Connor define it, then it is likely that every occurrence of the G stem also plausibly has such a meaning, and thus does not fit their hypothesis. In other words, for most verbs that require an agent in the G stem (i.e., it is never stative), if a factitive/resultative meaning is always plausible
for its D stem, then a factitive/resultative meaning is also always plausible in the G stem. So these verbs provide little support for Waltke and O’Connor’s hypothesis.

To see this more clearly, the right two columns of table 25 show the subset of table 21 (repeated in the middle columns of table 25) that consists of verbs that have an agentive G stem.

### Table 25: Classifying Agentive Roots with Waltke and O’Connor’s Hypothesis

<table>
<thead>
<tr>
<th>Area in Fig. 4</th>
<th>(Not Green) Evidence For G Result?</th>
<th>(Pink) Evidence For D Result?</th>
<th>(Not Blue) Evidence Against D Result?</th>
<th>Total # Roots</th>
<th>% of Total Roots</th>
<th># Agentive Roots</th>
<th>% of Roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>all roots</td>
<td>all roots</td>
<td>all roots</td>
<td></td>
<td>418</td>
<td>100%</td>
<td>166</td>
<td>100%</td>
</tr>
<tr>
<td>A</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>3</td>
<td>&lt;1%</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>B</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>4</td>
<td>&lt;1%</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>C</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>23</td>
<td>6%</td>
<td>7</td>
<td>4%</td>
</tr>
<tr>
<td>D</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>&lt;1%</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>E</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>21</td>
<td>5%</td>
<td>9</td>
<td>5%</td>
</tr>
<tr>
<td>F</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>209</td>
<td>50%</td>
<td>85</td>
<td>51%</td>
</tr>
<tr>
<td>G</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>149</td>
<td>36%</td>
<td>51</td>
<td>31%</td>
</tr>
<tr>
<td>H</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>1%</td>
<td>5</td>
<td>3%</td>
</tr>
</tbody>
</table>

Features in yellow support Waltke and O’Connor’s hypothesis.

Table 25 shows that verbal roots with an agentive G stem (right columns) fit Waltke and O’Connor’s hypothesis about as well as all verbal roots together (middle columns).

The main reason why so few verbs support the hypothesis is seen in area F: over half of all verbs have at least one occurrence in the D stem that has evidence against a factitive/resultative meaning and no occurrences with evidence for that meaning. For example, consider בָּטַא, which means ‘to speak rashly’ in both the G stem and the D stem. In Psalm 106:33, its D stem is used as follows: רָתַּם לְעָלָיו בָּטַא וָּאֵלִו׃, ‘for they made his spirit bitter, and he spoke rashly with his lips’. This text describes Moses’ action in response to a frustrating
situation. In context, the text focuses on Moses’ act of speaking, not on some state into which a passive undersubject (his words?) are put. The other three occurrences of this verb are similar.

As an example of a verb that sometimes has evidence for a resultative meanings and sometimes has evidence against that meaning, consider the verb אסף. Following Waltke and O’Connor’s hypothesis, we would expect a focus on the achieved state in the D stem, as it is in Judges 19:15b, which reads יהי איש אסף-אלאים הובאה כלו: ‘and there was not a man gathering them into the house to spend the night’. In its context, the issue is why they are still in the public square, so the focus is on the result, not the action itself. This fits Waltke and O’Connor’s hypothesis for the D stem. So far so good. But not all occurrences of אסף in the D stem have a resultative meaning. For example, Isaiah 62:9a reads כי אסף אכלו: ‘but those who gather it will eat it and praise YHWH’. In context, the focus is on the people who do the gathering, not on the new state of the thing gathered. Furthermore, the verb אסף is a substantival participle, describing the ones who do the action. These features are evidence that אסף has a process meaning in Isaiah 62:9, which is what Waltke and O’Connor hypothesize for the G stem, yet אסף in Isaiah 62:9 is in the D stem.

The second reason why so few verbs support the hypothesis is the fact that few verbal roots show up in the right columns of table 25 in rows for which the pink column is ‘yes’. A ‘yes’ in the pink column indicates that there is at least one occurrence of the verbal root for which there is evidence that it has a factitive/resultative meaning as Waltke and O’Connor define it (namely that it describes causing a passive undersubject to enter a state). One might object that the evidence is subtle and that most of the occurrences that are labeled as ‘possible’ in the D stem actually have a passive undersubject. The objection is logically possible, and if we relabeled all

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of the ‘possible’ occurrences of a passive undersubject in the D stem as ‘likely’ (essentially eliminating the pink circle in figure 4), then 41% of verbal roots would be considered to always have the required meaning in the D stem. This would still leave most D-stem occurrences of agentive verbs having some occurrences that do not fit their hypothesis even with this generous standard. Furthermore, applying the same standard to the G stem would also label 28% of verbal roots as having the wrong meaning in the G stem. Therefore, loosening the standard of evidence would not make the evidence support their hypothesis.

To see the effect of loosening the standard of evidence, consider the verb עָסָף ‘to gather’. Earlier in this section we gave examples of how its D stem sometimes fits Waltke and O’Connor’s hypothesis and sometimes does not. Of the eight times that it occurs in the D stem, a passive undersubject seems unlikely once (Isaiah 62:9), possible three times (Numbers 10:25; Joshua 6:9, 13; Isaiah 52:12; Jeremiah 9:21), and likely twice (Judges 19:15, 18). Thus if we were more generous in classifying its uses as describing the subject placing a passive undersubject into a state, we might say that six of its eight uses have a passive undersubject. However, this loosening of the standard would have the same effect on the G stem. Of the 104 times that עָסָף occurs in the G stem, a passive undersubject seems likely once (2 Kings 22:4),\(^{93}\) unlikely twice (Genesis 49:33 and 1 Samuel 14:19),\(^{94}\) and possible the remaining 101 times. So if we loosen up the standard for classifying a use of a verb as describing a passive undersubject

---

93. 2 Kings 22:4b reads ‘so that he may count the money that was brought into YHWH’s house, which the gate keepers gathered from the people’. In this verse, the focus is a description of the resulting state of the money (that it was gathered), not on the action by the gate keepers (gathering the money), so it is resultative.

94. A passive undersubject is arguably unlikely for עָסָף in Genesis 49:33 and 1 Samuel 14:19 because it describes a person gathering their own hands or feet. See §4.5 for further discussion.
being placed in a state, the verb אֹסֵף would have many more D-stem-like uses in both the D stem and the G stem, which would not help confirm Waltke and O’Connor’s hypothesis.

### 4.4.4 Verbs without a G Stem

In addition to verbs with a patientive G stem and verbs with an agentive G stem, our final category of verbs are those than never occur in the G stem. as seen in table 26 and figure 10.

| Table 26: Occurrences of a Passive Undersubject in Verbs without a G Stem |
|-------------------------------|-------------------------------|
|                               | G stem | D stem   |
| Passive undersubject is UNLIKELY | 0      | 1173 (60.8%) |
| Passive undersubject is POSSIBLE    | 0      | 729 (37.8%)  |
| Passive undersubject is LIKELY     | 0      | 28 (1.5%)    |
| Total number of occurrences       | 0      | 1930       |

**Figure 10: Occurrences of a Passive Undersubject in Verbs without a G Stem**

One would expect the data in table 26 to be between the data in tables 22 and 24, since the verbs without a G stem are presumably a mix of the other two types. Surprisingly, however, verbs without a G stem are the worst fit of all for Waltke and O’Connor’s hypothesis; their D
stem has evidence against a passive undersubject more often and evidence for a passive undersubject less often than D-stem verbs that have an agentive or patientive G stem.

To see this more clearly, the right two columns of table 27 show the subset of table 21 (repeated in the middle columns of table 27) that consists of verbs that lack a G stem. Because there is no G stem, table 27 has half as many rows as table 21.

Table 27: Classifying no-G-Stem Roots with Waltke and O’Connor’s Hypothesis

<table>
<thead>
<tr>
<th>Area in Figure 4</th>
<th>(Pink) Evidence For D Result?</th>
<th>(Not Blue) Evidence Against D Result?</th>
<th>Total # Roots</th>
<th>% of Total Roots</th>
<th># no-G-Stem Roots</th>
<th>% of Roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>all roots</td>
<td>all roots</td>
<td>418</td>
<td>100%</td>
<td>174</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>A &amp; F</td>
<td>No</td>
<td>Yes</td>
<td>212</td>
<td>51%</td>
<td>90</td>
<td>52%</td>
</tr>
<tr>
<td>B &amp; C</td>
<td>Yes</td>
<td>Yes</td>
<td>27</td>
<td>6%</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>D &amp; E</td>
<td>Yes</td>
<td>No</td>
<td>24</td>
<td>6%</td>
<td>7</td>
<td>4%</td>
</tr>
<tr>
<td>G &amp; H</td>
<td>No</td>
<td>No</td>
<td>155</td>
<td>37%</td>
<td>73</td>
<td>42%</td>
</tr>
</tbody>
</table>

Features in yellow support Waltke and O’Connor’s hypothesis.

Comparing the middle and right columns of table 25, we see that verbal roots without a G stem fit Waltke and O’Connor’s hypothesis a little worse than other verbs do in general, despite the fact that they cannot be disqualified by their G stem (the green column).

Perhaps these verbs fit Waltke and O’Connor’s hypothesis worse than verbs with a G stem because the lack of a contrasting G stem frees or forces each verbal root to have a wider range of meanings in the D stem. Figure 11, however, shows that these roots have the same bimodal distribution we saw in figures 6 and 8. The vast majority of verbal roots that lack a G stem are self-consistent in the D stem, having a passive undersubject either always or never. So the fact that D-stem verbs without a G stem are less likely than other D-Stem verbs to have a
passive undersubject is not due to a broader range of meanings for each root in the D stem. Instead, the more extreme bimodal distribution of figure 11 (compared with figure 2) indicates that the absence of a G stem allows a verbal root greater freedom in the D stem to be something other than factitive/resultative (as Waltke and O’Connor define it), but that each verbal root is self-consistent in how it is used.

![Figure 11: Plausibility of a Passive Undersubject for Verbal Roots with no G Stem](image)

4.5 Allowing Reflexives

As described in §4.1, Waltke and O’Connor’s hypothesis categorizes the undersubject as not existing (G and N stems), as passive (D, Dp, and tD stems), or as active (H and Hp stems).

In the preceding section, certain roots had multiple D-stem occurrences that did not fit the hypothesis because the subject was acting upon itself. As an example of how this affects the analysis, recall from §4.3.2a that one of Waltke and O’Connor’s examples of a resultative D stem is the use of פָרַשׂ in Isaiah 1:15a, which reads מִכֶּם עֵין מִכֶּם וּבְמִכֶּם וּכְפֵיכֶם' And when you
spread out your hands, I will hide my eyes from you’. In our discussion, we argued that this could be either process or resultative, but that even if it is resultative (‘when you make your hands spread out’), the undersubject (‘your hands’) is not passive as Waltke and O’Connor’s hypothesis requires, since it is part of the subject (‘you’). In Waltke and O’Connor’s system (see table 16 in §4.1), such verbs should be in the tD stem, since they have a reflexive subject.

Perhaps, however, for a verb that normally occurs in the D stem, sometimes speakers would not switch to the tD stem when communicating a reflexive meaning. This may have been facilitated by the fact that the tD stem has a variety of relationships to the D stem (Arnold 2005, 154–5), so a switch to the tD stem might not have communicated a switch to a reflexive meaning in all cases. Furthermore, some of the verbs (likeפרשׂ) for which we found a reflexive D stem lack a tD stem altogether.

roots in the D stem, but more occurrences in the G stem. What affect does this have on our analysis?

Table 28 adds the right two columns to table 20 from §4.4.1. Comparing the columns, we see that changing the hypothesis to allow reflexive verbs for the hypothesized D-stem meaning improves the fit for D stem verbs, but it also shifts the G stem in the same direction by a similar amount. Therefore, modifying Waltke and O’Connor’s hypothesis in this manner does not significantly improve the fit to the data.

<table>
<thead>
<tr>
<th># of occurrences</th>
<th>Undersubject is Passive</th>
<th>Undersubject is Passive or Reflexive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G stem</td>
<td>D stem</td>
</tr>
<tr>
<td>UNLIKELY</td>
<td>5615 (76.8%)</td>
<td>2275 (44.5%)</td>
</tr>
<tr>
<td>POSSIBLE</td>
<td>1639 (22.4%)</td>
<td>2616 (51.2%)</td>
</tr>
<tr>
<td>LIKELY</td>
<td>53 (0.7%)</td>
<td>223 (4.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>7307</td>
<td>5114</td>
</tr>
</tbody>
</table>

4.6 Summary and Conclusion

As described in §1.2.2 and §4.1, Waltke and O’Connor propose that the G and D stems are distinguished as follows: the G stem describes the state or action of the subject, whereas the D stem describes the subject causing a passive undersubject to enter a state, without paying attention to the process by which that happens. The G-stem meaning is thus like the left or middle columns of table 29 (repeated from table 17 in §4.1), and the D-stem meaning is like the right column.
<table>
<thead>
<tr>
<th>Stative Meaning (G Stem)</th>
<th>Process Meaning (G Stem)</th>
<th>Factitive/Resultative Meaning (D Stem)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cabbage is in the cooked state.</td>
<td>John did the process of cooking the cabbage.</td>
<td>John made the cabbage to be in the cooked state.</td>
</tr>
<tr>
<td>The airplane is in the flying state.</td>
<td>Sarah did the process of flying the airplane.</td>
<td>Sarah made the airplane flown (by flying it).</td>
</tr>
<tr>
<td>The stick is in the broken state.</td>
<td>She did the process of breaking the stick.</td>
<td>She made the stick to be in a broken state.</td>
</tr>
</tbody>
</table>

The distinction between the middle and right columns of table 29 (process vs. factitive/resultative) is subtle, but it provides a proposed explanation for the difference between the G and D stems for verbs that seem to have the same meaning in those stems. For example Waltke and O’Connor propose that שְׁבַר means ‘to break’ (process meaning, middle column) in the G stem and ‘to make broken’ (resultative meaning, right column) in the D stem (1990, 405).

In this chapter we examined every occurrence of every verb that occurs in the D stem, along with every occurrence of the corresponding G stem, looking for that subtle distinction in meaning. We found that most occurrences provide no evidence that allows us to detect if a verb has a process meaning or a factitive/resultative meaning. When we did find evidence that allows us to decide that one meaning is more likely than the other, we found that a process meaning is far more common than a factitive/resultative meaning for the D stem (see tables 20 and 21 in §4.4.1). This was true even of the verbs that Waltke and O’Connor use as their examples (§4.3).

When we divided verbs according to whether their G stem is patientive, agentive, or not extant in our source, we found that verbs that could have a stative meaning in the G stem (patientive verbs) are somewhat more likely to have evidence of a factitive/resultative meaning in the D stem than verbs with an agentive G stem or verbs without a G stem. Nevertheless, even for patientive verbs, when making Waltke and O’Connor’s subtle distinction between a process
meaning and a factitive/resultative meaning, we found more than twice as many occurrences of the D stem with evidence against a resultative meaning than occurrences with evidence for it (see table 22 in §4.4.2).

Grouping occurrences by their verbal root rather than simply counting occurrences leads to the same conclusion, as table 21 shows.

This is disappointing. Waltke and O’Connor’s hypothesis is attractive because it systematically and elegantly organizes Hebrew verb stems (table 1) into a logical system (table 16), explaining the sometimes-subtle difference between stems. Furthermore, when we look at every occurrence of the D and G stems in our source, the D stem fits their hypothesized meaning for the D stem more often than the G stem does. Nevertheless, D-stem verbs with evidence that they do not have the proposed nuance outnumber those with evidence that they have it by more than 9-to-1, so we find far more data that contradicts the hypothesis than supports it. Furthermore, much of the difference between the G and D stems is due to patientive verbs, which generally have a stative meaning in the G stem and a factitive D stem.

What are we to make of this? It is possible that when examining individual occurrences we usually missed the nuance of a passive undersubject because it is too subtle. Indeed, Waltke and O’Connor seem to suggest that those who do not see their distinction may be relying on English equivalents and ignoring the context (1990, 358–9). We have, however, attempted to avoid these errors by explicitly taking Hebrew grammar and the context into account in our standards (see §4.2, especially table 18). Furthermore, because we tagged all occurrences in both the G and D stems at the same time based on the same standard, our comparison of the two stems
gives us reason to think that our results are not simply a matter of the standards of evidence being inappropriately high. The standards may be wrong, but simply loosening them would lead to more verbs in both stems having the meaning that only the D stem is supposed to have. So until one can justify alternate standards to replace those in section 4.2 and show that by those standards the D stem is marked for a passive undersubject and the G stem is not, it seems reasonable to conclude as follows: Waltke and O’Connor are on the trail of something that partially correlates with the distinction between the G and D stems for some verbs, but far more D-stem verbs have evidence that contradicts their hypothesis than verbs that have evidence for it. So, pace Waltke and O’Connor (1990, 359), we cannot say that because a verb is in the D stem it therefore has the nuance of a passive undersubject being placed in a state. Indeed, for almost half of all D-stem occurrences, we have evidence that it does not have that nuance.

At one point, Waltke and O’Connor (1990, 405) show awareness of the weakness of the evidence, since they quote Ryder’s concession approvingly:

the distinction between “do something” and “have something done” is not clearcut. ... Where the difference in meaning between [the G stem] and [the D stem] is scarcely noticeable, the choice between them may be determined by lexical classification ... or a question of stylistic effectiveness on the part of an individual writer. (Ryder 1974, 122)

Waltke and O’Connor, however, concede this arbitrariness mainly for verbs without a G stem or those that are quite rare in the G or D stem (1990, 405). This restriction improves the fit to the data, but it is not enough. Table 30 shows the results when we restrict our analysis to the 73 verbal roots that occur at least five times in both the D and G stems. The G-stem analysis changes not at all. The D stem analysis is somewhat more favorable, but there are still five times
more occurrences where the D stem is unlikely to have the hypothesized meaning than occurrences where it is likely to have that meaning.

<table>
<thead>
<tr>
<th># of occurrences</th>
<th>All verbs in our sample</th>
<th>Verbs in our sample that occur 5+ times in both the D and G stems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G stem</td>
<td>D stem</td>
</tr>
<tr>
<td><strong>Unlikely</strong></td>
<td>5615 (76.8%)</td>
<td>2275 (44.5%)</td>
</tr>
<tr>
<td><strong>POSSIBLE</strong></td>
<td>1639 (22.4%)</td>
<td>2616 (51.2%)</td>
</tr>
<tr>
<td><strong>LIKELY</strong></td>
<td>53 (0.7%)</td>
<td>223 (4.4%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7307</td>
<td>5114</td>
</tr>
</tbody>
</table>

The other way that Waltke and O’Connor show their awareness of the many verbs that do not support their hypothesis is in the structure of their chapter: in their resultative section, they have an ‘other’ section that they argue is actually not resultative (1990, 409–10). They also have a separate section of ‘frequentative’ verbs that they also argue are not factitive or resultative (1990, 409–10). Unfortunately, they never address the significance of patterns of verbal meaning that do not fit their hypothesis.

This leads us to investigate other options for what the D stem means. Before checking the other major proposal (Kouwenberg’s) in chapter 6, we will first investigate some patterns of meaning that Waltke and O’Connor acknowledge that seem to be separable from their system, namely that the D stem is used for metaphorical action, indirect action, or repeated action, as well as it being less likely than the G stem to be negated.
Chapter 5. Other Hypothesized Patterns of G vs. D Distinctions?

5.1 Waltke and O’Connor’s Other Patterns

Recall from §1.2.2 and §4.1 that Waltke and O’Connor unite the factitive and resultative meanings of the D stem by characterizing both factitive and resultative as the subject causing a passive undersubject to enter a state. They distinguish this from the G stem, which describes the action of the subject or its state. They also distinguish this from the H stem, which describes the subject causing an active undersubject to perform an action.

Despite this proposed unification of the D stem, we also saw in §4.3 that Waltke and O’Connor describe other patterns of D-stem meanings: metaphorical action (§4.3.2b), indirect action (§4.3.2c), action on multiple objects (§4.3.2d), and frequentative action (§4.3.4). They also suggest that resultative D-stem verbs are less likely to be negated than G-stem verbs and that they are more likely to have God as the subject (1990, 406, 408). Although they give plausible reasons for non-negation, indirect action, and a divine subject fitting their hypothesis for the D stem, they admit that metaphorical action, action on multiple objects, and frequentative action do not fit their hypothesis. Furthermore, they do not discuss the implications of this admission.

This section examines each of these proposed patterns of D-stem meanings, discussing whether such a meaning fits their hypothesis for the D stem and then investigating whether the data confirms that a pattern of verbs with that meaning exists. Checking the existence of patterns is important because patterns of meaning that apply to a significant number of verbal roots must be explained by any theory of the D stem, whereas an idiosyncratic meaning that is shared by
only a couple of verbal roots may simply be due to lexicalization of the D stem of a few roots (§2.6), and hence need not be accounted for by a general theory of the D stem.

The existence of each pattern that Waltke and O’Connor propose is investigated in two stages. The first stage is to examine every occurrence of each verb that Waltke and O’Connor use as an example of that pattern, to see if there is a consistent distinction of that kind between the D and G stems. The second stage of this investigation looks for the proposed meaning distinction between the verbs that seem to have roughly the same meaning in the D and G stems. The reason for focusing on these verbs is that the inclusion of the G stem provides a way to check our results; if we are too generous in finding a particular nuance, our too-generous definition will be visible in the G-stem results. The 138 verbs that we will use for this second stage are: אפק, ארב, ארק, אשת, אשת, בהו, בהו, בו, בוה,+='存在问题：compute' occur in the D stem and occasionally in the D stem. Most D-stem occurrences, however, mean 'to

95. It would be profitable to look for these nuances in every verb that occurs in the D stem rather than just the GD-similar roots. For practical reasons, this is deferred to a future project (§7.5).
96. For GD-similar roots that have a range of meanings in a given stem, we count only the occurrences that have similar meanings in the G and D stems. For example, it means ‘to count’ in the G stem and occasionally in the D stem. Most D-stem occurrences, however, mean ‘to

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5.2 Non-Negated D Stem

In their discussion of the simple resultative (analyzed in §4.3.2a), Waltke and O’Connor (1990, 406) note that for the verbs לחלק ‘to divide’ and הפר ‘to cut’, the G stem is negated but the D stem is not. In lieu of an explanation, they point the reader to Jenni (1968, 129–30), who argues that negating a resultative D stem would indicate that the result was not achieved but leaving open the question of whether the process was even attempted. Therefore, to indicate that an action is not done, one negates the G stem, which refers to the process rather than the result.

This seems logical, and therefore, if Waltke and O’Connor’s hypothesis is correct, when a GD-similar verb is negated, it will be negated in the G stem unless the writer wishes to indicate (or at least not rule out the possibility) that an unsuccessful attempt was made. Thus GD-similar verbs should be negated more often in the G stem than in the D stem (1990, 406).

5.2.1 Checking Waltke and O’Connor’s Example Roots: חלק and הפר

Waltke and O’Connor (1990, 406) give two examples of verbs for which the G and D stems differ in that the G stem is negated but the D stem is not:חלק ‘to divide’ and הפר ‘to cut’.

프 ‘to cut’ occurs only twice, once in the G stem and once in the D stem, both of them in Genesis 15:10. Only the G stem is negated, but the odds of this happening randomly is 50%, so Genesis 15:10 does not prove anything by itself.

97. The calculation assumes that one verb will be negated and uses as a null hypothesis that D and G stem occurrences are equally likely to be negated. Under those assumptions, given 1 G-stem verb and 2 total verbs, the odds of the negated verb being in the G stem is 0.5.
The verb 2כָּלַּה, however, gives more support. 2כָּלַּה occurs 19 times in the G stem and 25 times in the D stem. It is negated three times (Deuteronomy 29:25; Joshua 18:2; Job 39:17), all of them in the G stem. The probability of this happening randomly is 7.3%, so it lends some support to their statement.98

5.2.2 Checking the GD-similar Roots

The 138 roots that have roughly the same meaning in the G and D stems (the GD-similar roots) occur 4796 times in the G and D stems with similar meanings in our sample. Of the 3173 times that they occur with such a meaning in the G stem, they are negated 234 times (7.4%).99 Of the 1623 times that they occur with a GD-similar meaning in the D stem, they are negated 107 times (6.6%), so GD-similar verbs are negated in both stems, but slightly more frequently in the G stem than in the D stem.

Looking at it on a root-by-root basis, of the 138 GD-similar roots, there are 55 roots that are negated at least once in the G stem, of which 42 are never negated in the D stem and 3 are negated in both stems but more frequently (as a percentage of their uses in that stem) in the G stem. Thus of 138 GD-similar roots, the G stem is negated more frequently than the D-stem for 45 roots.

98. The calculation assumes that three verbs will be negated and uses as a null hypothesis that D and G stem occurrences are equally likely to be negated. Under those assumptions, given 19 G-stem verbs and 44 total verbs, the odds of all three negated verbs being in the G stem is (19/44)*(18/43)*(17/42) ≈ 0.073.

99. By ‘negated’ I refer to there being a specific negative word that applies to that verb. If the context suggests negation (such as in a rhetorical question) but does not have a negative word, I do not count the verb as negated.
Conversely, there are 27 GD-similar roots that are negated at least once in the D stem, of which 14 are never negated in the G stem and 10 are negated in both stems but more frequently in the D stem. Thus of 138 GD-similar roots, the D stem is negated a larger percentage of its occurrences for 24 roots.

Comparing the G and D stems, we see that although GD-similar verbs are negated only slightly more frequently in the G stem than in the D stem on an occurrence basis, when we look on a root-by-root basis, twice as many GD-similar roots are mainly negated in the G stem than are mainly negated in the D stem. This general trend is in line with Waltke and O’Connor’s note and Jenni’s argument about the D stem.

Recall that the underlying argument is that resultative verbs (i.e., verbs in the D stem) are less likely to be negated because doing so leaves open the possibility that the action was unsuccessfully attempted, whereas negating a verb with a process meaning (i.e., a verb in the G stem) indicates unambiguously that the action was not attempted.

Comparing this to our data, we see that of the 107 times that GD-similar roots are negated in the D stem, none occur in a context that suggests an unsuccessful attempt. On the contrary, the only unsuccessful attempt that we noticed that uses the D stem of a GD-similar verb was affirmed in the D stem. Jeremiah 51:9a reads רִפִּאנוּ נִרְפָּ֔תָה אֶת־בָּבֶל We healed Babylon, but she was not healed. The affirmed D stem at the beginning indicates that the process was

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100. This is the Kethib. The Qere substitutes Hay for Aleph, as if it were a 3ū verb, but our source parses it as still being from רָפָה. Koehler (2000, s.v.) concurs that the Qere of Jeremiah 51:9 is from רָפָה not רָפָה. This seems likely, given the context and the fact that the 3ū of רָפָה is also dropped in Jeremiah 8:11.
attempted, and the negated N-stem at the end indicates that the process was unsuccessful. This counterexample,\textsuperscript{101} combined with the lack of examples, suggests that the difference in frequency of negation between the G and D stems of GD-similar verbs is unlikely to be due to concern about leaving open the possibility of an unsuccessful attempt. So Jenni’s argument, although logical, is based on avoiding a hypothetical implication of a construction that apparently never actually has that implication in our source.

Thus, although the D stem is negated somewhat less often than the G stem for GD-similar verbs, Jenni’s explanation of this phenomenon is unlikely to be correct. The possibility of another explanation for this difference in frequency of negation will be explored further in chapter 6 when we investigate the association between the D stem and high semantic transitivity.

5.3 Metaphorical D Stem

As discussed in §4.3, Waltke and O’Connor (1990, 407–9) divide irreal resultatives into two categories: metaphorical and indirect, despite the fact that they admit that a metaphorical meaning is not necessarily a resultative meaning (1990, 407). In §4.3.2b, we asked whether the verbal roots that they use as examples of metaphorical action in the D stem have evidence of a factitive/resultative meaning (as they define it) in the D stem; our conclusion was negative.

In this section, we are asking a separate question: to what extent are there verbal roots for which the D-stem meaning is metaphorical, in distinction from a literal G-stem meaning?

\textsuperscript{101} Counterexamples (i.e., the D stem is affirmed but the result is not achieved) with non-GD-similar verbs occur in 2 Kings 11:1, Malachi 1:9, and Proverbs 5:13.
To answer this question, we classify the meaning of each occurrence of a root in the G and D stems as either literal or metaphorical (or unclear). First (§5.3.1) we examine Waltke and O’Connor’s two examples of roots (זרה־ and דלה־) that they claim have a metaphorical meaning in the D stem and a literal meaning in the G stem. Then (§5.3.2) we examine all 138 GD-similar roots.

5.3.1 Checking Waltke and O’Connor’s Example Verbs: זרה־1 and דלה־1

Waltke and O’Connor note that זרה־1 ‘to scatter’ is used literally in the G stem in Exodus 32:20 and Ezekiel 5:2, and that it is used metaphorically in the D stem in Proverbs 20:26 and Ezekiel 5:12. Those examples are clear and correct, so there is no need to discuss them here.

Most of the uses of זרה־1 in the D stem, however, might not be metaphorical because they refer to physically dispersing people without any clear metaphorical elements. For example, Leviticus 26:33a reads בַגּוֹיִם and I will scatter you among the nations’. It is D stem, so Waltke and O’Connor lead us to expect this to be metaphorical, but since it describes people being physically dispersed, זרה־1 is only metaphorical here if a literal use of זרה־1 means ‘to toss up in the air and have the wind scatter’ rather than simply ‘to scatter’. As another example of an arguably literal D stem of זרה־1, consider Ezekiel 6:5, which reads וְזֵרִיתִי֙ מִזְבְּחוֹתֵיכֶֽם. And I will set the corpses of the sons of Israel before their idols, and I will scatter your bones around your altars’. This D-stem verb describes the

102. Whether a particular occurrence of a verb has a literal meaning or a metaphorical meaning depends on the precise literal meaning of the verb, so uncertainty in the precise literal meaning leads to uncertainty in what is metaphorical. For an example of this, see the discussion of זרה־1 in §5.3.1.
literal scattering of bones, so it is only metaphorical if a literal דלה requires that a wind do the scattering. In fact, if a literal דלה requires merely physical scattering rather than scattering by a wind, then only 3 of the 26 occurrences of דלה in the D stem are metaphorical.

Furthermore, Waltke and O’Connor do not note that of the nine occurrences of דלה in the G stem, two of them (Isaiah 41:16 and Jeremiah 15:7) are unambiguously metaphorical. Isaiah 41:15-16a reads Behold, I have made you a threshing sledge – new, sharp, and having double edges. You will thresh mountains and crush. And you will make hills like chaff. You will winnow them, and a wind will lift them, and a gale will scatter them’. Jeremiah 15:7 reads And I have winnowed them with a winnowing fork in the gates of the land. I have bereaved [them]. I destroyed my people. They did not turn from their ways’.

Thus we find that דלה is used metaphorically in both the G and D stems. Furthermore, if דלה literally means ‘to scatter’ rather than specifically ‘to throw up in the air and have the wind scatter’, then the D stem is not consistently metaphorical, and the G stem is metaphorical a greater percentage of the time than the D stem is!

Nonetheless, there is a distinction between the D and the G stem for דלה. The D stem usually refers to scattering people, whereas the G stem refers to scattering people only once (Jeremiah 15:7) or twice (Isaiah 41:16).

דלה. The one time that דלה ‘to draw water’ occurs in the D stem (Psalm 30:2), it is metaphorical, just as Waltke and O’Connor say. However, of the three times that the word occurs
in the G stem, one of them is also metaphorical; Proverbs 20:5 reads שִׁמְעוּ יִשְׂרָאֵל אִישׁ אֱלֹהִים: ‘A plan in a man’s heart is deep water, but a man of understanding will draw it out’. This is metaphorical, so Waltke and O’Connor lead us to expect it to be D stem, yet it is G stem.

In summary, Waltke and O’Connor (1990, 407–8) state that for some verbs, the G stem is literal whereas the D stem is metaphorical. Unfortunately, for the two verbs that they list as examples, when one looks at every occurrence, one finds that the G stem is also used metaphorically and the D stem is not always metaphorical.

5.3.2 Checking the GD-Similar Verbs

The verbal roots that might distinguish the G and D stems as literal vs. metaphorical are the 138 verbal roots (§5.1) that have roughly the same meaning in the G and D stems (the GD-similar roots). These verbal roots occur 4796 times in the G and D stems with similar meanings in our sample. Of the 3173 times that they occur in the G stem, 541 occurrences (17.1%) seem likely to have a metaphorical meaning, and an additional 173 occurrences (5.4%) might have a metaphorical meaning. Of the 1623 times that they occur in the D stem, 288 occurrences (17.7%) are likely to have a metaphorical meaning, and an additional 145 occurrences (8.9%) might have a metaphorical meaning.

Thus an occurrence of a GD-similar verb in the G stem is about as likely to have a metaphorical meaning as an occurrence in the D stem. The verb קלע-1 is an example of this. It occurs four times. Twice it literally refers to slingling a stone: Judges 20:16 (G stem) and 1 Samuel 17:49 (D stem); so a literal meaning can be either G stem or D stem. The other two occurrences refer to God metaphorically slingling people. 1 Samuel 25:29b reads פָּתַח קֹל יְהֹוָה שִׁמְעוּ יִשְׂרָאֵל:
‘but the life of your enemies he [God] will sling it out [from] the midst of the pocket of the sling’. Jeremiah 10:18 reads 'For thus YHWH said, “See me sling[ing out] the inhabitants of the land in this time”.' These two occurrences of קַלְעֶ֔נָּה are metaphorical and have similar meanings, yet 1 Samuel 25:29 is in the D stem and Jeremiah 10:18 is in the G stem. This exemplifies the fact that the D and G stems can both be used literally and both be used metaphorically, even for the same verbal root.

Looking at it on a root-by-root basis, of the 138 GD-similar roots, there are 56 roots that likely have a metaphorical meaning at least once in the D stem, of which 14 never have even a possibly metaphorical meaning in the G stem. The list of such roots is: נָרַשׁ-1, יָרָר-1, כָּבָּס, לַחֹר, מגה, נגה, נָגָר-1, נָּרָר, פִּלָּח, קֹרַר, קָּעִים, רְפַד. As an example of such a root, consider נגה נגה. In the G stem, it occurs four times, all in Exodus 21:28-32, always referring to an ox literally goring a person. In the D stem, it occurs six times. Twice (Ezekiel 34:21 and Daniel 8:4) it describes a sheep or a goat butting other animals, where all of the creatures are symbols for people. The other four times (Deuteronomy 33:17; Psalm 44:6; 2 Chronicles 18:10) describe a person as goring or butting others, as if they were an ox. For example, Psalm 44:6 reads בְּעַרְדִּית נַמְּחָה קַלְעְה הָאֵל: ‘Through you [YHWH] we will gore our enemies. Through your name we will trample those who rise against us.’ Thus the D stem is metaphorical for רַעְש whereas the G stem is literal, following the pattern that was noted by Waltke and O’Connor (1990, 407–8) and discussed in §5.3, above.

Conversely, there are 64 GD-similar verbal roots that have a metaphorical meaning at least once in the G stem, of which 22 never have even a possibly metaphorical meaning in the D stem. The list of such roots is: אֲפָח, アープ, בְּכֶה, דַּרְכָּה, כָּבֶּשׁ, חָבֶּר, נָוָל, נָּפַר-1, נְּפַר, נָּרָר-2, סְחַמ.
As an example of such a root, consider רָכֵֽף. In the D stem, it occurs three times (Exodus 39:3; Numbers 17:4; Isaiah 40:19), always as a literal description of flattening metal for decorative purposes. In the G stem it occurs four times; three as a description of God spreading out the earth (Isaiah 42:5; 44:24; 136:6), and once as a description of David destroying his enemies (2 Samuel 22:43). The latter is surely metaphorical; it reads: "And I would grind them like dust of the ground. Like street mud I would crush them, stamping them flat." Thus the G stem is metaphorical for רָכָּף, whereas the D stem is literal, contrary to the pattern that Waltke and O’Connor suggest.

To tighten up the criteria, there are 11 verbal roots for which every D-stem occurrence is at least plausibly metaphorical and for which no G-stem occurrence is certain to be metaphorical: בָּרָר, זָקַּק, הָשָׁאָל, קֹהֶה, פָּכָה, צַעַק, 1, קֹהֶה, רָכֵֽף, שָׁאָל, תָּלָה. These are the roots that plausibly fit the pattern G:D = literal:metaphorical, as described by Waltke and O’Connor. Conversely, there are 9 verbal roots for which every G-stem occurrence is at least plausibly metaphorical and for which no D-stem occurrence is certain to be metaphorical: בָּרָר-1, זָקַּק, הָשָׁאָל, קֹהֶה, פָּכָה, מָרְכַּמ, 2, מָרְכַּמ, פָּכָה, 2, פָּכָה. Thus there are almost as many verbal roots that plausibly fit the reverse pattern G:D = metaphorical:literal.

In summary, we see that no matter whether we count the total number of occurrences that are metaphorical or literal, or whether we count the verbal roots that might be marked as metaphorical in one stem or the other, we find that GD-similar verbs are as likely to be
metaphorical in the G stem as in the D stem. This finding contradicts Waltke and O’Connor (1990, 407–8), Jenni (1968, 135–40), and Bergsträsser (1929, 2:93).

5.4 Indirect Action D Stem

In addition to metaphorical action, Waltke and O’Connor’s (1990, 407–9) other category of irreal resultatives is indirect action. By indirect action, they refer to the subject performing the action through an intermediary, such as when a king captures a city, but it is really his army that carries out the attack. If the intermediary is unspecified, then indirect action is likely to be resultative, because leaving unspecified the one who actually does the action suggests that focus is on the result, not the process.

In §4.3.2c, we asked the question of whether the verbal roots that they use as examples of indirect action in the D stem have evidence of a factitive/resultative meaning (as they define it) in the D stem. In this section, we are asking a separate question: to what extent are there verbal roots for which the D-stem describes an indirect action, in distinction from a direct action in the G-stem?

To answer this question, we classify the meaning of each occurrence of a root in the G and D stems as either direct action or indirect action (or unclear). An occurrence is marked as certain to describe indirect action if a subagent or instrument is mentioned or if it would be impossible for the subject to do so directly and it would be natural for the subject to do so by means of others, such as when a king captures a city.
In §5.4.1 we examine Waltke and O’Connor’s two examples of roots (까요 and ेश्वर-1) that they claim refer to indirect action in the D stem and direct action in the G stem. Then in §5.4.2 we examine all 138 GD-similar roots.

5.4.1 Checking Waltke and O’Connor’s Example Verbs: ेश्वर-1

When we examine all examples of ेश्वर-1 ‘to break’ in the G and D stems, we find five occurrences of an action where a human subject breaks something indirectly (2 Kings 18:4; 23:14; Jeremiah 43:13; 2 Chronicles 14:2; 34:4). In addition there are two occurrences in which God breaks something through specified means, so the action is explicitly indirect (Psalm 48:8; 105:33). All seven of these occurrences are in the D stem as Waltke and O’Connor predict for indirect action.

If, however, we add actions where God breaks something in a such a way that it seems likely (but not certain) to be an indirect action, since the means is not explicitly stated, we find 27 of them in the G stem and 10 in the D stem. For example, to describe God breaking the food supply, the G stem is always used (Leviticus 26:26; Ezekiel 4:16; 5:16; 14:13; Psalm 105:16). Similarly, when God breaks a yoke of servitude, it is in the G stem (Leviticus 26:13; Jeremiah 2:20; 28:2, 4, 11; 30:8; Ezekiel 34:27). When God breaks the bars of a city, ेश्वर-1 is in the G stem once (Amos 1:5) and in the D stem three times (Isaiah 45:2; Psalm 107:16; Lamentations 2:9). Categorizing such occurrences as indirect action would make the majority of indirect-action occurrences in the G stem rather than the D stem, contrary to Waltke and O’Connor’s hypothesis.

103. Recall from §4.2 and §4.3.2c, however, that when the means is specified, indirect action in the D stem does not necessarily support Waltke and O’Connor’s hypothesis.
Conversely, there are 39 occurrences of שָׁבַר that clearly describe a direct action, 20 in the G stem and 19 in the D stem. For example, Exodus 9:25b reads: ‘and every plant of the field, the hail struck down, and every tree of the field it broke’. This is direct action in the D stem, contrary to the pattern that Waltke and O’Connor state exists.

In summary, the 36 D-stem occurrences of שָׁבַר are split between 7 direct action, 19 indirect action, and 10 uncertain. The 51 G-stem occurrences are also split between 20 direct action and 31 that are uncertain, most of them because God is the subject and is acting in a way that might or might not imply indirect action, depending on how the author conceived of divine action in the world. Thus שָׁבַר provides some support for the idea that the D stem is preferentially used for indirect action, but it is also clear that the D stem can be used for direct action as well.

בקע. The other verb that Waltke and O’Connor use to exemplify the use of the G stem for direct action and the D stem for the indirect action is בָּקַע ‘to open’. Their G-stem example of direct action is Amos 1:13b: ‘because of their ripping open pregnant women in Gilead’. Their D-stem example of indirect action is 2 Kings 8:12b: ‘And their pregnant women you will rip open’. In the first case, the Ammonite soldiers do the action, so it is direct, whereas in the second one, Hazael is the subject but presumably acts through his soldiers, so it is indirect action. These examples do illustrate their point.

Looking at the 16 occurrences of בָּקַע in the G stem, we see that the action is direct 8 times, uncertain 7 times, and indirect once. The indirect action occurs in 2 Chronicles 32:1b: אַפֵּה.
King Sennacherib of Assyria came and invaded Judah. He encamped against the fortified cities, intending to break them for himself’. Just as Waltke and O’Connor cited 2 Kings 8:12b as indirect action in the D stem because Hazael would act through his soldiers, so also in 2 Chronicles 32:1, Sennacherib would act through his soldiers. Yet one verb is D stem and the other is G stem, so both the D and G stems of בָּקֻעַ are used for indirect action.

Examining the 12 occurrences of בָּקֻעַ in the D stem, we see that the action is direct 7 times, uncertain twice, and indirect three times. As an example of the D stem of בָּקֻעַ indicating direct action, note 2 Kings 2:24b: וַתֵּצֶ֙אנָה יְלָדִֽים׃ יֵֽנְשָׁ הָֽעַרְעֵֽב׃ בָּקֻעַ מִן־הַיַּ֔עַר דֻּבִּ֥ים מֵֽהֶ֖ם וַתְּבַקַּ֣עְנָה מִֽן־הַיַּ֔עַר דֻּבִּ֥ים. ‘And two female bears came out from the wood and they tore open forty-two of the boys’.

In summary, בָּקֻעַ usually describes direct action in both the D and G stems, but both stems can be used for indirect action as well. Thus it does not support the pattern that Waltke and O’Connor propose.

5.4.2 Checking the GD-Similar Verbs

The verbal roots that might distinguish the G and D stems as direct action vs. indirect action are the 138 verbal roots (§5.1) that have roughly the same meaning in the G and D stems (the GD-similar roots).

Of the 3173 times that the GD-similar roots occur in the G stem in our sample, 137 occurrences (4.3%) describe indirect action, and an additional 255 occurrences (8.0%) might do so as well. Of the 1623 D-stem occurrences, 75 (4.6%) describe indirect action, and an additional 236 occurrences (14.5%) might do so as well. Thus GD-similar verbs seem equally likely to refer
to indirect action in the G stem (4.3%) and the D stem (4.6%), although if we gave the benefit of the doubt to all uncertain occurrences, then indirect action would be somewhat more likely in the D stem (19%) than in the G stem (12%).

The same equal likelihood is seen when we look at a root-by-root basis, since there are some roots that use only the G stem for indirect action, and other roots that use only the D stem for indirect action. On the one hand, there are 19 verbal roots that are likely used to indicate indirect action at least once in the G stem and for which indirect action is never likely in the D stem: אפש, דרש, דרש-1, זבח, תלה, נקר, נקר-1, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא, נשא. An example of this is found in 2 Samuel 24:10a, which reads ספר ‘to number’ is certain to be indirect action, not only because it would take far too long for one person to count all the people in an entire nation, but also because 2 Samuel 24:4 explains that the numbering was done by Joab and the commanders of the army. On the other hand, there are 17 verbal roots that are likely used to indicate indirect action at least once in the D stem and for which indirect action is never likely in the G stem: נ المدني, נ عربي-1, דבר-2, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש, חפש. An example of the indirect use of the D stem is found in 2 Kings 19:23a, which reads יד by the hand of your messengers, you have ridiculed the Lord’. It is certain to be indirect action because it specifies that the action was done through secondary actors. Thus both the G and D stems have roots that are used for indirect action only in that stem.
Alternately, if we count roots that have at least one clear case of indirect action in the D stem and no clear cases of direct action, we find four roots: נֶשֶׁל, מָדָר, כֶּבֶשׁ, חָפָה. Conversely, there is one root for which the same things are true of the G stem: עֲשָׂר.

Thus we find no significant pattern of indirect action occurring preferentially in the D stem for GD-similar verbs, regardless of whether we look at the percentage of occurrences or at the number of roots that use one stem or the other for indirect action, as long as we look at the occurrences that are certain to be indirect action and ignore the occurrences that are uncertain.

As mentioned earlier, however, if we include the 491 occurrences that might or might not describe indirect action, this conclusion is less certain, since uncertain occurrences far outnumber the 212 occurrences that clearly describe indirect action. These 491 occurrences are divided almost evenly between the G stem (255) and D stem (236), but since GD-similar verbs in our sample occur far more often in the G stem (3173 occurrences) than in the D stem (1623 occurrences), they are more significant for the D stem. So if we loosened our standard for indirect action such that all uncertain occurrences were tagged as indirect, then the D stem is somewhat more likely than the G stem to indicate indirect action (19% vs. 12%).

On the other hand, if we change the question to whether indirect action is likely to be described in the G stem or the D stem, the answer is that when a writer has a choice between using the G stem and the D stem to indicate a given meaning (i.e., the GD-similar verbs), writers have a slight preference to use the G stem, contrary to Waltke and O’Connor’s suggestion. This is true regardless of whether we count only the occurrences in our sample that are certain to
indicate indirect action (137 G stem vs. 75 D stem) or if we also include the occurrences that might indicate indirect action (392 G stem vs. 311 D stem).\textsuperscript{104}

One last thing to note is that most of the uncertain occurrences (371 out of 491) are uncertain because God is the subject of the verb. A decision about the indirectness of the action comes down to whether the author conceived of God working through secondary causes or not. When God is the subject and a secondary cause seems likely but is not mentioned by the writer in that context, any decision about the directness or indirectness of the action seems arbitrary, so these are tagged as uncertain.

This does raise the question, however, of whether there is a preference for one stem or the other for verbs with a divine subject. This question is explored in the next section.

\textbf{5.5 Divine-Subject D Stem}

As the bridge between their discussions of metaphorical resultatives and indirect resultatives, Waltke and O’Connor state that when God is the subject of the verb, the verb may prefer the D stem because it describes God as the agent without needing to describe the process of the divine action (1990, 408).\textsuperscript{105}

\textsuperscript{104} The ratio of occurrences between the G and D stem is, of course, affected by GD-similar verbal roots that occur predominantly in one of the two stems. But since GD-similar roots have (by definition) roughly the same meaning in both stems, such verbs should not be excluded from our analysis. Furthermore, when we count roots rather than occurrences, we come to the same conclusion.

\textsuperscript{105} They refer the reader to Jenni (1968, 137), who writes, “Wie schon an den meisten der bisher genannten Stellen kommt es auch sonst öfters vor, daß das Qal [G stem] mit seiner konkreten, aktuellen Bedeutung hauptsächlich bei irdischen Subjekten, das Piel [D stem] dagegen mit seiner übertragenen Bedeutung fast ausschließlich beim Subjekt Jahwe verwendet wird. Es gelingt damit, Ergebnisse auf Jahwe zurückzuführen, ohne den genauen Hergang seines
5.5.1 Checking Waltke and O’Connor’s Example Verb: דלה־

As their example of this, Waltke and O’Connor compare the use of דלה־ in Exodus 2:16 (G stem) and Psalm 30:2 (D stem). Exodus 2:16 reads: ‘And the priest of Midian had seven daughters, and they came and they drew up [water] and they filled the watering troughs to water their father’s flock’. The subject is human, so the G stem is used to describe the process. Conversely, Psalm 30:2 reads: ‘I will exalt you, YHWH, for you drew me up and you have not allowed my enemies to rejoice over me’. The subject is divine, so the D stem is used as a way of indicating the result without describing the process of divine intervention in the world.

The verb דלה־ occurs five times in the Bible. The four occurrences in the G stem have human subjects, and the one D-stem occurrence has a divine subject, so the verb דלה־ fits the pattern. Since there is only one D-stem occurrence, however, it is uncertain if this is a pattern.

5.5.2 Checking the GD-Similar Verbs

When we look at all occurrences of GD-similar verbs in our sample, however, we find that occurrences with God as the subject are divided fairly evenly between the G stem (414) and the D stem (368), with a slight preference for the G stem. Thus if God is the subject and an author has the choice between the G stem and the D stem to communicate the same meaning (i.e., a GD-similar verb), the author is slightly more likely to use the G stem.

Handelns näher umschreiben zu müssen. Eine strikte Regel ist daraus natürlich nicht abzuleiten; die folgenden Beispiele sollen auch nicht das Material erschöpfen.”
When we count roots rather than occurrences, we come to the same conclusion: 65 GD-similar roots have at least one clear example of being used with a divine subject in the G stem, vs. 56 such roots in the D stem. Those counts of roots are not mutually exclusive, however: If a GD-similar root has a divine subject, more likely than not (34 roots) it is used with a divine subject in both stems. Excluding the roots with a divine subject in both stems, there are 31 roots for which every clear example of a divine subject is in the G stem, vs. 22 roots that use only the D stem for a divine subject. Thus we find that the G stem is more likely than the D stem if God is the subject of a GD-similar verb. As an example, the root הָרַס occurs 29 times in the G stem, 13 of which have God as the subject, and 3 times in the D stem, never with God as the subject.

Recall from §5.5.1 that Waltke and O’Connor use דְּלַח-1 as an example of a verb that uses the D stem with a divine subject and the G stem when the subject is not divine. Our data indicate that their example is accurate, but not representative, since the G stem is used more often than the D stem for GD-similar verbs when God is the subject of the verb. Waltke and O’Connor state (quoting Jenni) that one cannot make “a strict rule” about verbs with a divine subject preferring the D stem (Waltke and O’Connor 1990, 408; Jenni 1968, 137). That concession seems to be an understatement; our data suggest that one cannot make a rule about it at all.

5.6 Multiple-Object D Stem

Waltke and O’Connor have a category of verbs that are used with a single object in the G stem and multiple objects in the D stem (1990, 409–10). As discussed in §4.3.2d, they correctly admit that these verbs are not necessarily resultative, but do not address the fact that they have thereby admitted the existence of a class of verbs that do not fit their hypothesis.
Does this admission matter? If there are only a very small number of verbs for which the D stem is marked for multiple objects, those verbal meanings can be attributed to lexicalization of individual roots and need not be accounted for in a general theory of the D stem. But if there are a significant number of such verbs, any theory of the D stem must account for them. Therefore, this section investigates whether there is a pattern of verbal roots that are used with multiple objects in the D stem and a single object in the G stem. We check their example verbs (נְשׁך and נְשׁק) in §5.6.1 and then check all GD-similar roots in §5.6.2 to see if there is a pattern of verbal roots for which the D stem is marked for multiple objects.

5.6.1 Checking Waltke and O’Connor’s Example Verbs: נְשׁך and נְשׁק

Waltke and O’Connor’s two examples of the D stem referring to multiple objects are נְשׁך and נְשׁק.

נְשׁך. Waltke and O’Connor state that in Genesis 49:17 the G stem of נְשׁך has a single object, whereas in Jeremiah 8:17, the D stem of נְשׁך has a plural object. Genesis 49:17 reads נְשׁך: ‘חַֽאֲרִי וְעָלֵי דֶ֔רֶךְ נְשׁךְ וְעַל־אָֽרֶץ נְשׁקָּה עָלְּיָֽה אֲמִּ֥י אֵלֶּ֖יהֶ֑ים יֹֽעֶל מִמֶּֽנָּ֖ה אָֽלֶֽה׃ ‘May Dan be a snake beside a road, a serpent beside a path, which bites a horse’s heels, and its rider falls backward’. Note that the direct object is plural in form and meaning; Waltke and O’Connor explain this G-stem as “one (plural) object” (1990, 410, parentheses in original). Presumably they count this as one object because it is the heels of a single horse, counted as a single pair. For a contrasting D stem, they list Jeremiah 8:17: נְשׁק: ‘כִּ֤י נֵתָ֖לָה כַּֽעֲנָֽהִים בְּחֵֽשְׁפָּֽי מַשָּֽׁעְרֹת יְשֵׁ֣ר אָוּר־לַ֖ה יִֽשְׁפְּרֵֽהוּ אֲמִ֥י אֵלֶ֖יהֶם נְשׁקִּֽים׃ ‘For behold me sending snakes among you, vipers for which there is not a charm, and they will bite you’,
declares YHWH.” The object נָשַׁךְ ‘you’ is plural. Thus the texts that they cite provide evidence for the pattern that they describe, although their G-stem example is debatable.

Looking at the use of נָשַׁךְ throughout our source, of the 8 times that נָשַׁךְ occurs in the G stem, it has no object three times, a grammatically singular object three times, and a grammatically plural object twice: Genesis 49:17 and Amos 9:3. As discussed above, the grammatically plural object in Genesis 49:17 is arguably singular in meaning, but the same is not true of Amos 9:3b: ‘And if they hide from before my eyes in the floor of the sea, from there I will command the serpent and it will bite them’. In context, the masculine plural object of the verb refers to the remnant of the people (םֶּתֶא in 9:1; note also the plural verbs in 9:2 and 9:3). Although one might argue that a remnant is a collective and hence should be considered to be singular, there are two reasons that this is unlikely. First, the masculine plural pronominal suffix on נָשַׁךְ in Amos 9:3 may suggest that the writer considered it to be plural. Second, Waltke and O’Connor have already argued in Jeremiah 8:17 that a masculine plural pronominal suffix that refers to a group of people is plural, so to be consistent, they should treat Amos 9:3 the same. Thus the G stem of נָשַׁךְ is used with a plural object in Amos 9:3, just as the D stem is used in Jeremiah 8:17.

The verb נָשַׁךְ occurs twice in the D stem. In Numbers 21:6, the object is singular in form, but collective in meaning: נָשַׁךְ ‘and they bit the people’. In Jeremiah 8:17, as discussed above, the object is plural in form and meaning. Thus the D stem is used with a plural object once and possibly both times that it occurs.
Since both the G stem and the D stem of לֵשַׁךְ can have a plural object, the distinction between them is not that the G stem has a singular object and the D stem has a plural object. At best, as Waltke and O’Connor suggest (1990, 409n36), it might be that the D stem of לֵשַׁךְ cannot represent an isolated event on a single object. Since there are only two occurrences in the D stem, however, לֵשַׁךְ provides only modest support for this hypothesis.

1. לֵשַׁךְ. The other verbal root that Waltke and O’Connor use to exemplify the D stem referring to action on multiple objects is the verb לֵשַׁךְ. As a G-stem example describing a single action on a single object they list Song 8:1b בֵּיהַ֥ז אַנַּ֣סְתֶּ֨הָ אָנֻ֔סְתָּ֖ה יִנַּֽשְׁךְ׃ ‘I would find you in the outside [and] I would kiss you’. As an example of a D-stem verb describing a set of actions on multiple, separate objects, they list Genesis 31:28א וַיֵּֽשְׁךְ לָֿ֣בֹ֖ו בְּכַֽהֲנֵ֥י לְבָֽנָּֽי׃ ‘And you did not allow me to kiss my sons and my daughters’. Their two examples thus support the distinction that they propose.

Looking beyond their two examples, of the 26 times that לֵשַׁךְ occurs in the G stem in our source, it has a grammatically plural object with a clearly plural meaning 4 times: Genesis 48:10; 1 Kings 19:20; Hosea 13:2; Ruth 1:9. For example Genesis 48:10b reads לֵֽשַׁךְ אֲנָ֖מָה אֲמָ֣תְךָ אָנֵֽמָה׃ ‘And [Joseph] brought them to him, and he kissed them and embraced them’. The object is Joseph’s two sons Ephraim and Manasseh. One could argue that the brothers are considered as a unit, and they might be, but the same could be argued for the sons and daughters in Waltke and O’Connor’s D-stem example Genesis 31:28, which they treat as plural.

Of the 5 times that לֵשַׁךְ occurs in the D stem in our source, it has a grammatically plural object with a clearly plural meaning three times: Genesis 31:28; 32:1; 45:5. In Genesis 29:13a,
however, the object is grammatically singular with a singular meaning: וַיְהִי֩ כָּשֶׁ֨בֶל בַּר יָאָשָׁ֣וֹת לָאָבִ֗ן וַיִּקֹּֽצֶֽהוּוּ לַקְרָאִ֝תָּהּ וַיָּאָשֶֽׁרְוּ שְׁאֵלָהוּ And it was when Laban heard the news of Jacob, his sister’s son, he ran to meet him and embraced him and kissed him and brought him to his house.’ In Psalm 2:12, the object is also singular: נַשִּׁקְוּ־בַר ‘Kiss [the] son’. 106

In summary, the D stem of נְשַׁק is used for an isolated event in Genesis 29:13 and Psalm 2:12, so these are counter-examples to Waltke and O’Connor’s claim that the D stem of נְשַׁק is marked for plural events. At best, the distinction between the G and D stems of נְשַׁק is that the D stem is more likely than the G stem to describe action on multiple objects, but both stems can be used for plural objects and both stems can be used for isolated events with a single object.

5.6.2 Checking the GD-Similar Verbs

In order to look at all occurrences of all GD-similar verbs in our sample, we need to decide what constitutes an object. For example, consider the root חָכָה ‘to wait or hope’. The subject does not necessarily interact with the thing for which one waits or hopes, so is it a direct object? Furthermore, the particle that precedes the thing for which one waits or hopes varies. In Job 32:4, it is preceded by the direct object marker את: הָאָלִיָּהּ חָכָה וַיֹּלֶדֶת ‘And Elihu waited for death’, whereas in Job 3:21, it is preceded by the preposition ל: הָאָלִיָּהּ לֹא חָכָה ‘the ones who wait for death’, and in Hosea 6:9, it is preceded by no particle at all: בְּחַכָּה אֱלִישׁ בְּרֹתְיוֹ ‘and as robbers wait for a man’. Which of these, if any, are the object? Furthermore, Hebrew often omits a direct object that can be inferred from the context (van der Merwe et al. 1999, 241n42; Arnold and

106. If רַב is adverbial ‘purely’ rather than an Aramaic loanword ‘son’, then there is no explicit object. The context, however, still implies that the object is the singular ruler.
Choi 2003, 192; Williams and Beckman 2007, 209). But distinguishing an inferred direct object from a generalized action with no specific direct object can be tricky.

In response to these issues, our data tags something as the direct object of the verb if it can reasonably be understood as such, even if it is the object of a preposition (typically ב or ל), and even if it occurs outside of the verb’s clause. We marked a verb as having no direct object only if there was nothing in the context that could reasonably be construed as a direct object. If one were to be more conservative about marking something as a direct object, many more verbs would lack a direct object, but my impression is that the comparison between the D stem and the G stem would not significantly change.

A final complication is that the grammatical number of an object can differ from the number of what it means. In other words, grammatically plural objects can have a singular referent, and grammatically singular objects can have a plural referent. For the former, see the discussion in §5.6.1 regarding Waltke and O’Connor’s analysis of עִקְּבֵי־סוּס ‘a horse’s heels’ in Genesis 49:17; it is grammatically plural, but it refers to a single natural set. For the latter, see the discussion in §5.6.1 regarding the use of the word עָם ‘people’ in Numbers 21:6; it is grammatically singular, but it refers to a group of people, so it may be considered plural.

In response to this complication, we tagged the grammatical number of the object separately from the ‘meaning’ number of the object. Unfortunately, it is unclear how to set rigid standards for deciding the ‘meaning’ number in many cases. In response to this, we tagged objects as ‘uncertain’ if the number was not clear. Different judgments on this matter would doubtless lead to different percentages of objects that singular or plural ‘meaning’ numbers, but
since ambiguous objects like עַם ‘prope’ were used with both stems, and since the frequency of ‘uncertain’ was approximately the same in both stems, changing the standard is unlikely to significantly change the comparison between the G stem and the D stem.

Table 31 shows the results of this analysis for all occurrences of all GD-similar verbs in our sample.  

<table>
<thead>
<tr>
<th>Object</th>
<th>Both Stems</th>
<th>G Stem</th>
<th>D Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4796</td>
<td>3173</td>
<td>1623</td>
</tr>
<tr>
<td>Grammatically Singular</td>
<td>2266</td>
<td>1541 (49% of G)</td>
<td>725 (45% of D)</td>
</tr>
<tr>
<td>Grammatically Plural</td>
<td>1314</td>
<td>775 (24% of G)</td>
<td>539 (33% of D)</td>
</tr>
<tr>
<td>Singular Meaning</td>
<td>1805</td>
<td>1267 (40% of G)</td>
<td>538 (33% of D)</td>
</tr>
<tr>
<td>Plural Meaning</td>
<td>1509</td>
<td>880 (28% of G)</td>
<td>629 (39% of D)</td>
</tr>
</tbody>
</table>

The first row of table 31 shows that when an author has the choice between the G stem and the D stem to communicate the same meaning (i.e., a GD-similar verb), authors use the G stem about twice as often as the D stem. If the object is plural either grammatically or in its meaning, however, the G-stem preference is much smaller. Thus a plural object makes an author more likely to use the D stem than if the object were singular, although the G stem is still more likely.

When one looks on a root-by-root basis, the results are similar, regardless of whether one looks at the grammatical number or at the number of the meaning of the object.

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107. The number of singular and plural objects are less than the total because some occurrences lack objects and others were marked as having an uncertain number for the object (e.g., because an entire phrase or concept is the object of the verb).
Looking at the grammatical number of the object, there are 36 roots for which the D stem object is clearly plural at least once and never singular. Only 4 of these roots occur at least five times in the D stem, and hence might be said to have a pattern of use in the D stem:adol, לְּחֵם, פָּרָש, קִרּוֹ. Conversely, there are 16 roots of which the same thing can be said about the G stem, only 1 of which occurs at least 5 times in the G stem: נשָא. Thus there are more roots that are potentially marked for a plural object in the D stem than roots that may be so marked in the G stem.

Looking at the number of the meaning of the object, there are 48 roots for which the D stem object is clearly plural at least once and never singular. 11 of these roots occur at least five times in the D stem, and hence might be said to have a pattern of use in the D stem:סְפָר, לְּחֵם, גֵד, נְגַה, פָּרָש, קִרּו, קֶבֶר, רָדָף, שִׁבַּר-1. Conversely, there are 22 roots of which the same thing can be said about the G stem, only 6 of which occur at least 5 times in the G stem:מס, לְּחֵם, נשָא, סְפָר, זָכַר-1, קֶבֶר. Thus, regardless of whether one looks at the grammatical number or the number of the meaning of the object, more roots are potentially marked for a plural object in the D stem than in the G stem. 108 This coheres with the results that we found earlier by counting occurrences rather than stems that are potentially marked.

This difference is modest, but a theory of the D stem that could explain it would be preferable to one that cannot (e.g., Waltke and O’Connor’s theory), all else being equal.

108. Note that every verb that may be marked for an object that is grammatically plural (D,adol, לְּחֵם, פָּרָש, קִרּו; G, נשָא) is also in the list of verbs marked for an object that is plural in meaning.
5.7 Frequentative D Stem

Waltke and O’Connor (1990, 414–6) discuss verbs that they claim distinguish the D stem from the G stem in that the D stem describes frequentative action, either repeated in time or distributed over space. Prominent groups of such verbs include verbs of movement, verbs of vocal expression, and verbs of professional or habitual activity.¹⁰⁹

Most, but not all, of these verbs are syntactically intransitive in the G and D stems. In §2.1.2 we discussed the fact that Waltke and O’Connor’s hypothesis cannot account for verbs that are intransitive in the D stem. They admit that most of these frequentative verbs are intransitive in the D stem, but they do not address the issue that their hypothesis requires all D-stem verbs to be transitive.

Even for frequentative verbs that are transitive in the D stem, however, if the distinction between the G and D stems is only that the D stem is marked as frequentative, such a verb would not fit Waltke and O’Connor’s hypothesis. Instead, Waltke and O’Connor’s hypothesis requires the D stem to be resultative, meaning that it describes the subject as putting a passive undersubject in a state. Waltke and O’Connor admit that these verbs are not resultative (1990, 414–5), and we confirmed that in §4.3.4 by investigating all occurrences of their example verbs.

Since any pattern of verbs needs to be accounted for by a theory of the D stem, this section looks to see if there is a pattern of verbal roots that are marked for frequentative action in the D stem. In §5.7.1 we investigate Waltke and O’Connor’s example verbs (אָרָב, בָּלְלָה, חַכְּהָ, רָבוֹת, תֵּלַּה), and then §5.7.2 extends the investigation to all GD-similar verbs.

¹⁰⁹ Thus they define frequentative action to include professional, characteristic, and habitual action.
5.7.1 Checking Waltke and O’Connor’s Example Verbs

ארב. Of the 20 occurrences in the G stem, it clearly has a frequentative meaning 7 times, might have a frequentative meaning once, and clearly does not have a frequentative meaning 12 times. As an example of a frequentative meaning in the G stem, Psalm 10:9 describes wicked people as follows: ‘He waits in ambush like a lion in a thicket. He waits in ambush to seize an oppressed person. He seizes an oppressed person when he draws him into his net’. Since this describes the characteristic behavior of a wicked person rather than a specific incident, it is a type of frequentative action.

Of the two occurrences of ארב in the D stem, one clearly has a frequentative meaning (Judges 9:25), but the other does not (2 Chronicles 20:22). Both are participles; in Judges 9:25, the context suggests that they are professional ambushers, whereas 2 Chronicles 20:22 describes a single occurrence. Thus ארב is not marked for frequentative action in either stem.

דלג. The single G-stem occurrence (Zephaniah 1:9) has a frequentative meaning since it describes the characteristic actions of certain people: ‘In that day, I will punish all who leap over the threshold, the ones who fill their master’s house with violence and deceit’. Of the 4 D-stem occurrences, one is frequentative (Song of Solomon 2:8), whereas the others might or might not be frequentative.

In summary, it is possible that the D stem is marked for frequentative action, but one could say the same thing about the G stem, since the one occurrence is frequentative.110

110. One might be tempted to say that the frequentative nature of Zephaniah 1:9 is due to the fact that it is a substantival participle, and the fact that it is G stem is irrelevant; but if we make that move, then that same explanation would make 2 Chronicles 20:22 irrelevant for deciding the frequentative nature of the D stem of ארב.
The verb חכת ‘to walk’ occurs 1419 times in the G stem in our source, so it was sampled using the procedure described in §3.2. Of the 147 G-stem samples, it is clearly frequentative 49 times (33%), possibly frequentative 11 times (7%), and clearly not frequentative 87 times (59%). Of the 25 times that חכת occurs in the D stem, it is clearly frequentative 20 times, and the other 5 might be frequentative. Since the G stem refers to a frequentative event sometimes but not always, whereas the D stem arguably always refers to a frequentative event, the D stem may be marked as frequentative, although a few of the occurrences are debatable.

Distinguishing frequentative from non-frequentative use of the verb חכת is difficult, since the meaning of the verb ‘to wait’ intrinsically refers to an action (or non-action?) that extends over time. Nevertheless, out of 13 occurrences in the D stem, it describes characteristic (and hence frequentative) action three times (Isaiah 64:3, Hosea 6:9, and Job 3:21), extensive (and hence frequentative; see §5.7.2) action once (Daniel 12:12), and non-frequentative action six times (2 Kings 7:9; 9:3; Habakkuk 2:3; Zephaniah 3:8; Psalm 106:13; Job 32:4). It is uncertain whether the remaining three D-stem occurrences and the one G-stem occurrence are frequentative. For example, one D-stem occurrence and the only G-stem occurrence both occur in Isaiah 30:18, which reads ‘And therefore YHWH waits [D stem] to be gracious to you, and therefore he is exalted to have compassion on you, for YHWH is a god of justice; blessed are all who wait [G stem] for him’. In context, one can make a case that either or both of those occurrences refer to a single occurrence or to characteristic behavior. Waltke and O’Connor say that “with verbs of hoping and expecting the Qal [G stem] expresses any kind of action other than the frequentative indicated by the Piel [D stem]” (1990, 416). Since there is only one occurrence in the G stem, and that one is
ambiguous, Waltke and O’Connor’s statement is unprovable. Furthermore, since almost half of the time, the D stem is non-frequentative, the D stem of this verb is not marked as frequentative.

מֶהָּ has a frequentative meaning none of the 93 times that it occurs in the G stem. Both times that it occurs in the D stem (Isaiah 10:1 twice) it has a frequentative meaning. Thus the D stem seems to be marked as frequentative, but the paucity of examples makes this tentative.

About this verb, Waltke and O’Connor (1990, 416) quote Jenni (1968, 160) as saying that the D stem almost always refers to customary behavior with multiple partners, whereas the G stem describes a specific instance. This statement is true as a general trend, but there are exceptions. Of the 16 times that נֵאַף occurs in the G stem, 3 times it refers to a single act, 7 times it might refer to either a single act or to characteristic behavior, and the remaining 6 times it refers to repeated behavior. For example, Jeremiah 3:9 uses the G stem to describe Judah’s characteristic behavior, referring metaphorically to her idolatry as adultery: ‘And from the lightness of her prostitution, she defiled the land and committed adultery with stone and tree’. Of the 15 times that נֵאַף occurs in the D stem, there are no occurrences where it clearly refers to a single act, 3 occurrences that are unclear, and 12 that refer to repeated behavior. Thus both stems are used to refer to repeated behavior, but the D stem may be marked for that meaning, whereas the G stem is not.

צעֵק occurs once in the D stem (2 Kings 2:12a). The use of the participle of צָעֵק along with the repetition of אָבִי may suggest a repeated cry, but this is uncertain. It reads And Elisha saw [it] and he was crying out, “My father, my father! The chariots of Israel and its horsemen!”
Of the 48 times that the נָצָק occurs in the G stem, it is non-frequentative 40 times, frequentative 6 times, and there are 2 other occurrences where a frequentative nuance is possible, but the context does not require it. As an example of a frequentative use of the G stem, Psalm 88:2 reads: ‘O YHWH, God of my salvation, by day I cry out [and] in the night before you’.

Since the one occurrence of נָצָק in the D stem may be frequentative, and since there are non-frequentative uses of the G stem, it is possible that the D stem is marked for a frequentative meaning. Since there is only one D-stem occurrence, however, this is uncertain. We can say, however, that most frequentative occurrences are in the G stem.

1. As with the verb נָצַה, distinguishing frequentative from non-frequentative use of the verb נָצַה is difficult, since the meaning of the verb ‘to wait’ intrinsically refers to an action (or non-action?) that extends over time. All 5 occurrences of this in the G stem are participles describing people who characteristically wait for YHWH. Of the 41 occurrences of the D stem, five of them (Hosea 12:7; Psalm 25:5; 130:5(x2); Job 7:2) have something specific in context that indicates a frequentative action. For example, Hosea 12:7b says: ‘And we wait continually (דָּאַכְּר֥הוּ לְאַלְּאַלְּכְּרָהוּ הַמֶּלֶךְ) for your God’. The other 36 occurrences in the D stem are unclear. Since we have been unable to ever rule out a frequentative meaning in either stem, one could argue that either stem is marked for a frequentative meaning.

2. This verb occurs 3 times in the G stem, all of which refer to a one-time action. For example, Genesis 3:7 reads ‘And the eyes of the two of them were opened, and they knew that they were naked. And they...’
sewed together fig leaves and made loincloths for themselves’. The one time that the verb occurs in the D stem, it has a frequentative meaning. Ezekiel 13:18 reads הַמֶּ֔לֶךְ שֹׁלֵשׁ וְוַתַּֽשָּֽׁפְּר֞וֹת עָלָ֣יו חוּלִיָּ֔ה ‘Thus says Lord YHWH, ‘Woe to the women who sew bands on all wrists of hands and who make the veils on the head[s] of every size to hunt down lives! Will you hunt down the lives of my people while preserving your own lives?’’. Thus מָר may be marked as frequentative in the D stem, but there are too few examples to be confident of this.

ועָשׂ ‘to (give/take) a tenth’ occurs twice in the G stem and 7 times in the D stem in our source. Both G-stem occurrences are in 1 Samuel 8, describing the predicted actions of Israel’s future king. Verse 15 reads וְתֹאֵר תָּשֹׁפֶּם יִשְׂרָאֵל יָנֹ֥ה לְפָרָתְיוֹ לְשֵׁמֵֽךְ ‘He will take a tenth of your seed and of your vineyards, and give [them] to his officers and to his servants’. Verse 17 reads וְתֹאֵר תָּשֹׁפֶּם הַמָּמָּד הַיִּירֵי לְשֵׁמֵךְ ‘He will take a tenth of your flocks, and you will become his servants’. Waltke and O’Connor (414) use this as an example of the non-frequentative meaning of the G stem. Verses 9 and 11, however, use the word מַשְׁפַּט to indicate that chapter 8 describes the characteristic behavior of the future king, not a one-time activity. For example, verse 11 reads יְהִי מַשְׁפַּטְוָה מִלָּהּ אָשָׁר יִקְלַד לְךָ ‘this will be the custom of the king who will reign over you’. Thus, pace Waltke and O’Connor, the G stem of עָשָׂר consistently describes repeated, characteristic, customary behavior, not a one-time action.

As such, this use of the G stem is like the customary use of the D stem of עָשָׂר. For example, Genesis 28:22 reads וְכִלּוֹ אֵשָּר תֹּאֵר יִשְׂרָאֵל עָשָׂר יִתְּפַּרְּרוּ לָךְ ‘and all that you give to me, I will
surely give a tenth to you’. All seven occurrences of the D stem of שָׂרָה are similar. Thus consistently describes customary behavior, regardless of what stem it is in.

In summary, of the ten verbs that Waltke and O’Connor list as examples of verbs that are frequentative in the D stem,111 five of them (הלל, חות, נאף, צעק, חפץ) might be marked for frequentative action in the D stem. Of those five, however, only two of them (נאף and חל) occur more than twice in the D stem, and hence only for them is there much evidence that they are marked for frequentative action in the D stem.

These verbal roots are suggestive, but to establish a pattern, more than two roots are needed. To see if there are other such roots, the next section investigates all GD-similar verbs, looking for frequentative action.

111. Waltke and O’Connor (1990, 414) say that Ryder (1974, 130–5) “finds about forty of these roots,” meaning verbs that are frequentative in the D stem. This seems to be a misreading of Ryder, who finds הלל to be the only clear example of frequentative action in the D stem. Ryder says of these verbs that “all these are intransitive, but it would be stretching the term somewhat, to describe them as verbs of continuing action, particularly such concepts as ‘leap’, ‘snort’, or sigh’. ... The danger lies in classifying all of them on the basis proposed for הַלָּל [הלל].”
5.7.2 Checking the GD-Similar Verbs

The definition of frequentative action is somewhat problematic, because it potentially involves a wide variety of phenomena. In order to allow the relevant definition of frequentative action to arise from the data rather than being imposed upon it, we tagged all occurrences of GD-similar verbs in one of seven categories:

- *once*
- *unclear*
- *extensive* (a single event that occurred over an unusually long period)\(^{112}\)
- *occasional* (an action to be done whenever the situation arises)\(^{113}\)
- *periodic* (something done on a regular schedule, such as annually)\(^{114}\)
- *characteristic* (professional or other characteristic activity)\(^{115}\)
- *repetitious* (such as ‘walking about’)\(^{116}\)

Table 32 shows the results on an occurrence-by-occurrence basis:

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112. **Extensive:** E.g., “They should gather all the food of these good years that are coming” (Genesis 41:35a). The verb is tagged as extensive because it takes place over a long period of time (7 years), yet it is described as a single event.

113. **Occasional:** E.g., “And he shall send out the live bird over the open field” (Leviticus 14:7b). The context is the procedure for purifying someone who is healed from a skin disease. The verb is tagged as occasional because it is described as if it will recur from time to time as the situation arises.

114. **Periodic:** E.g., “The priest shall burn wood on it every morning” (Leviticus 6:12b). This is tagged as periodic because it is described as recurring on a regular schedule.

115. **Characteristic:** E.g., “One who walks with wise people will become wise, but a companion of fools will suffer harm” (Proverbs 13:20). This verb is tagged as characteristic because it describes the habitual behavior of a person, not a one-time occasion of keeping someone company (e.g., Samson’s wedding companion in Judges 14:20). Substantival participles often have a characteristic meaning (e.g., physician, midwife).

116. **Repetitious:** E.g., “Shall I make you wander with us, while I wander wherever I wander?” (2 Samuel 15:20b). This verb is tagged as repetitious because it describes David’s future as wandering from place to place as a fugitive. It is distinguished from occasional and periodic in that there is no specific occasion or schedule. This category also includes activities that are composed of many repeated actions on a single extended occasion, such as “Look! He is coming, jumping on the mountains, leaping on the hills!” (Song 2:8).
Table 32: Proportion of Occurrences that are Frequentative (GD-Similar Verbs)

<table>
<thead>
<tr>
<th></th>
<th>G Stem</th>
<th>D Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Occurrences</td>
<td>3173</td>
<td>1623</td>
</tr>
<tr>
<td>Once (not frequentative)</td>
<td>2259</td>
<td>1016</td>
</tr>
<tr>
<td>Unclear</td>
<td>317</td>
<td>197</td>
</tr>
<tr>
<td>Extensive</td>
<td>43</td>
<td>21</td>
</tr>
<tr>
<td>Occasional</td>
<td>151</td>
<td>114</td>
</tr>
<tr>
<td>Periodic</td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>Characteristic</td>
<td>359</td>
<td>237</td>
</tr>
<tr>
<td>Repetitious</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Total frequentative (exclude once and unclear)</td>
<td>597</td>
<td>410</td>
</tr>
</tbody>
</table>

Table 32 shows that when we group all verbal roots together and include all types of frequentative action, the GD-similar verbs in our sample are more likely to describe frequentative action in the G stem than in the D stem, but that is a reflection of the fact that the G stem is used more often in general for these verbs.

Asking a different question, we see that a given occurrence in the D stem is more likely to be frequentative (25%) than a given occurrence in the G stem (19%). The main differences are the frequency of verbs with a meaning of occasional action or characteristic action, although the differences are modest.

Looking on a root-by-root basis, there are 26 GD-similar roots that are used with a clear frequentative meaning in the D stem at least once and never with a clear singular meaning in the D stem. These are the verbal roots that are potentially marked as frequentative in the D stem. Tightening up the criteria, only five of them occur at least five times in the D stem, so there is more evidence of a pattern: דָּחַל, נַעַה, עָשָׂר, קֵוָה, and רקָד. However, עָשָׂר, קֵוָה, 1 have a consistent frequentative meaning in the G stem as well, so their D stems are not marked. Thus we
are left with רָקַד, הָלַךְ, וּשְׁעִירִים. The previous section (§5.7.1) demonstrated that נָאַף, הָלַךְ, וּשְׁעִירִים can be used for frequentative action in both stems, but their D stem might be marked for that meaning. So all we have left to check is רָקַד.

רָקַד does seem to have a pattern of the D stem describing frequentative action in contrast with the G stem. It occurs five times in the D stem. Three of them clearly describe non-singular actions: יְשַׁלְּחוּ כַ֭צֹּאן עֲוִילֵיהֶ֑ם וְ֜יַלְדֵיהֶ֗ם יְרַקֵּדֽוּן 'They send their little ones out like a flock; their children dance about' (Job 21:11); יְשַׁלְּחוּ כַ֭צֹּאן עֲוִילֵיהֶ֑ם וְ֜יַלְדֵיהֶ֗ם יְרַקֵּדֽוּן 'And she saw King David dancing and celebrating’ (1 Chronicles 15:29b). It is debatable whether the other two occurrences (Joel 2:5 and Nahum 3:2) are frequentative. Nevertheless, the D stem contrasts with all three occurrences of רָקַד in the G stem, all of which seem to describe a single occurrence of dancing: יְרַקֵּדֽוּ כְאֵילִ֑ים 'the mountains frolicked like rams' (Psalm 114:4); יְרַקֵּדֽוּ כְאֵילִ֑ים 'What is with you ... O mountains, that you were frolicking like rams?’ (Psalm 114:5, 6); יְרַקֵּדֽוּ כְאֵילִ֑ים 'a time to morn and a time to dance’ (Qohelet 3:4). Thus we have found one additional verbal root (רָקַד) that gives significant evidence of being marked for frequentative action in the D stem.

Conversely, there are 24 GD-similar verbal roots for which the same thing (as the 26 roots above) can be said about their G stem: they have at least one clear example of a frequentative meaning and no clear examples of a non-frequentative meaning. Of these 24 roots, only one of the (קוה) occurs at least 5 times in the G stem, so that is the only one about which one can reasonably speak of a significant pattern. But קוה consistently has a frequentative meaning in the D stem as well, so one cannot say that it is marked for frequentative meaning in
the G stem. Thus there are no verbal roots that give significant evidence that they are marked for frequentative action in the G stem, in comparison with three roots in the D stem.

The fact that we found only three roots that potentially marked for frequentative action in the D stem is surprising, given Waltke and O’Connor’s claim (1990, 414) that Ryder finds “about 40” such verbs. Ryder, however, actually classifies those 39 verbs as having intransitive G (and D) stems (Ryder 1966, 193), not as having frequentative aspect. Ryder does note that these verbs have traditionally been classified as frequentative and that there is some linguistic basis for this, but he clarifies that “the textual evidence is slight” (1966, 197) and that it would be a stretch to classify them as frequentative (1966, 201). Furthermore, he specifically states that if one looks at the texts, one cannot be certain that even הָלַךְ is marked for frequentative action in the D stem or non-frequentative aspect in the G stem (1966, 201).

Our examination of the verbs leads us to conclude that הָלַךְ, נָאַ, and רֶכֶּב are likely to be marked for frequentative action in the D stem, but we agree with Ryder that there is not a major pattern of such verbs.

5.8 Summary and Conclusions

Along with their hypothesis that the D stem has a factitive/resultative meaning, Waltke and O’Connor state that the D stem is less likely than the G stem to be negated. They also claim that for some verbs, the D stem is distinguished from the G stem by being metaphorical, describing indirect action, having a divine subject, describing action on multiple objects, or describing frequentative action.
Contrary to Waltke and O’Connor, we found no significant difference between the G and D stems with respect to a metaphorical meaning, indirect action, or a divine subject.

We did find that multiple objects, frequentative action, and negation all increase the likelihood that the D stem will be used for GD-similar verbs, but the increase is modest. Furthermore, we noted that Waltke and O’Connor’s hypothesis is unable to explain the preference of the D stem for multiple objects or frequentative action.

Finally, recall from §2.4 that frequentative action and action on multiple objects are both factors in verbal plurality. The correlation of the D stem with these features suggests that the choice of the D stem may be affected by verbal plurality. This leads us to Kouwenberg’s theory of the D stem.
Chapter 6. Intensity, Plurality, and Transitivity?

6.1 Kouwenberg’s Hypothesis

As discussed in §1.2.6, Kouwenberg argues that the Semitic D stem began in Proto-Semitic with D-stem verbs derived from adjectives that indicated intensity (e.g., adjective ‘very wide’ → D ‘to be/become/make very wide’). Over time this developed into a productive mechanism, whereby intensive D-stem verbs were formed from G-stem verbs directly rather than from intensive adjectives. Since intensity is a component of verbal plurality, the meaning of the D stem in some verbs broadened to indicate non-intensive types of verbal plurality, such as action on multiple objects (e.g., ‘to kiss multiple people’). Since intensity is also a component of high semantic transitivity, the meaning of the D stem in other verbs came to be associated with high transitivity. In particular, because a factitive meaning connotes high transitivity, the D stem became preferred over the G stem for factitive meanings, so non-intensive factitive meanings (e.g., ‘to make wide’) were lost by the G stem and gained by the D stem. Due to the lack of a contrast with a non-intensive factitive G stem, the factitive D-stem lost its original intensive meaning (e.g., D ‘to make very wide’ → ‘to make wide’). Because Kouwenberg hypothesizes that all stages of this process had been reached by the earliest historical stages of Akkadian (Kouwenberg 1997, 432–3), and because the various meanings are expected to be layered on top of one another (§2.5.1), his hypothesis leads us to expect all of these uses to occur with the Hebrew D stem, with different verbal roots exhibiting different uses (§2.5.2).

As will be explained below, this hypothesis leads to three predictions that are testable with our source: (1) Only verbs that have low transitivity in the G stem will add an additional agent in the D stem. (2) The D stem will have higher verbal plurality or (3) higher transitivity
than the G stem for some GD-similar verbs, whereas the reverse will be far less common. The following sections explain these predictions and check them with data from our source.

6.2 The G-Stem Transitivity of Verbs that Add an Agent in the D Stem

According to Kouwenberg, verbs will only add an agent when going from the G stem to the D stem (i.e., have a factitive or causative D stem) if the G stem is low in semantic transitivity (1997, 98–100). The reason for this is that the D stem indicates primarily an increase in semantic transitivity, not the addition of an agent. Since adding an agent to a low-transitivity verb increases its transitivity, the D stem is preferred for this, whereas if a verb already has high transitivity, it already fits the preferred use of the D stem even without adding an agent. Furthermore, adding an agent to a high-semantic-transitivity verb is a relatively uncommon and complicated causative meaning, so Kouwenberg argues that the more distinct morphology of the H stem (Š stem in Akkadian) is used rather than the D stem for this purpose (1997, 248–9, 266–7). Therefore, if Kouwenberg’s hypothesis is correct, the only verbs that add an agent when switching from the G stem to the D stem are those with a low-transitivity G stem.

To test this, we will examine the G-stem transitivity of the two kinds of verbs that add an agent in the D stem with respect to the G stem: factitive verbs and causative verbs.¹¹⁸

¹¹⁷. The Akkadian equivalent of the Hebrew H stem is called the Š stem. Kouwenberg makes an exception for a few intransitive agentive verbs whose phonetics inhibit the formation of the Š stem, and therefore use the D stem as a causative (Kouwenberg 1997, 248–9).

¹¹⁸. In this chapter, we are using the terms as Kouwenberg defines them, not as Waltke and O’Connor define them. Recall that for Waltke and O’Connor, a verb is factitive if it describes a passive undersubject being placed in a state without reference to the process (§4.1). Kouwenberg’s definitions of factitive and causative are discussed below.
6.2.1 Factitive Verbs’ G-Stem Semantic Transitivity

If a verbal root can be used with a patient subject in the G stem (i.e., a patientive verb §2.3.1), and if it has a D-stem occurrence with a related meaning that has an agent, then that D-stem meaning is factitive as Kouwenberg defines the term (§2.3.1). Because it is patientive in the G stem, such a verb has low semantic transitivity in the G stem by definition.119 For example, the verb גָּלְגָּל means ‘to be great’ in the G stem; its subject is a patient of state (see table 6 in §2.2.3) and there is no direct object, so that meaning has low semantic transitivity. In the D stem, גָּלְגָּל means ‘to make someone great’. That meaning adds an agent to a verb with a patient subject, so it is factitive. Thus Kouwenberg has defined his terms in such a way that factitive verbs fit his hypothesis by definition.

Since factitive verbs fit Kouwenberg’s hypothesis by definition and do not distinguish it from other options (such as Waltke and O’Connor’s hypothesis), they are not explored further.

6.2.2 Causative Verbs’ G-Stem Semantic Transitivity

If a verbal root requires an agent (or experiencer) subject in the G stem (i.e., an agentive verb §2.3.1), and if it has a D-stem occurrence that adds an additional agent or experiencer, then it is causative as Kouwenberg defines the term (§2.3.1). Of the 244 verbal roots that occur in

119. By definition, a patientive verb has at least one occurrence with a patient subject in the G stem, and hence at least one occurrence with low semantic transitivity in the G stem. This does not exclude the possibility that there are other occurrences in the G stem that have an agent subject and therefore higher semantic transitivity. But since the relevant cases are those where the D stem is adding an additional agent compared to some G-stem meaning, only G-stem occurrences with a patient subject are relevant for verbs that are factitive in the D stem.
both the D stem and the G stem in our source, 167 require an agent in the G stem. Of these, 16 verbal roots add an additional agent (or experiencer)\textsuperscript{120} in the D stem relative to the G stem.

Table 33 lists those 16 verbal roots, along with the features in the G stem that affect their transitivity as defined by Næss (2007, 41): a clause with prototypical high semantic transitivity has an agent whose involvement in the action “is partly defined by its being volitional or sentient” (+VOL), instigates the action (+INST), and is not affected by the action (-AFF), as well as a patient with the opposite characteristics (-VOL -INST +AFF) (see §2.2.5 for further explanation of these characteristics). Næss’ definition of high transitivity is used because of its precise, motivated definitions, explanatory power, and simplified data requirements, as explained in section 2.2.5.\textsuperscript{121}

\textsuperscript{120} The word ‘agent’ (or ‘experiencer’) is critical here. For example, יָרָך ‘to gird’ in the G stem can add an additional human in the D stem (‘to gird someone’), but since that human who is being girded is described as non-volitional and not exercising control, she is a patient rather than an agent or experiencer (see tables 6 and 8 in §2.2.3). Therefore יָרָך in the D stem is neither causative nor factitive by Kouwenberg’s definition. Instead, it is just a verb with a direct object.

\textsuperscript{121} As discussed in §2.2, other scholars have posited many other components of semantic transitivity. Checking those components for correlation with the D stem is reserved for future work (§7.5).
### Table 33: G-Stem Transitivity of Verbs that Add an Agent in the D Stem

<table>
<thead>
<tr>
<th>Root</th>
<th>G-Stem Meaning</th>
<th>Transitivity Features of Subject in the G Stem</th>
<th>Transitivity Features of Object in the G Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VOL</td>
<td>INST</td>
</tr>
<tr>
<td>Prototypical High Transitivity</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>אלף-1</td>
<td>learn / be acquainted with</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>אשׁר-1</td>
<td>walk (metaphorical)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>חווד</td>
<td>rejoice</td>
<td>+</td>
<td>?122</td>
</tr>
<tr>
<td>ירל</td>
<td>give birth123</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>ישנ</td>
<td>sleep</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>שמח</td>
<td>learn / be acquainted with</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>נחל</td>
<td>take possession</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>נשנ</td>
<td>forget</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>עבר</td>
<td>pass over</td>
<td>?</td>
<td>+ / –125</td>
</tr>
<tr>
<td>פלט</td>
<td>escape</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>צחק</td>
<td>laugh</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>וה</td>
<td>drink one’s fill</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>שבס</td>
<td>forget</td>
<td>+</td>
<td>?</td>
</tr>
<tr>
<td>שמע</td>
<td>hear</td>
<td>+</td>
<td>+ / –</td>
</tr>
<tr>
<td>ש輩</td>
<td>laugh at</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>שמח</td>
<td>rejoice</td>
<td>+</td>
<td>?</td>
</tr>
</tbody>
</table>

Note in table 33 that all of the verbs have an affected subject, and that their object (if any) is never clearly affected by the action of the verb. These features indicate that they all have low

122. A question mark ‘?’ indicates that the value of this feature is debatable.

123. יֵלֶד also occurs in the G stem with the meaning ‘to beget’, but the D stem does not add an agent to that meaning, so it is irrelevant to this analysis.

124. Although it might seem that giving birth is a textbook case of a highly affected object, Næss (2007, 103–6) and Hopper (1985) argue that verbs that produce their direct object (e.g., ‘she built a house’) are consistently treated cross-linguistically as low-transitivity verbs whose objects are unaffected by the verbal action. This is discussed later in this section.

125. Two values divided by a slash ‘/’ indicates that the value of this feature varies from example to example.
semantic transitivity by Næss’ definition. Thus they all fit Kouwenberg’s prediction that the D stem adds an additional agent to the G stem only if the G stem has low semantic transitivity.

For example, consider the verb לַאֲשֹׁר. In Proverbs 9:6, it occurs in the G stem: לֹאֲשֹׁרֲתֶן וַיֹּאמֶר: ‘Forsake your simple ways and live! And proceed in an understanding way’. In Proverbs 23:19, it occurs in the D stem: אֶשְׁרַי אֱלֹהִים וְאֶשְׁרַי אָבֹתֵךְ לְךָ: ‘Listen, my son, and be wise! And cause your heart to proceed in the way’. In the latter text, the subject of the imperative verb is second person singular (‘you’). ‘Your heart’ is the direct object. Thus the D stem of לַאֲשֹׁר indicates that the subject (‘you’) causes the undersubject (‘your heart’) to do a process, so it is causative, contrary to Waltke and O’Connor’s hypothesis. But the corresponding G stem meaning is low-transitivity (see table 33), so it still fits Kouwenberg’s hypothesis.

As another example, consider the verb דִּלי. In Exodus 2:2a, it occurs in the G stem: דִּלי וַיֹּאמֶר: ‘The woman conceived and bore a son’. In Exodus 1:16a, it occurs in the D stem: וַיֹּאמֶר אֱלֹהִים אֶשְׁרַי אֱלֹהִים וְאָבֹתֵךְ לְךָ: ‘He said, “when you are helping the Hebrew women to give birth, and you see [them] on the [birthing] stones ...”.’ The D stem is causative because the subject (‘you’) is causing the object (‘the Hebrew women’) to undergo a process (‘giving birth’). This violates Waltke and O’Connor’s system in which the D stem is always factitive/resultative, never causative. The D-stem meaning of דִּלי in Exodus 1:16a cannot be factitive by Waltke and O’Connor’s definition because giving birth is a process, not a state. Furthermore, the grammatical construction in Exodus 1:16a (ב followed by an infinitive construct) indicates that דִּלי is part of a temporal phrase, describing the time while a process is occurring. This is decisive,

126. The the article on ‘in the way’ (and the context) indicate that ‘your heart’ cannot be in construct with ‘in the way’, so ‘proceed in the way of your heart’ is not a possible meaning.
because Waltke and O’Connor (following Jenni) say that the D stem describes an outcome being brought about “without regard to the actual process of the event” (1990, 400), so the D stem of ḫעְנָ in Exodus 1:16a cannot be factitive/resultative by Waltke and O’Connor’s definition.

One might think that the G-stem meaning ḫע ‘to give birth’ would have high semantic transitivity, but Næss (2007, 103–6) and Hopper (1985) demonstrate cross-linguistically that verbs that indicate the creation of their direct object actually have low semantic transitivity. For example, English phrasal verbs with ‘up’ have high semantic transitivity because they indicate the completion of the action and the achievement of the result (e.g., “She cut up the wood”). The critical thing to note is that converting a verb into the corresponding high-transitivity phrasal ‘up’ verb in English eliminates the possibility that it refers to the creation of the object. For example, whereas “She cut the slice of cake” can mean either that she created the slice of cake by cutting it off from the rest of the cake or that she cut a pre-existing slice of cake into additional pieces, the sentence “She cut up the slice of cake” cannot refer to the creation of a new slice of cake. This is an example of a high-transitivity construction disallowing a verbal meaning that entails the creation of the object. Næss and Hopper give examples from other languages as well.

Hopper and Næss both explain the low-transitivity status of creation as follows: The object does not exist prior to the action of the verb, so it is not changed by the action of the verb. For English evidence that a verb of creation is disallowed with a construction that assumes the existence of the object, note that English cannot use a cleft-sentence construction if the main verb refers to the creation of the object: “what he did with his autobiography was burn it” is possible, but “what he did with his autobiography was write it” is ungrammatical.
Thus, surprising as it may seem, the verb ילל is actually low in semantic transitivity in the G stem, so it does fit Kouwenberg’s prediction that only verbs that have low semantic transitivity in the G stem can add an agent in the D stem.

In summary, all 16 of the verbal roots that meet the test conditions fit Kouwenberg’s hypothesis.

Furthermore, 3 of these 16 verbs violate Waltke and O’Connor’s hypothesis because the relevant D-stem meaning does not describe putting a passive undersubject into the state described by the G stem. Instead, they have a meaning that is causative by Waltke and O’Connor’s definition, meaning that the subject causes the undersubject to carry out a process rather than to be in a state. 1 גל ‘to walk in a lifestyle sense’ has a D stem that means ‘to cause someone to do the process of walking in a lifestyle sense; to guide’. ילל G ‘to give birth’ has a D stem that means ‘to help someone do the process of giving birth; to act as a midwife’. צחק G ‘to laugh’ has a D stem that means ‘to cause someone to do the process of laughing; to entertain’.

6.3 Verbal Plurality vs. Stem for GD-Similar Verbs

The second testable prediction of Kouwenberg’s hypothesis is that some verbal roots should have a significant tendency toward higher verbal plurality (§2.4.1) in the D stem than in

127. One might argue that the D stem of צחק means ‘to cause someone to be in an amused state’ and that it is therefore factitive rather than causative. This seems reasonable in principle, but since the G stem always has the process meaning ‘to laugh’ rather than the stative meaning ‘to be amused’ and since there is no separate H stem ‘to cause to laugh’, a factitive meaning of the D stem of צחק is unlikely.
the G stem. This tendency should be shown by GD-similar roots, since a tendency toward verbal plurality is expected to dissipate or never arise when the contrast between the D and G stems is driven by another meaning, such as stative vs. factitive. Even GD-similar roots, however, are not all expected to exhibit higher verbal plurality in the D stem, since the D stem may become interchangeable with the G stem or be lexicalized (Kouwenberg 1997, 437). Nevertheless, Kouwenberg’s hypothesis leads us to expect that at least some GD-similar verbs will be marked for verbal plurality in the D stem, and that none will be so marked in the G stem.

For verbal plurality, the criteria of §2.4.1 were used to tag each occurrence of each GD-similar verb as singular, plural, or uncertain. Table 34 shows the results on an occurrence-by-occurrence basis.

| Table 34: Frequency of Occurrences with Verbal Plurality among GD-Similar Verbs |
|-------------------------------|-------------------------------|
|                               | G Stem                        | D Stem                        |
| Plural                        | 1978                          | 1061                          |
|                               | 62% of G                      | 65% of D                      |
| Singular                      | 648                           | 269                           |
|                               | 20% of G                      | 17% of D                      |
| Uncertain                     | 547                           | 293                           |
|                               | 17% of G                      | 18% of D                      |

The criteria for verbal plurality in §2.4.1 are very broad, so as one might expect, most verbs occur in clauses that display some characteristics of verbal plurality.

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128. Two issues are particularly noteworthy in tagging clauses for verbal plurality. The first issue is that verbal plurality follows the meaning, rather than the morphology (§2.4.1), so if the subject or object of the verb is a collective (e.g., ‘Israel’ or ‘the people’), the clause is considered do be verbally plural, even though the subject or object is morphologically singular (Kouwenberg 1997, 118). The other issue is that many laws and proverbs are written in terms of a single occurrence done by a single subject on a single object (e.g., ‘If a man kills his companion accidentally ...’), but the genre presents the event as one that may reoccur from time to time. The verbal plurality of such occurrences is tagged as unclear, since it depends on whether the writer was thinking of it as an event that characteristically occurs from time to time, or if the writer was thinking of it in terms of a single event.
Table 34 shows that the D stem is slightly more likely to express verbal plurality than the G stem, but the difference is very modest. Furthermore, both stems are used for both verbal plurality and the lack thereof, so we cannot say that the D stem is consistently marked for verbal plurality.

Looking on a root-by-root basis, we characterize a root as possibly marked for verbal plurality in a particular stem if there is at least one occurrence in that stem with an unambiguously plural meaning and none with an unambiguously singular meaning in that stem. For a verbal root to be evidence for Kouwenberg’s proposal, it should be potentially marked for verbal plurality in the D stem but not in the G stem. A verbal root that is marked for verbal plurality in the G stem but not the D stem would constitute evidence against his proposal. A verbal root that is potentially marked for verbal plurality in both stems or in neither stem constitutes evidence neither for nor against Kouwenberg’s hypothesis.

Of the 138 GD-similar verbal roots, there are 49 that are potentially marked for verbal plurality in the D stem but not in the G stem, 9 of which occur at least five times in both stems, so that we can be somewhat confident that their ‘marking’ is not simply due to their low frequency of attestation. Those 9 roots are זרה, זבח, בקע, אסף, רדף, קבר, פרש, שבד-1, לוח-1, נתן. Conversely, there are 24 GD-similar verbal roots that are potentially marked for verbal plurality in the G stem but not in the D stem, only one of which (חלק-2) occurs at least five times in both stems.

If we raise the standards by requiring at least two clear instances of a verbally singular meaning in the unmarked stem and two clear instances of a verbally plural meaning in the
marked stem, we are down to 29 roots that are potentially marked for verbal plurality in the D stem but not in the G stem, 8 of which occur at least five times in both stems: אסק, בכות, ובח, נחמ, פרש, כבר, ורך, שבר-1. Using the same tighter criteria in the reverse direction all but eliminates possibilities for the G stem having the same marking: there are 2 roots that might be marked for verbal plurality in the G stem (כמש והפל), but both occur less than five times in the G stem, so we can have little confidence that the absence of a verbally singular meaning in the G stem is not simply due to its low attestation.

In fact, if we tighten the criteria still further, requiring at least 5 singular occurrences in the G stem, 5 occurrences with verbal plurality in the D stem, and 0 uncertain occurrences in the D stem, we would still have 5 verbal roots that give strong, unambiguous evidence of using the D stem to mark verbal plurality: אסק, בכות, ובח, פרש, כבר. This seems like a small number of roots, but recall that this is 15% of the total number of GD-similar roots that occur at least 5 times in both stems. No roots meet the corresponding criteria for the G stem to be marked for verbal plurality.

As an example of a marked D stem, והב occurs 22 times in the D stem, always with a verbally plural meaning. Most occurrences of והב in the D stem are verbally plural because they refer to characteristic behavior. For example, Hosea 4:13a reads ‘והדיות הנקרים והتباعים they sacrifice on the tops of the mountains’. 129 A different type of verbal plurality occurs in 1 Kings 8:5 and 2 Chronicles 5:6, which read והפניא שלמה והכתרה שלמה והכתרו שלמה והסנה לא להקתויבל and King Solomon and the entire congregation of Israel, who

129. A second way that Hosea 4:13a exhibits verbal plurality is that the subject is plural.
were assembled to him, were with him before the ark, *sacrificing* sheep and cattle which could not be counted or numbered because of [their] abundance’; these are verbally plural because the object is plural (and also because the subject is plural).

The verb זבח also occurs 112 times in the G stem in our source. It has a verbally plural meaning most of the time, but at least 10 times זבח describes a single person sacrificing a single thing on a single occasion. When זבח has an unambiguously singular meaning like this, it is always in the G stem, never in the D stem. For example, in 1 Samuel 16:2b, YHWH tells Samuel: ‘take a heifer in your hand and say, “I have come to sacrifice to YHWH”’. The fact that of the 33 GD-similar verbal roots that occur at least five times in both stems, 9 of those roots (27%) give some level of evidence of being marked for verbal plurality in the D stem but not the G stem, 5 of those roots (15%) give strong, unambiguous evidence of being so marked, and none have significant evidence of reverse marking – that fact provides some confirmatory evidence for Kouwenberg’s hypothesis. Thus, even though the G stem and D stem are not very different in verbal plurality overall for GD-similar verbs (table 34), 15% of such verbal roots are clearly and unambiguously marked for verbal plurality in the D stem, as Kouwenberg’s hypothesis leads us to expect. Nevertheless, the small number of roots that occur frequently enough for such analysis (33 total roots, 5 of which are marked for verbal plurality in the D stem) makes this conclusion tentative.130

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130. Future work (§7.5) could check if a more restrictive definition of verbal plurality has a stronger correlation. Recall that a plural object increases the likelihood that the D stem will be used (§5.6) and that 3 verbal roots are marked for a frequentative meaning in the D stem (§5.7).
6.4 Semantic Transitivity vs. Stem for GD-Similar Verbs

The third testable prediction of Kouwenberg’s hypothesis is like the second: Just as some verbal roots should have a significant tendency toward higher verbal plurality (§2.4) in the D stem than in the G stem, the same should be true for semantic transitivity (§2.2). This trend is true by definition for all verbs that have a stative meaning in the G stem and a factitive meaning in the D stem. According to Kouwenberg, the D stem is also used with non-factitive verbs to optionally mark high-semantic-transitivity clauses (1997, 196–7). If this is the case, then GD-similar verbs should tend to have a higher semantic transitivity in the D stem than in the G stem. Just as was the case with verbal plurality, however, not all GD-similar roots are expected to exhibit higher semantic transitivity in the D stem, since the D stem may become interchangeable with the G stem or be lexicalized, or an association with higher transitivity may never have developed for that particular root in the D stem (Kouwenberg 1997, 437). Nevertheless, if the D stem does not show an overall preference for higher transitivity in GD-similar verbs, then that would be evidence against Kouwenberg’s hypothesis, since it would suggest that the use of the GD stem for factitive meanings did not arise out of a general tendency for the D stem to indicate high semantic transitivity.

To test this, we measure the semantic transitivity of every occurrence in our sample of both the G stem and the D stem of every GD-similar verb. As we did in §6.2.2, we measure semantic transitivity using Næss’ (2007) criteria that a clause with prototypical high semantic transitivity has an agent that is +VOL +INST -AFF and a patient that is -VOL -INST +AFF (see §2.2.5 for an explanation of Næss’ criteria and a justification for using them).
6.4.1 Semantic Transitivity of GD-Similar Verbs on an Occurrence Basis

Table 35 shows the results on an occurrence-by-occurrence basis. Figure 12 shows the same data, using one pie chart for each column of the table.

Table 35: Occurrences of High or Low Semantic Transitivity in GD-similar Verbs

<table>
<thead>
<tr>
<th>Semantic Transitivity</th>
<th>G stem</th>
<th>D stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Semantic Transitivity</td>
<td>851 (27% of G)</td>
<td>864 (53% of D)</td>
</tr>
<tr>
<td>Medium or Uncertain Semantic Transitivity</td>
<td>531 (17% of G)</td>
<td>252 (16% of D)</td>
</tr>
<tr>
<td>Low Semantic Transitivity</td>
<td>1791 (56% of G)</td>
<td>507 (31% of D)</td>
</tr>
</tbody>
</table>

Figure 12: Occurrences of High or Low Semantic Transitivity in GD-similar Verbs

Table 35 and figure 12 show that although GD-similar verbs use both stems with both high semantic transitivity and low semantic transitivity, there is a clear tendency for the G stem to be used with low semantic transitivity and for the D stem to be used with high semantic transitivity. This tendency would still hold true even if all clauses with unclear or intermediate semantic transitivity had the ‘wrong’ value in each stem. Thus this tendency is robust when we
examine every occurrence in our sample of every verb where the author has a choice between the G and D stems to convey roughly the same meaning (i.e., the GD-similar verbs).\footnote{In fact, because table 35 and figure 12 exclude verbs that are stative in the G stem and factitive in the D stem (all of which are by definition marked for high transitivity in the D stem), the correlation of the D stem with high transitivity is far stronger if we include all verbs rather than only the GD-similar verbs.}

To better understand this distinction between the semantic transitivity of the G stem and that of the D stem for GD-similar verbs, note in table 35 that the G stem has almost as many high-transitivity occurrences as the D stem for GD-similar roots. The main difference is that the G stem has far more low-transitivity occurrences than the D stem for GD-similar roots. Furthermore, since there are significantly more G-stem occurrences than D-stem occurrences of GD-similar roots, this has the additional effect of making the G stem’s high-transitivity occurrences be proportionally rarer than the same number of occurrences are in the D stem.

These results, however, depend critically on how frequently certain verbs are used; a high frequency verb sways the results much more than a low-frequency verb. While there is a certain logic to that, one must take care that a small number of atypical, high-frequency verbs do not skew the results. Our sampling procedure (§3.2) helps immunize our results to this (since it limits the number of occurrences of high-frequency verbs), but it does make the final numbers somewhat arbitrary. For example, הָבֹא to speak’ occurs 1085 times in the D stem in our source, always with a low-transitivity meaning. We have sampled 90 of those occurrences, but had we sampled more, the difference between the D stem and the G stem in table 35 and figure 12 would
have been smaller or even reversed. Thus we must look at the transitivity on a root-by-root basis to better understand the situation.

6.4.2 Is the D-Stem of GD-Similar Verbs Marked for High Transitivity?

If the D stem of GD-similar verbs tends to be marked for high transitivity, and the G stem is unmarked, as Kouwenberg hypothesizes, then the fact (table 35) that almost a third of G-stem occurrences of GD-similar verbs have high semantic transitivity is not a problem. What could be problematic, however, is the fact that almost a third of D-stem occurrences of GD-similar verbs have low semantic transitivity.

To analyze this further, we look at the semantic transitivity of GD-similar verbs on a root-by-root basis. Using the same criteria for a marked stem as before (e.g., §6.3), we classify a stem as possibly marked for high semantic transitivity if at least one occurrence in that stem clearly has high semantic transitivity in that stem and no occurrences in that stem clearly have low semantic transitivity. With those criteria, out of 138 GD-similar roots, 28 roots are possibly marked for high semantic transitivity in the D stem but not in the G stem. Of those 28 roots, 7 occur at least 5 times in both stems, so we have some level of confidence that their meeting the criteria for marking is not merely happenstance due to their low attestation in our source. Conversely, there are 6 GD-similar verbal roots that are potentially marked for high transitivity in the G stem but not in the D stem, none of which occur at least five times in both stems.

If we raise the standards by requiring at least two clear instances of high transitivity in the D stem and two clear instances of low transitivity in the G stem, we drop from 28 roots to 13 roots, 6 of which occur at least five times in both stems: עזר, בינת, חלופ, נושא, שבר.
Applying the same standards in the other direction leaves us with 2 roots that may be marked for high transitivity in the G stem (כָּפֵר and יָסְר), none of which occur at least five times in both stems.

If we tighten the criteria still further, however, by requiring at least 5 clear low-transitivity occurrences in the G stem, 5 occurrences with high transitivity in the D stem, and 0 uncertain occurrences in the D stem, we would no longer have any verbal roots that are marked for high transitivity in the D stem. נָשֵׂא almost meets these criteria, but it has a few occurrences of uncertain or intermediate transitivity in the D stem. Applying the same standards in the other direction leads to no roots that are marked for high transitivity in the G stem.

Thus we conclude that despite the significant difference between the D and G stems in the relative frequency of high transitivity and low transitivity for GD-similar roots (table 35 in §6.4.1), few GD-similar roots have consistent evidence that they are marked for high transitivity in the D stem. The fact that almost a third of D-stem occurrences of GD-similar verbs have low transitivity may play a role, but how?

This situation suggests at least two possibilities. One possibility is that although authors of our texts had a tendency to use the D stem for high semantic transitivity, it was just a tendency, not a rule, so they were not completely consistent and they occasionally used the D stem for low-transitivity meanings, contrary to their overall tendency. Another possibility is that the authors were consistent with a rule that roughly correlates with Naess’ criteria for high semantic transitivity, but that differs from it in ways that lead to discrepancies about one third of
the time. Perhaps different criteria for high semantic transitivity are needed (§2.2), or perhaps there are confounding factors, such as verb conjugation, register, or dialect.

6.4.3 How Does Semantic Transitivity Correlate with Stem for Different Roots?

To supplement the all-or-nothing ‘marked or unmarked’ approach, we now use the same kind of analysis that we used for Waltke and O’Connor’s hypothesis in §4.4. To do this, the purple bars in the figure 13 histogram redisplay data from figure 12, adding the orange and blue pie slices of the D-stem pie together in the purple bars (since they indicate that high semantic transitivity is at least plausible, and hence compatible with being the stem being marked), and plotting each verbal root (e.g., יָֽסָר) as a separate item, adding it to the height of the bar that indicates the percentage of its occurrences for which a passive undersubject is plausible. Thus the higher the percentage (horizontal axis), the less often the root clearly has low semantic transitivity. The 99.9% bar is shown in order to distinguish verbal roots for which there is at least one occurrence that clearly has low semantic transitivity from roots for which there are no clear examples of low semantic transitivity (the 100% bar). The green bars in figure 13 show the same thing for the G stem.

132. The 0% bar in figure 13 counts the verbal roots for which the verbal root always occurs in low-transitivity clauses. Each other bar totals up the occurrences since the previous bar up to its labeled percentage. So the 10% bar counts the verbal roots for which there are some medium-transitivity, uncertain-transitivity, or high-transitivity occurrences, but no more than 10% of the time. The 99.9% bar counts the verbal roots for which more than 90% of the occurrences have medium or high transitivity, but not all of them. The 100% bar counts the verbal roots for which every occurrence has semantic transitivity that is high, medium, or uncertain.
Figure 13 shows that both the G stem and the D stem have a bimodal distribution: for most roots, either every occurrence has low semantic transitivity (the leftmost green and purple bars) or no occurrence is certain to have low semantic transitivity (the rightmost green and purple bars). Few roots have a mixture. On one hand, this is not surprising, since there are verbs like ישבר (šebra) ‘to break’ that we expect to have high semantic transitivity and verbs like דבר (dabër) ‘to speak’ that we expect to have low semantic transitivity. On the other hand, however, it is surprising, because even for a verb like ישבר (šebra) ‘to break’, if the verb is negated or describes the process of breaking in general rather than to breaking a particular object, then the clause has low semantic transitivity. Since we would expect common high-transitivity verbs to at least occasionally be negated or to lack a specific direct object (and therefore have low transitivity on occasion), the bars on the right side of figure 13 are surprisingly high. This shows that such low-transitivity features (i.e., negation and a general reference to the concept) are rarer in both the D stem and in the G stem than one might expect for some verbs.
One possible explanation for the unexpectedly large bars on the right is that if a verbal root occurs only once in a given stem, it ‘always’ or ‘never’ does anything it does. Therefore, in order eliminate this effect and to reduce the effect of happenstance among low-frequency verbs, figure 14 re-displays the data from figure 13, but only including the 33 GD-similar roots that occur at least 5 times in each stem with a GD-similar meaning.

![Diagram](image)

**Figure 14: Distribution of Semantic Transitivity among the 33 Non-Rare GD-Similar Roots**

Figure 14 still shows a bimodal distribution, but comparison with figure 13 shows that the bimodal distribution is far less pronounced. This makes sense: if a verb occurs only once in a stem, it is either 0% or 100% with respect to any property that it has, so eliminating those verbs from figure 14 is expected to reduce the size of the bars at the extreme left and right. Eliminating verbs that occur more than once but less than five times has a similar effect, although it also removed some of the mixed cases that show up in the middle of the figure.

The main difference between the D and G stems in figure 14 is in the size of the bars on the far right: the purple bar is 6 verbs taller than the green bar. This means that 6 verbal roots for
which a high-transitivity meaning is always at least possible in the D stem have at least one clear low-transitivity occurrence in the G stem. But these 6 roots seem hardly enough to explain the difference between the G and D stems that table 35 shows.

To see more clearly the distribution of semantic transitivity among the G and D stems of each GD-similar root, in place of figure 13, tables 36, 37, and 38 show the transitivity on a root-by-root basis, comparing the D and G stems of each individual GD-similar root in terms of how often they have high semantic transitivity, low transitivity, or a semantic transitivity that is either intermediate or uncertain.

### Table 36: High-Transitivity Distribution of the 138 GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>58</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Some G</td>
<td>6</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>All G</td>
<td>0</td>
<td>6</td>
<td>18</td>
</tr>
</tbody>
</table>

### Table 37: Medium/Uncertain-Transitivity Distribution of the 138 GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>76</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Some G</td>
<td>15</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>All G</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

### Table 38: Low-Transitivity Distribution of the 138 GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>38</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Some G</td>
<td>25</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>All G</td>
<td>8</td>
<td>2</td>
<td>43</td>
</tr>
</tbody>
</table>

To eliminate the effects of low-frequency verbs, tables 39, 40, and 41 are the same as tables 36, 37, and 38 except that they only count verbal roots that occur at least 5 times in both stems, just as was done in figure 14. These tables show that eliminating the low-frequency roots
tightens up the distributions towards the diagonal, so that the G and D stems are quite similar on a root-by-root basis in terms of their distribution of semantic transitivity. For example, the upper left cell of table 39 indicates that if a common GD-similar root never has high semantic transitivity in the D stem, then it never has it in the G stem either. Similarly, the lower-right cell of table 41 indicates that if a root always has low semantic transitivity in the D stem, then it always has it in the G stem also.

Table 39: High-Transitivity Distribution of the 33 Non-Rare GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>13</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Some G</td>
<td>0</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>All G</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 40: Medium/Uncertain-Transitivity Distribution of the 33 Non-Rare GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>16</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Some G</td>
<td>3</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>All G</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 41: Low-Transitivity Distribution of the 33 Non-Rare GD-Similar Roots

<table>
<thead>
<tr>
<th></th>
<th>Never D</th>
<th>Some D</th>
<th>All D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never G</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Some G</td>
<td>7</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>All G</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

Recall that at the beginning of this section, table 35 demonstrated that high semantic transitivity is significantly more likely for the D stem than for the G stem, and we asked the question of how that difference is distributed among roots. Tables 36 through 41 suggest that the difference between the D and G stems in table 35 is not mainly due to a large number of verbal roots that are predominately high transitivity in the D stem being predominantly low transitivity.
in the G stem. This fits with our earlier conclusion: very few GD-similar verbs are strictly marked for high transitivity in the D stem (§6.4.2).

6.4.4 Investigating the Low-Transitivity Occurrences

Recall from table 35 that the G and D stems of GD-similar verbs have approximately the same number of high-transitivity occurrences in the G and D stems. The main difference between the semantic transitivity of the G and D stems of these verbs is that they have far more low-transitivity occurrences in the G stem. Therefore, this section analyzes those occurrences.

Table 42 summarizes the low-transitivity occurrences. The first row shows that when we look at all GD-similar verbs, 22% of low-transitivity occurrences are in the D stem. This is unsurprising because low transitivity is less common in the D stem than in the G stem (see table 35). It is also unsurprising because GD-similar roots occur about twice as often in the G stem (3174 occurrences) as they do in the D stem (1633 occurrences). The question is how these low-transitivity occurrences are distributed across the GD-similar verbal roots. Do particular roots account for most of the difference, or is it a general tendency spread across all roots?

The second row of table 42 indicates that most GD-similar roots (82 out of 138) have 5 or fewer occurrences that are certain to be low transitivity (the rest are either high transitivity or else intermediate or uncertain). Since such roots contribute only 4% of all low-transitivity occurrences, the difference between the D and G stems seen in table 35 is driven by the minority of roots (56 roots; row 3) that have a large number of low-transitivity occurrences rather than by the majority of roots (82 roots; row 2) that have few. This is the first part of the answer to our question: a minority of roots are responsible for most of the difference in semantic transitivity.
The rightmost column of rows 8 through 12 of table 42 give the second part of the answer to our question. The difference in low-transitivity occurrences between the D and G stem occurs both in common verbs and in uncommon verbs, but not as often in the D stem for common verbs.

Table 42: The Distribution of Low Transitivity among GD-Similar Roots

<table>
<thead>
<tr>
<th>Which GD-Similar Roots?</th>
<th># Roots</th>
<th># Occurrences</th>
<th># LowT</th>
<th># LowT in G</th>
<th># LowT in D</th>
<th>%LowT that are D</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>138</td>
<td>4796 (100%)</td>
<td>2298</td>
<td>1791</td>
<td>507</td>
<td>22%</td>
</tr>
<tr>
<td>&lt; 5 LowT per root</td>
<td>82</td>
<td>1355 (28%)</td>
<td>100</td>
<td>70</td>
<td>30</td>
<td>30%</td>
</tr>
<tr>
<td>≥ 5 LowT per root</td>
<td>56</td>
<td>3441 (72%)</td>
<td>2198</td>
<td>1721</td>
<td>477</td>
<td>22%</td>
</tr>
<tr>
<td>≥ 10 LowT per root</td>
<td>41</td>
<td>2761 (58%)</td>
<td>2089</td>
<td>1664</td>
<td>425</td>
<td>20%</td>
</tr>
<tr>
<td>≥ 20 LowT per root</td>
<td>29</td>
<td>2561 (53%)</td>
<td>1929</td>
<td>1577</td>
<td>352</td>
<td>18%</td>
</tr>
<tr>
<td>≥ 50 LowT per root</td>
<td>11</td>
<td>1849 (39%)</td>
<td>1357</td>
<td>1175</td>
<td>182</td>
<td>13%</td>
</tr>
<tr>
<td>≥ 80 LowT per root</td>
<td>9</td>
<td>1309 (27%)</td>
<td>1217</td>
<td>1058</td>
<td>159</td>
<td>13%</td>
</tr>
<tr>
<td>≥ 5 Occurrences</td>
<td>111</td>
<td>4721 (98%)</td>
<td>2266</td>
<td>1769</td>
<td>497</td>
<td>22%</td>
</tr>
<tr>
<td>≥ 10 Occurrences</td>
<td>85</td>
<td>4533 (94%)</td>
<td>2196</td>
<td>1728</td>
<td>468</td>
<td>21%</td>
</tr>
<tr>
<td>≥ 20 Occurrences</td>
<td>60</td>
<td>4206 (88%)</td>
<td>2031</td>
<td>1639</td>
<td>392</td>
<td>19%</td>
</tr>
<tr>
<td>≥ 50 Occurrences</td>
<td>23</td>
<td>2948 (61%)</td>
<td>1516</td>
<td>1279</td>
<td>237</td>
<td>16%</td>
</tr>
<tr>
<td>≥ 100 Occurrences</td>
<td>14</td>
<td>2275 (47%)</td>
<td>1311</td>
<td>1126</td>
<td>185</td>
<td>14%</td>
</tr>
<tr>
<td>≥ 10 Occurrences and ≥ 50% LowT</td>
<td>39</td>
<td>2188 (46%)</td>
<td>1967</td>
<td>1587</td>
<td>380</td>
<td>19%</td>
</tr>
<tr>
<td>≥ 10 Occurrences and ≥ 75% LowT</td>
<td>32</td>
<td>1693 (35%)</td>
<td>1683</td>
<td>1315</td>
<td>368</td>
<td>22%</td>
</tr>
</tbody>
</table>

To investigate this further, table 43 examines the 29 verbs that have at least 20 low-transitivity occurrences, since the yellow row in table 42 shows that these verbs constitute 84% of all low-transitivity occurrences among GD-similar verbs.\(^{135}\) The verbs are ordered in terms of imbalance between the number of low-transitivity occurrences in the G stem vs. in the D stem.

---

133. (% of all 4796 occurrences with all GD-similar roots)
134. (% of all 2298 low-semantic-transitivity occurrences that occur with GD-similar roots)
135. The cutoff is set at 20 occurrences (not 5) in order to make percentages more meaningful.
Table 43: The GD-Similar Roots with the Most Low-Transitivity Occurrences

<table>
<thead>
<tr>
<th>Verb</th>
<th>#G</th>
<th>#D</th>
<th>#G LowT</th>
<th>#D LowT</th>
<th>#GLowT- #DLowT</th>
<th>%G LowT</th>
<th>%D LowT</th>
</tr>
</thead>
<tbody>
<tr>
<td>דבר</td>
<td>40</td>
<td>90+</td>
<td>40</td>
<td>90+</td>
<td>-50</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>חוכ</td>
<td>6</td>
<td>41</td>
<td>6</td>
<td>41</td>
<td>-35</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>נלכ</td>
<td>15</td>
<td>48</td>
<td>4</td>
<td>23</td>
<td>-19</td>
<td>27%</td>
<td>48%</td>
</tr>
<tr>
<td>ירג</td>
<td>19</td>
<td>28</td>
<td>19</td>
<td>28</td>
<td>-9</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>טאמ</td>
<td>8</td>
<td>15</td>
<td>8</td>
<td>15</td>
<td>-7</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>תמא</td>
<td>16</td>
<td>15</td>
<td>16</td>
<td>15</td>
<td>1</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>שחק</td>
<td>18</td>
<td>17</td>
<td>17</td>
<td>16</td>
<td>1</td>
<td>94%</td>
<td>94%</td>
</tr>
<tr>
<td>תפה</td>
<td>26</td>
<td>9</td>
<td>26</td>
<td>9</td>
<td>17</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ארב</td>
<td>20</td>
<td>2</td>
<td>20</td>
<td>2</td>
<td>18</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>בער</td>
<td>38</td>
<td>15</td>
<td>20</td>
<td>2</td>
<td>18</td>
<td>53%</td>
<td>13%</td>
</tr>
<tr>
<td>פרש</td>
<td>54</td>
<td>9</td>
<td>25</td>
<td>7</td>
<td>18</td>
<td>46%</td>
<td>78%</td>
</tr>
<tr>
<td>פודר</td>
<td>22</td>
<td>2</td>
<td>22</td>
<td>2</td>
<td>20</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>תקר</td>
<td>22</td>
<td>1</td>
<td>22</td>
<td>1</td>
<td>21</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>טקמ</td>
<td>26</td>
<td>5</td>
<td>26</td>
<td>5</td>
<td>21</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ספר</td>
<td>27</td>
<td>3</td>
<td>27</td>
<td>3</td>
<td>24</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>גחל</td>
<td>30</td>
<td>4</td>
<td>25</td>
<td>0</td>
<td>25</td>
<td>83%</td>
<td>0%</td>
</tr>
<tr>
<td>פקד</td>
<td>54</td>
<td>1</td>
<td>30</td>
<td>0</td>
<td>30</td>
<td>56%</td>
<td>0%</td>
</tr>
<tr>
<td>שלה</td>
<td>165+</td>
<td>267</td>
<td>53+</td>
<td>23</td>
<td>30</td>
<td>32%</td>
<td>9%</td>
</tr>
<tr>
<td>מרד</td>
<td>43</td>
<td>4</td>
<td>41</td>
<td>0</td>
<td>41</td>
<td>95%</td>
<td>0%</td>
</tr>
<tr>
<td>צעק</td>
<td>48</td>
<td>1</td>
<td>48</td>
<td>1</td>
<td>47</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>תשב</td>
<td>64</td>
<td>16</td>
<td>64</td>
<td>16</td>
<td>48</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>גנס</td>
<td>105</td>
<td>3</td>
<td>64</td>
<td>0</td>
<td>64</td>
<td>61%</td>
<td>0%</td>
</tr>
<tr>
<td>שנא</td>
<td>121</td>
<td>15</td>
<td>121</td>
<td>15</td>
<td>106</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>גבח</td>
<td>112</td>
<td>2</td>
<td>112</td>
<td>2</td>
<td>110</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>נשא</td>
<td>200+</td>
<td>12</td>
<td>120+</td>
<td>0</td>
<td>120</td>
<td>60%</td>
<td>0%</td>
</tr>
<tr>
<td>ההל</td>
<td>147+</td>
<td>25</td>
<td>147+</td>
<td>25</td>
<td>122</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>דוור</td>
<td>131</td>
<td>8</td>
<td>131</td>
<td>8</td>
<td>123</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ירח</td>
<td>160</td>
<td>1</td>
<td>160</td>
<td>1</td>
<td>159</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>שאלי</td>
<td>163</td>
<td>2</td>
<td>163</td>
<td>2</td>
<td>161</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

136. A '+' after a number indicates that the verb was sampled in that stem (§3.2), so the actual number of occurrences in our source is larger.
Table 43 shows the 29 GD-similar verbs that have the most low-transitivity occurrences. Five observations are in order.

First, looking at the list of verbal roots in table 43, it may be surprising that certain roots (e.g.,ropical ‘to send’ and לגל ‘to uncover’) ever have low transitivity. But recall from §2.2 that high semantic transitivity indicates that the subject affects the object, so whenever a verb is negated, there is no effect, and thus the transitivity is low. Thus, for example, לגל frequently has low transitivity because it is frequently negated (e.g., Leviticus 18:7a אֶלֶהוֹ פֹּלָאָמֶת אַרְגָּרָֽהּ׃ ‘you shall not uncover her nakedness’).

Second, most of these GD-similar verbal roots (24 out of 29) have far more low-transitivity occurrences in the G stem than in the D stem. This shows that the tendency in table 35 for G stem to have low transitivity is not skewed by a couple of very frequent verbs; instead, it is the general tendency of verbs with a significant number of low-transitivity occurrences. This supports Kouwenberg’s hypothesis that the D stem is generally associated with high transitivity.

Third, half of these verbs (14 out of 29) have a low-transitivity meaning always or almost always in both stems, but use the G stem far more often than the D stem. Since they do occasionally use the D stem in a low-transitivity clause, these verbs are not marked (strictly speaking) for high transitivity in the D stem or for low transitivity in the G stem. Instead, we say that these verbs are always or almost always low transitivity, and they prefer the G stem. Nonetheless, these verbs do support Kouwenberg’s hypothesis, since when authors use a verb that is almost always low transitivity and have a choice between the G stem and D stems, they use the G stem far more often.
An example of this type of verb is יזקא. It means ‘to ask’ in both the D and G stems. A clause with יזקא never itself indicates an effect on the object, so יזקא consistently lacks one of the core features of high semantic transitivity: an affected object (§2.2, especially §2.2.2–§2.2.5). Furthermore, since a request intrinsically involves the volition, יזקא requires that the object (the one asked) be volitional. יזקא therefore lacks a second feature of high transitivity according to Kittilä (§2.4) and Næss (§2.5): a non-volitional object. Thus יזקא is consistently low transitivity, regardless of whether it is in the G stem or the D stem, and regardless of whose definition of semantic transitivity we use. יזקא occurs 165 times in the G stem and 2 times in the D stem, so it is an example of a low-transitivity GD-similar verb that prefers the G stem. Semantic transitivity does not explain why a writer used the D stem twice for יזקא, but the low transitivity of יזקא does explain why it is rarely in the D stem.

The fourth observation is that there are five GD-similar verbal roots (נחל, פָּקֵד, מָדָד, נְשָא, נְשָא) that usually have a low-transitivity meaning in the G stem, but never have it in the D stem. Two of these ([… נְשָא) have D-stem occurrences with the GD-similar meaning that are clearly high transitivity and none that are low transitivity, so these two roots give some evidence of being marked for high transitivity in the D stem. The other three roots have no clear high-transitivity occurrences in the D stem, so they might be marked, but it is unclear.

The fifth observation is that there are 5 verbal roots (רָמְזָה, בּוֹרָה, וּרְזָה, פָּקֵד, נְשָא) that have more low-transitivity occurrences in the D stem than in the G stem. All of them use the D stem more frequently than the G stem. All except נְשָא consistently have a low-transitivity meaning in

137. To indicate an effect of יזקא, such as a request being granted, an additional clause would be required.
both stems; they just use the D stem more often. Thus, out of the 29 GD-similar verbal roots that have the most low-transitivity meanings, five roots do not fit Kouwenberg’s hypothesis.

Do these five roots sink Kouwenberg’s hypothesis? Unfortunately, the nature of Kouwenberg’s hypothesis makes it difficult to falsify: because of layering, verbs are expected to have a variety of relationships between the D and G stems, so not all verbs are expected to prefer the D stem for high-transitivity meanings. Furthermore, since one can always claim “lexicalization” (§2.6) for any particular verb, the only way to falsify his hypothesis is to find a set of verbs that follow a clear pattern that is not an option for his hypothesis.

Is there a pattern to these five verbs? Four of the five roots (נאץ is the exception) have cognate nouns (Landes 2001), so perhaps they favor the the D stem despite their low transitivity because they are denominal (§4.3.3). However, the same can be said of 15 out of the 22 verbal roots that clearly favor the G stem in low-transitivity contexts (the exceptions are רוד, תלמיד, שלח, בלשון, פרוש, ניבר). Therefore a possible denominal origin is an inadequate reason for why these verbs favor the D stem despite having low transitivity.

Is there another explanation for these verbs? Let’s look at them one-by-one.

Although the verb דבר-238 occurs in the G stem, 39 of its 40 G-stem occurrences are participles. Because of this restriction, a writer cannot freely choose between the D and G stems for דבר-2 for most uses, so it is a GD-similar verb only when it is functioning as a participle. Of the 78 uses of דבר-2 as a participle in our sample, exactly half of them are in the G stem and the other half are in the D stem, despite the fact that there are far more D-stem occurrences than G stem occurrences (1092 vs. 40) in our source. Thus the G stem is indeed preferred over the D
stem in some sense when it is an option (i.e., when it is a participle), but this does not explain why 2 קוה is normally in the D stem nor why the G stem is preferred for participles.

The same situation obtains with 1 קוה, but more so. All 6 of the G-stem occurrences are participles, and none of the 41 D-stem occurrences are participles. So it seems that writers were not able to freely choose between the G and D stems of 1 קוה. But, like 2 קוה, it is unclear why 1 קוה is normally in the D stem nor why the G stem is restricted to participles. These two verbs require further investigation.

וילה has a variety of meanings in the D and G stems that do not overlap, so not all occurrences have been tagged as GD-similar. There are 15 occurrences in the G stem and 48 in the D stem that are GD-similar because they both refer to uncovering or revealing something, although there are distinctions: One uncovers someone’s ear only in the G stem (i.e., tells them something), whereas one opens someone’s eyes only in the D stem, and all occurrences with sexual connotations (including 29 occurrences of the stock phrase ‘to uncover someone’s nakedness’) occur only in the D stem.

138. Jenni says that one opens the ears in the G stem because the reference is to the process and not to the resulting state of the ear. That fits his hypothesis and seems reasonable. Unfortunately, the same explanation would seem to apply to the references to opening the eyes, which is consistently in the D stem. He asserts that opening the eyes is resultative, but he does not explain the basis of that assertion or how it differs from opening the ears (Jenni 1968, 202).

139. For a reference to revealing something with וי, authors seem to be able to freely choose between the G stem (3 times) and the D stem (11 times). It is unclear why the D stem is preferred, and we did not find a consistent distinction between the G and D stems when we examined every occurrence of וי (§4.4.3). Jenni says that the G-stem occurrences of וי describe the process, whereas the D-stem occurrences of וי indicate the result (1968, 202–3, see also footnote 138 on page 239). In some cases Jenni’s exegesis seems plausible, but in others, it seems forced. For example, he explains that Proverbs 20:19 is in the G stem because it characterizes the subject, and therefore focuses on the process not the result. That seems
Although it is unclear why an ear is uncovered in the G stem (singular object?) and eyes are uncovered in the D stem (plural object?), Kouwenberg’s hypothesis explains why uncovering someone’s nakedness occurs in the D stem: it is a euphemism for a volitional subject instigating an effect on the object, which makes it a high-transitivity action. Since it is a stock phrase (29 occurrences) that uses the D stem, the D stem is retained when it is negated (and therefore low transitivity), which explains 22 out of 23 instances of the D stem of רנן having low transitivity.

רנן ‘to shout/sing/cheer (usually for joy)’ seems to occur interchangeably in the G and D stems, with no significant distinction in the verb forms, contexts, or meaning.\textsuperscript{140} It is always low transitivity, but it is unclear why the D stem is used somewhat more often (28 times) than the G stem (19 times).

reasonable, but then he explains the very similar passage Proverbs 11:13 as using the D stem because it focuses on what happens to the object. The difficulty with this is that the second half of the verse seems to indicate that the focus is on the kind of person who does something, and therefore on the process, not the result: זהה עכרי Моֹמֶּשֶׁה פִּידעָה הָּכַּדַּר רַּעְּבָּנָה. ‘one who goes about as a tale-bearer reveals a secret, but one who is faithful in spirit conceals a matter’. So his exegesis of Proverbs 11:13 seems to be driven by his hypothesis rather than by the text. Nevertheless, if Jenni’s exegesis of selected occurrences is actually correct and representative (despite my doubts), then רנן would actually support Kouwenberg’s hypothesis. The reason for this is that a resultative meaning is higher transitivity than a process meaning (all else being equal), since a process meaning does not guarantee an effect on the object, whereas a resultative meaning does.

\textsuperscript{140} Jenni says that the G stem of רנן refers to a single cheer, whereas the D stem refers to a series, although he admits that it is difficult in most contexts to detect the distinction between a single cheer and a series of cheers. Note that what Jenni is claiming is that רנן indicates verbal plurality in the D stem. We did not find a consistent distinction in verbal plurality when we examined every occurrence of רנן (§4.4.3), but if Jenni’s exegesis of selected occurrences is correct (rather than our exegesis) and representative of the verb as a whole, then רנן also supports Kouwenberg’s hypothesis, since his hypothesis leads us to expect the D stem to favor higher verbal plurality (§6.3) for some verbs and higher transitivity for others.

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The final GD-similar verb that favors the D stem for low-transitivity meanings is יֵנהַז ‘to spurn or despise someone’. It consistently has low transitivity, since in and of itself it does not indicate any effect on the object. It occurs more often in the D stem (15 times) than the G stem (8 times). The D stem tends to have a divine object and the G stem tends to have a human object, but the tendency has exceptions, and it is unclear how to fit this into Kouwenberg’s theory. Nonetheless, unless one finds a pattern of verbs that prefer the D stem for divine objects, this tendency can be discounted as a quirk of a particular word.

Thus these five verbs that have more low-transitivity occurrences in the D stem than in the G stem show no consistent pattern. One of them (כָּלַב) can be explained as a high-transitivity stock phrase being frequently negated (and therefore low-transitivity). Two of them (רָבָר- and לְזָהֵב) are always low transitivity but have G stems that are restricted to participles. Another (רֱי) is always low transitivity and seems to use the G and D stems interchangeably. The last one (נק) tends to use the D stem with a divine object and the G stem with a human object. The two

141. Jenni attempts to explain this pattern of ד, but his explanation fits neither his hypothesis nor Kouwenberg’s (1968, 190–1). He states that out of the eight occurrences of ד in the G stem, the object that is spurned is something divine only once (Psalm 107:11 יִכְבֹּד יִשְׁרִית יִצָּה ‘the council of the Most High’), whereas for all 15 occurrences of the D stem, the object is divine. The latter is not strictly true, since the object is YHWH’s offering in 1 Samuel 2:17, his word in Isaiah 5:24, and Jerusalem as a symbol for the nation of Israel in Isaiah 60:14. Regardless of such quibbles, Jenni states that the D stem is used with a divine object because it is a declarative meaning (i.e., to declare something to be despicable). This seems reasonable and fits his hypothesis. The difficulty, however, comes when he says that the G stem is not used with a divine object because to do so would mean that the action affects God, whereas the D stem avoids that implication (‘Das G mit Objekt Jahwe würde ein effektives Betroffen-Sein Jahwes aussagen, während das D diese Vorstellung vermeidet’). The reason that this is problematic is that Jenni’s (and therefore Waltke and O’Connor’s) hypothesis is that the D stem focuses on the result, as opposed to the G stem that focuses on the process, so his hypothesis is incompatible with the idea that the D stem is used in order to avoid implying an effect on the object!

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patterns of difference between the D and G stems are worth investigating further, to see if there are other verbs that follow those patterns. That investigation is reserved for future work (§7.5).

In summary, when an author has a choice between the D and G stems (i.e., GD-similar verbs), there is a significant tendency to use the G stem in low-transitivity contexts and the D stem for high transitivity. Furthermore, even though few GD-similar verbal roots meet strict criteria for being marked for high transitivity in the D stem, most GD-similar roots that are consistently low in transitivity in both stems occur far more often in the G stem than in the D stem, and GD-similar roots that are mixed in transitivity tend to use the G stem when the transitivity is low and the D stem when the transitivity is high. Finally, verbs that are stative in the G stem and factitive in the D stem are (by definition) marked for high semantic transitivity in the D stem. Kouwenberg’s hypothesis explains all three of these observations as part of a general association of the D stem with high transitivity.

6.5 Summary and Conclusion

Because Kouwenberg’s hypothesis predicts that the D stem has a wide variety of meanings, it can account for a wide variety of data, but at the same time, it is difficult to falsify. Nonetheless, his hypothesis leads to three predictions that are testable with our source.

The first prediction is that compared to the G stem, the D stem will add an agent only to verbal roots that have a low-semantic-transitivity meaning in the G stem. We found this to be the case, with no exceptions. This result thus strongly supports Kouwenberg’s hypothesis. It is also significant because it connects the factitive use of the D stem with some non-factitive causative uses through semantic transitivity.
Furthermore, our data reveals three verbal roots (אשׁר-צחק, ילד, וּשָׁמַר) that violate Waltke and O’Connor’s hypothesis because they add an agent who causes a subagent to perform an action rather than causing a subagent to enter a state. This is the exclusive function of the H stem, not the D stem, according to Waltke and O’Connor (1990, 356–8, 401), so these three roots violate their hypothesis. It is an advantage of Kouwenberg’s hypothesis that it can explain these three roots whereas Waltke and O’Connor’s cannot.

The second prediction is that when an author has a choice between the D and G stems because they have roughly the same meaning (i.e., the GD-similar verbs), authors will prefer the D stem in contexts that have verbal plurality, at least for some verbs. We found in our source that although the D stem is barely higher in verbal plurality than the G stem overall for GD-similar verbs when one counts occurrences, we found that out of the 33 GD-similar roots that occur at least 5 times in both the G and D stems, 9 of them (27%) give significant evidence for being marked for verbal plurality, including 5 (15%) for which the evidence is very strong and completely unambiguous. We found no roots with significant evidence of a reverse marking. Our verbal plurality data thus supports Kouwenberg’s hypothesis, although the level of support is quite modest, since there are only 33 verbs that are suitable for testing.  

The third prediction is that when an author has a choice between the D and G stems, authors will prefer the D stem in contexts that have high semantic transitivity, at least for some verbs. Our data shows that for GD-similar verbs, the D and G stems are both used for low

142. Additional support for the connection between the D stem and verbal plurality comes from the fact that a plural object increases the likelihood that the D stem will be used (§5.6) and that 3 verbal roots are clearly marked for a frequentative meaning in the D stem (§5.7)
transitivity and high transitivity. Nevertheless, there is a significant tendency for the D stem to be used in high-transitivity contexts and for the G stem to be used in low-transitivity contexts. This is true when one counts occurrences. It is also true when one examines individual verbal roots: there are a significant number of GD-similar roots that strongly favor the G stem in low-transitivity contexts and the D stem in high-transitivity contexts, and very few with the reverse tendency. Furthermore, almost all GD-similar roots that have low-transitivity in both stems occur far more commonly in the G stem than in the D stem. This association of the D stem with high transitivity is significant because it connects the well known factitive use of the D stem with non-factitive uses.

Thus, although Kouwenberg’s hypothesis is difficult to find evidence for or against because it leads us to expect different verbal roots to have different uses, our data provides several lines of support for his hypothesis, and little evidence against it.
Chapter 7. Summary and Conclusions

7.1 The Problem

Scholars have long been troubled by the fact that the D stem (piel) of biblical Hebrew appears to have a wide variety of meanings and a wide variety of relationships with the G stem (qal). Particularly troubling is the fact that shifting from the G stem to the D stem increases the valency of some verbs (e.g., קדשׁ G ‘to be holy’, D ‘to make holy’), whereas for other verbs, the D stem not only has the same valency as the G stem, it actually seems to be interchangeable with it (e.g., 1 שבר can be glossed ‘to break’ in both the D and G stems). Various scholars have claimed that the same problems occur in the corresponding stems of all other Semitic languages, from the earliest extant dialects to modern living languages (§1.1).

Traditionally, this wide variety of meanings of the D stem has been explained as intensive action in various forms. Unfortunately, the term ‘intensive’ has been broadly defined and poorly documented (e.g., By what definition and on what basis do we know that 1 שבר is more intensive in the D stem than in the G stem?). Furthermore, there has been little theoretical explanation of how the valency-increasing meanings (e.g., ‘to make holy’) are a type of intensive (§1.2.1). Spurred by these shortcomings, scholars have developed a variety of alternate explanations for the D stem (§1.2), but consensus has not been reached.

7.2 Waltke and O’Connor’s Solution

The dominant approach today is perhaps the factitive/resultative hypothesis that was initiated by Goetze (1942) and then adapted to Hebrew by Jenni (1967, 1968) and developed further by Waltke and O’Connor (1990). Waltke and O’Connor posit that the D stem indicates
that a subject causes a passive undersubject to enter a state, without regard to the process. So if the G stem describes a state (a *stative verb*, e.g., ‘to be great’), then the D stem is *factive* (e.g., ‘to make great’), meaning that it describes a subject putting an undersubject in that state without regard to the process by which that happens. Whereas if the G stem describes a process (a *fientive verb*, e.g., ‘to break’), then the D stem is *resultative* (e.g., ‘to make broken’), meaning that it describes a subject putting an undersubject in the state that is the result of the G-stem process. *Factive* and *resultative* D-stem meanings are identical; their different labels indicate different G-stem meanings, not different D-stem meanings. This is what unifies the D stem in Waltke and O’Connor’s system; this is their core hypothesis (§1.2.2 and §4.1).

To verify this hypothesis, in chapter 4 we examined established criteria for detecting their hypothesized distinction between a process meaning (e.g., ‘to break’) and a resultative meaning (e.g., ‘to make broken’). Then we examined every occurrence of every verb that occurs in the D stem, along with every occurrence of the corresponding G stem, looking for that distinction. We found that most occurrences provide no evidence that allows us to detect if a verb has a process meaning or a factitive/resultative meaning. When we did find evidence that allowed us to decide that one meaning is more likely than the other, we found that far more occurrences of the D stem have a process meaning than have a factitive/resultative meaning. To improve the fit to the data, we tried eliminating rare verbs, modifying their definition to relax the requirement that the undersubject is passive, and grouping verbs based on whether their G stem is agentive, patientive, or not extant, but none of these attempts made the data fit the theory. The D stem does have a factitive/resultative meaning more often than the G stem does, but much of that difference is due to patientive verbs, which tend to have a stative meaning in the G stem and a factitive
meaning in the D stem, so it is little surprise that the G and D stems of such verbs differ. Furthermore, this difference between the stems does not validate their hypothesis in the face of the fact that D-stem verbs have a process meaning far more often than they have a factitive/resultative meaning, using Waltke and O’Connor’s definitions.

When we looked on a root-by-root basis, we found that only about 5% of verbal roots have unmixed evidence in favor of their hypothesis, whereas half of all verbs have unmixed evidence against it. Even among the verbal roots that Waltke and O’Connor use as their examples, when we examine every occurrence, we find at least as many occurrences that are incompatible with their hypothesis as examples that support it.

In addition to the lack of fit with the data, we argued (§2.1.2) that Waltke and O’Connor’s hypothesis is also problematic on a theoretical basis because their system requires all verbs to have a direct object in the D stem, which not all have (e.g., חל, כותב, נואם, רוא, רחאם). Waltke and O’Connor reject Jenni’s “imaginary direct object” approach to such verbs (e.g., ‘to walk’ means ‘to take a walk’), and suggest that such verbs are frequentative, but they do not address the fact that even if they are frequentative, they do not fit their system because they lack a direct object, and hence have no possible undersubject.

Along with their hypothesis that the D stem has a factitive/resultative meaning, Waltke and O’Connor state that the D stem is less likely than the G stem to be negated. They also claim that for some verbs, the D stem is distinguished from the G stem by being metaphorical, describing indirect action, having a divine subject, describing action on multiple objects, or describing frequentative action.
Contrary to Waltke and O’Connor, chapter 5 documents that we found no significant difference between the G and D stems with respect to a metaphorical meaning, indirect action, or a divine subject. We did find that having multiple objects or frequentative action or being negated makes the D stem more likely to be used than otherwise, although the differences are modest and the G stem is used more commonly for all three meanings. We noted that Waltke and O’Connor’s hypothesis is unable to explain the preference of the D stem for multiple objects or frequentative action. Since frequentative action and action on multiple objects are factors in verbal plurality (§2.4), this problem is a natural segue to Kouwenberg’s theory of the D stem, which posits a connection between the D stem and verbal plurality.

7.3 Kouwenberg’s Solution

In contrast with Waltke and O’Connor’s claim that the D stem has a single, unifying meaning that forms part of a system of verbal stems, each with a meaning that forms consistent oppositions with the other stems, Kouwenberg (1997, 2010) argues that the D stem has already undergone a process of grammaticalization by the earliest recorded stages of Akkadian, with different verbs having meanings from different stages along that grammaticalization path. He argues that the Semitic D stem began in Proto-Semitic with D-stem verbs derived from adjectives that indicated intensity (e.g., adjective ‘very wide’ → D ‘to be/become/make very wide’). Because intensity is an element of verbal plurality and high semantic transitivity, the D stem became preferred for various types of verbal plurality (e.g. ‘to kiss many people’) for some verbs and preferred for various types of high semantic transitivity (e.g., ‘to make wide’) for other verbs. So the D stem is expected to have a variety of meanings for different verbs: some should
favor verbal plurality, others should favor high transitivity, and others should be lexicalized or synonymous with the G stem (§1.2.6 and §6.1).

By explaining how high semantic transitivity and verbal plurality are generalizations of intensity, Kouwenberg’s theory explains the connection between factitive and non-factitive D-stem meanings. The existence of a cross-linguistic connection between verbal plurality and the distinctive morphology of the Semitic D-stem strengthens this hypothesis (§1.2.4), as does the existence of a cross-linguistic grammaticalization path from intensity to causation (§2.5.3).

Because Kouwenberg’s hypothesis predicts that the D stem has a wide variety of meanings, it can account for a wide variety of data. The sensitivity of semantic transitivity to intensity and negation explains the connection between factitive verbs and non-factitive verbs as well as the fact that the D stem is slightly less likely than the G stem to be negated. The fact that intensity is a component of verbal plurality explains the preferential use of the D stem with multiple objects (§5.6) and frequentative action (§5.7).

Unfortunately, this flexibility of Kouwenberg’s hypothesis makes it difficult to falsify. Nonetheless, his hypothesis reasonably leads to three predictions that are testable with our source. First, we discovered, as he predicted, that the D stem only adds an agent to a verbal root that has a low-semantic-transitivity meaning in the G stem. Because of the number of such roots, the complete lack of exceptions, and the fact that it connects the factitive use of the D stem with some non-factitive causative uses through semantic transitivity (thereby partially solving the problem described in §1.1 and §7.1), this result strongly supports Kouwenberg’s hypothesis. Second, we found that, as Kouwenberg predicted, there are several roots that give strong,
unambiguous evidence for being marked for verbal plurality in the D stem, whereas we found no roots with significant evidence of being so marked in the G stem. Third, we found that, as Kouwenberg predicted, there is a significant tendency for the D stem to be used in high-transitivity contexts and for the G stem to be used in low-transitivity contexts.

Thus, although Kouwenberg’s hypothesis is difficult to test because it leads us to expect different verbal roots to have different uses, our data provides three lines of support for his hypothesis, and little evidence against it.

7.4 Conclusion: Comparing the Two Solutions

Comparing the two solutions, Waltke and O’Connor’s hypothesis is elegant because it introduces a concept (the undersubject) that leads to a subtle distinction (process vs. result; see table 17 on page 80). This provides a new way of looking at verbs that answers both aspects of the problem that we discussed in §1.1: It unites the meaning of D stem verbs that increase the valency (factive) with the meaning of those that do not (resultive), explaining how both types of meaning are different manifestations of the same thing: causing an undersubject to enter a state. It also systematically explains the entire set of Hebrew stems by providing a label for the middle column (and relabeling the other columns) of table 1 as table 44 shows.

<table>
<thead>
<tr>
<th>Undersubject</th>
<th>No Undersubject</th>
<th>Passive Undersubject</th>
<th>Active Undersubject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning</td>
<td>Stative or Process</td>
<td>Factive / Resultative</td>
<td>Causative</td>
</tr>
<tr>
<td>Active Subject</td>
<td>qal (G)</td>
<td>piʿʿel (D)</td>
<td>hifʿʿel (H)</td>
</tr>
<tr>
<td>Passive Subject</td>
<td>nifʿʿal (N)</td>
<td>puʿʿal (Dp)</td>
<td>hofʿʿal (Hp)</td>
</tr>
<tr>
<td>Middle/Reflexive Subject</td>
<td>nifʿʿal (N)</td>
<td>hithpaʿʿel (tD)</td>
<td>-None-</td>
</tr>
</tbody>
</table>
Kouwenberg’s hypothesis, by contrast, is messy. It leads to an alternate version of table 1, shown as table 45, but the column labels indicate that it covers only certain types of verbs. For example, it excludes the D stem of verbs that are agentive in the G stem or that do not add an agent in the D stem. Kouwenberg says that the D stem of such verbs may be marked for verbal plurality, or be synonymous with the G stem, or have developed a specialized meaning that cannot be predicted in advance. His theory is thus less desirable, since one cannot predict the meaning of the D stem of such verbs. This enables his theory to explain a wide variety of data, but only at the expense of reducing its predictive power and making it resistant to being tested.

### Table 45: The Main Stems of Biblical Hebrew with Kouwenberg’s Column Labels

<table>
<thead>
<tr>
<th>Voice Type</th>
<th>Simple</th>
<th>Add an Agent to a Patientive Verb</th>
<th>Add an Agent to an Agentive Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active voice</td>
<td>qal (G)</td>
<td>pi &quot;el (D)</td>
<td>hif’il (H)</td>
</tr>
<tr>
<td>Passive voice</td>
<td>nif’al (N)</td>
<td>pu’al (Dp)</td>
<td>hof’al (Hp)</td>
</tr>
<tr>
<td>Middle/Reflexive</td>
<td>nif’al (N)</td>
<td>hithpa’el (tD)</td>
<td>-None-</td>
</tr>
</tbody>
</table>

Unfortunately, the elegant simplicity and comprehensiveness of Waltke and O’Connor’s solution is deceptive, since their hypothesis cannot – even in theory – account for verbs that are intransitive in the D stem (§2.1.2). Furthermore, the verbs that Kouwenberg’s table 45 excludes are verbs that have a particularly poor fit to Waltke and O’Connor’s hypothesis (§4.4.3). So in fact, Waltke and O’Connor’s solution is no more elegantly comprehensive than Kouwenberg’s solution when we actually look at the data.

Looking at the data, we see that both theories are able to explain the factitive use of the D stem for verbs that are stative in the G stem. But only Kouwenberg’s theory is able to explain the preferential use of the D stem for GD-similar verbs with a high-transitivity meaning as well as the tendency of the D stem to have features of verbal plurality, such as a plural direct object, a
frequentative meaning, or a reference to professional activity. Furthermore, Kouwenberg’s theory uniquely explains which verbs add an agent in the D stem, including three verbal roots (אשׁר-1, צחק, ילד) that violate Waltke and O’Connor’s hypothesis because they add an agent who causes a subagent to perform an action.

Beyond the verbal data, only Kouwenberg’s theory explains the connection between the distinctive morphology of the D stem (the doubling of the second radical) and its meaning. Waltke and O’Connor argue that the morphology has no connection to the meaning (1990, 397). Kouwenberg’s theory, however, explains that the D stem has a doubled root consonant because it arose from adjectives that are doubled, and such adjectives are associated with durative or habitual actions or conditions as well as nouns of occupation (Lambdin and Huehnergard 2000, 42–3). This fits the association between doubling of the second root consonant and verbal plurality throughout Semitic as well as the types of morphology that are used for verbal plurality in non-Semitic languages (Kouwenberg 1997, 24–6, 34–5, 38–45; Greenberg 1991).

This theoretical and textual support for Kouwenberg’s hypothesis is significant in two main ways. First, it indicates that the Hebrew verbal system is not a system of tight oppositions between stems. The quest for a label for the middle column of table 1 is doomed to failure because different verbal roots have different relationships between the stems. For some verbal roots, the D stem is preferred in high-transitivity contexts. For other roots, it is preferred in contexts of verbal plurality. And for others, the stems are synonymous or the meanings have been lexicalized. Second, it indicates that when the D and G stems for a verb seem to have roughly the same meaning, the distinction is not ‘to do’ vs. ‘to cause the result of doing’ (thus Waltke and
O’Connor). Instead, we should look for (but not insist upon) the D stem being used in the context of verbal plurality or high semantic transitivity.

7.5 Future Work

Our work thus far indicates that Kouwenberg’s hypothesis is able to explain several aspects of the Hebrew D stem: why the D stem adds an agent for some verbs but not for others, and under what conditions (verbal plurality or high semantic transitivity) the D stem is more likely to be used than it would otherwise.

Nevertheless, the correlation with high semantic transitivity and verbal plurality is less than one would hope. Therefore, it would be useful to collect separate data on all possible components of semantic transitivity and verbal plurality and then check which components correlate best with the D stem for all verbs and with the distinction between the G and D stems for GD-similar verbs. In addition, since we saw (§6.4.4) two verbs with a pattern of using the G stem for participles and another that prefers the D stem for a divine object, we should see if there are other verbs that follow those patterns.

This data collection could be part of a project that re-examines every occurrence of every verbal root that occurs in the D stem, time categorizing its meanings, including how it differs from the G stem and the H stem, and analyzing it in terms of Kouwenberg’s categories (e.g., verbal plurality, semantic transitivity, synonymous with G, or lexicalized) as well as in terms of any other categories that arise from the data. This would enable us to update the meaning-category list for the D stem (§1.1) based on all occurrences of every D-stem verb. It would also enable us to check if the types of verbs that do not exhibit increased verbal plurality or semantic
transitivity fall into patterns, with the result that we could refine, modify, or reject Kouwenberg’s hypothesis. Finally, it would provide the community with a replacement for Jenni’s work, which, although it is flawed because it is based on a distinction between process verbs and resultative verbs that the textual evidence does not support as well as a questionable approach to intransitive verbs (§2.1.2), is nonetheless widely used (e.g., Koehler et al. 2000, passim) because it offers an explanation for the difference between the G and D stems for GD-similar verbs.

An additional piece of data that would be useful to collect would be to categorize each occurrence in the D and H stems in terms of Dixon’s typology of causatives (Dixon 2000), to see if any of his categories correlate with the distinction between those stems.

Finally, it would be useful to expand our database by collecting the same data and performing the same analysis on other sources of pointed Hebrew, such as the Samaritan Pentateuch, non-masoretic texts of the Hebrew Bible, and the Mishnah, as well as data on stems that are related to the D stem, such as the polel, poel, and pilpel, along with the pual.
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