

## The Atomic-Axiomatic Structure of Language

### *Hebrew etymology*

The etymology of the Indo-European languages is a painstaking effort to sort through the havoc wreaked upon the originally perfect language by its diverse and dispersed speakers. One of its aims is the recovery of the root system of the primitive Indo-European language, lost in these upheavals. It is also greatly preoccupied with tracing the distortions suffered by words apparently common to the various members of this family of languages as they gradually drifted apart from the mother tongue.

The etymology of the Semitic languages, which are fully developed yet have retained their primeval root system in pristine form, is of a different nature; theirs is an entirely internal affair. There is very little that Hebrew can gain from the etymological consideration of the few other surviving members of its family of tongues. Hebrew and its living relatives—Arabic and Aramaic—are formally similar, have identical roots of assorted shades of meaning, and are barely etymologically distinguishable from one another.

The intent and resolve of Hebrew etymology is to reveal the inner sense and logic of the language and to expose the linguistic devices and mechanisms by which its root system refers to the basic acts and states of the physical world as we see and interact with it, by prying into the internal conceptual composition of these roots.

Each root of the Hebrew language is composed of vocal or literal markers that refer to the most elementary experiences of our material existence. These few markers stand for the fundamental concepts—the elementary linguistic conceptual particles—that combine to give language the power to describe the reality of space, substance, and diversity.

In its entirety, this root system accounts for the full range of the human experience. It stands to reason that this root system is implicit in all languages, making them equivalent and therefore translatable.

### *Fundamental concepts*

The whole edifice of the Hebrew language, its Semitic relatives, and possibly also the tongues of the West, is composed of seven phonemes representing the seven fundamental, or primitive, concepts of language. These immutable fundamental concepts are the building blocks of meaning, and each root of the language is compiled of at least one such concept. In writing, the fundamental concepts are accurately, and invariably, fixed by certain letters.

Concept	Representing Letters
עב-עף-בא <i>av-af-ba</i>	ב, ו, פ, ף <i>b, v, w, f, p</i>
עג-גע-הך <i>ag-ga</i>	ג, ה, ת, כ, ך, ק <i>c, g, k, q</i>
עד-עז-זע <i>ad-as-at-az-za</i>	ד, ה, ט, י, ס, צ, ץ, ש, ת <i>c, d, i, j, s, t, z</i>
על-לע <i>al-la</i>	ל <i>l</i>
עם <i>am-ma</i>	ם, מ <i>m</i>
נע <i>na</i>	נ, ן <i>n</i>
ער-רע <i>ar-ra</i>	ר <i>r</i>

The letters  $\aleph$  and  $\beth$  have lost their conceptual function and are left to serve purely vocal and visual roles. It is possible that  $\beth$  is a muted  $\aleph$ , to which it bears a close likeness.

The fundamental concept *av-af-ba*, עב-עף-בא, is a constituent element of the English words *up, be, we, eve, ewe, of, off, if, ebb, have, heave, and heap*; the conceptual common denominator of which is 'to be on top of,' 'to be upon (up-on).' The fundamental concept *ag-ga*, עג-גע, is the sole constituent element of the English words *go, gig, huge, age, oak, ache, ague, cake, each, cue, and co-*; the conceptual common denominator of which is 'to be large,' 'to be great,' 'to be significant.' The fundamental concept *ad-az-za*, עד-עז-זע, is the sole constituent element of the English words *as, is, the, thee, so, us, odd, add, ode, do, at, it, to, use, sit, eat, toe, tow, two, oat, oath, ooze, and adz*; the conceptual common denominator of which is 'to be extended,' 'to have a significant size.' The fundamental concept *al-la*, על-לע, is a constituent element of the English words *all, ale, ell, ill, and tall*; the conceptual common denominator of which is 'to be lofty.' The fundamental concept *am-ma*, עם, is a constituent element of the English words *am, me, come, sum, and among*; the conceptual common denominator of which is 'to possess an accumulated mass' or 'to be of essence.' The fundamental concept *na*, נע, is the sole constituent element of the English words *an, in, on, one, no, and new*, the conceptual common denominator of which is 'to be on.' The fundamental concept *ar-ra*, ער-רע, is a constituent element of the English words *air, are, err, era, ire, or, ore, re-, tear, rend, and rip*; the conceptual common denominator of which is 'to be rare.'

The fundamental concept *av-af-ba*, עב-עף-בא, of heaving and being, is represented by the Hebrew letters פ, ב, ו, which correspond to the English letters *b, v, w, f, and p*. Whenever one of these consonants is written or sounded in the lingual root, it signifies that the root contains this concept as one of its primary components. The fundamental concept עב-עף-בא has been vocally and literally augmented in Hebrew to form the words:—

עָבָה, עָוָה (עָבָה), העיב, בעה, פעה, פעפע, אפה (עָבָה הכצק ללחם), בועה, איבה (העבה של איום), אָהָה (עבוי הרצון), יופי (הופעת האברים ועיבויים), אב, בן, בת, בועה, פועה, אבעבועה, אָב, אביב (זמן בא והתעבות התבואה), ביב, אוב (מין כלי עָבָה), עוף, אף, פה, פאה, עפעף, בבה (בועת העין), בבואה, וו, אופי (עובי של תכונות).

From this fundamental concept we also have the name of the beautiful (יפה) city יָפוֹ, heaved (הוּנָה) above the sea, and, combined with the fundamental concept נע, the names of the noble (נפיל, נבל) mountains נוב and גבו.

The fundamental concept *ga-ag*, גע-עג, of gaining and aging, is represented by the Hebrew letters ק, ג, ה, ח, כ, ד, corresponding to the English letters *c, g, h, k, and q*. Whenever one of these consonants is written or sounded in the lingual root, this signifies that the root contains this concept as one of its primary components. The fundamental concept גע-עג has been vocally and literally augmented to form the words:—

גאה, קאה, געה, געגע, קעקע, אָהָה, הכה, הגה (הכה בלשונו והקיא דברים או הזקיע דברים בדעתו), פי (עוגת בשך מכאיבה), קיק (שיח ענק-ענק), אח, אָה, אחו, קוע, פֹּה, פִּית, חוג (אחוי גואה), גיחה, גג, כער, חכה, אגג, עָגָה, עָקָה, מעקה, תעוקה, עכו (העיר הגואה על עוגת או חוג אדמתה), גָּיָא, גָּחַר, כאה, חקר, חקק, חח, חוּח, חָדַד, חִיק, כהה, קהה, וגם גהה (גאה וגח כוחו בחוג חיקו).

The fundamental concept *az-za*, עז-זע, of exiting and existing, is represented by the Hebrew letters ז, ט, י, ס, צ, ק, ש, ת, corresponding to the English letters *c, d, j, s, t, and z*. Whenever one of these consonants is written or sounded in the lingual root, this signifies that the root contains this concept as one of its primary components. From this fundamental concept we have the Hebrew names of the animals:—

איה, דאה, דיה, דישון, יתוש, עז, עיט, סוס, סיס, איש, עש, עיש, עתוד, צי, צאן, שָה, תאז, אתון (הבהמה האדונית האיתנה), תיש.

In the Greek word ζῆα, as in zoology, the letter ζ (corresponding to the Hebrew letter ז) appears to signify this same concept.

The fundamental concept עז-זע in תיש, goat, is not an indication of the swiftness and fleetness (דיצה) of the animal, nor its vigor, verve and liveliness (תושיה), but rather the size and extent of its body, as in the certainly immovable, מזוזה (מזוזה, מְשוּשָה), door post. This is also the indication of עז-זע-עד in טיס, flight, נָיֵש, threshing, נָד, teat, דוד, pot, דוד, uncle, סוס, horse, שָיֵש, marble, a huge stone, וָיֵז, peg, טֵיט, loam, צֵיץ, blossom, and עָסֵס, juice.

In general, the fundamental concept עז does not refer to movement and celerity, תסיסה, but only to the accomplished and evident fact of a body being extended, namely:—



תרועה, אור, אור, עור, יריעה, יער, אורן (מין תורן רענן), ארון.

The fundamental concept *ar-ra*, ער-רע, is also common in the loose and freely moving body parts:—

פֶּרֶק, מַפְרָקָת, בֶּשֶׂר, שֶׁעַר, רֹאשׁ, עוֹרָף, עוֹרָק, צוּאֵר, זְרוּעַ, זֶרֶת, טְבוּרַ, עוֹר, פֶּרֶק, רִגְלַ, יֶרֶךְ, בֶּרֶךְ, גְּרוֹן, גְּרִגְרַת, מְרַפֵּק, מוֹרָאָה, קְבוּרַת, קֶרֶב, קֶרְסוּל, רַחֵם, רִקְמָה, שְׂרִיר.

These seven fundamental concepts were combined in a linguistic evolutionary process first into bi-conceptual roots, and then into multi-conceptual roots. This root system was gradually and conventionally expanded in response to cultural need by slight vocal or literal mutations of the same fundamental concept within each root, ultimately attaining a perfect language.

### *The form of the Hebrew letter*

All Hebrew letters are typographically minimal, being composed mostly of short vertical and horizontal segments that meet at corners and nodes. In no Hebrew letter do segments cross. All letters except א have only one node, and the number of rays issuing from a node is invariably three.

Letters representing the same fundamental concept closely resemble each other. Such are the letters א, ב, ג, ד, ה, ו, ז, ח, ט, י, כ, ל, מ, נ, representing the fundamental concept עג-גע. The letter כ is merely the letter ה rotated on its side; the letter ה is the letter ה with a disconnected left leg; the letter ג is the letter ה with a tilted left leg, and the letter ק is the letter ה with an elongated left leg. The letters ד and ז, both representing the fundamental concept עז-זע-עד, are also similar.

Even though it is possible that the Hebrew letter is a formal abstraction, it no longer bears any pictorial significance. It is an illusion to see, for example, in the Hebrew word חמור, ass, the letter ה as depicting the animal's hind legs, the letters מו as depicting its body, and the letter ר as depicting its neck with a forward, thrusting head. The same is true for the names of the beasts גמל and גמר. Likewise, the letter ש in שור is not intended to depict the horns of the ox, and the letter ש in שמש is not an image of the rays of the sun, nor (מים) a picture of its round body. Also, שש is not a mere collection of six vertical strokes.

The Greeks received the alphabet (אלף-בית) from the people of the East (קדם, kedem, and hence "academy" for the place of study of the art of writing, brought to Greece by the legendary Phoenician Cadmus, Κάδμος.) By the universality of the human sound system, or by the affinity of the Semitic and Indo-European languages, these letters were of instant use for transcribing their language, and eventually for transcribing most other Indo-European languages.

The Greeks rounded and looped the squarish letters to allow for a continuous draw of the pen, and they reversed the direction of the writing to ease the dragging, as opposed to the pushing, of the pen on the flat paper or parchment. The Hebrew letter ב, for example, turned in this process into β, with two loops created by the coming and going of the pen over the top and bottom horizontal segments of ב, and with a bent down tail, absent in its capital version Β. It appears that the letter ρ is also a reversed and looped ר, and that the Greek letter ζ retained the shape of the symmetric Hebrew letter ז. The corresponding capital letter Ζ was rectified to ease its carving into stone. The letter η, corresponding to the Hebrew letters ה and ח, was slightly stylized, and in the corresponding capital form Η the top of the letter was lowered to its loins, to leave it in the form of the archaic Hebrew letter now written as ח.

It is also interesting to observe the similarity between the Latin letters I, J, Z, S, Y, T and the Hebrew letter י; the similarity between the Latin capitals C and G and the flipped-around Hebrew letter כ, and the similarity between the Roman D and the Greek Δ, delta, which appears to be in the shape of a tent flap, דָּלָת. The Roman letter K appears to be a ligatured IC.

### *The trilateral root*

Fundamental concepts are grouped together to create the basic linguistic capsule, or conceptual cluster, known as the root—in Hebrew, שֶׁשׁ or פֶּעַל. For example, the Hebrew verb גדל, to grow, is composed of the fundamental concepts גע, of aging, עד, of deviation, and על, of

elevation, and we analyze it thus: גדל(גע-עד-על). All Hebrew words are derived from clearly recognized roots. Other than roots, Hebrew has no words *per se*. There are some three thousand roots in biblical Hebrew, and they are almost invariably trilateral. Some examples of these roots, broken down into their fundamental conceptual components, are:—

בהל(עב-הך-על), בחל(עב-הך-על), בדל(עב-עד-על), בצק(עב-עז-גע), גבל(גע-עב-על), גחל(גע-הך-על), גמל(גע-עם-על), דחק(עד-הך-גע), דפק(עד-עף-גע), דלק(עד-על-גע), זהר(עז-הך-ער), זמר(עז-עם-ער), חלף(הך-על-עף), חסד(הך-עז-עד), טפל(עז-עף-על), כלם(גע-על-עם), לטף(על-עז-עף), מרח(עם-ער-הך), נפח(גע-עף-הך), נשך(גע-עז-הך), סכן(עז-הך-גע), פרם(עף-ער-עם), צפר(עז-עף-ער), קרס(גע-ער-עז), רצח(ער-עז-הך), שנס(עז-גע-עז), תלם(עז-על-עם), תמך(עז-עם-הך), תפר(עז-עף-ער).

A root consisting of three letters may be composed of three, two, or only one fundamental concept. The root הך-הך-גע contains only the fundamental concept גע-הך-גע, alternately represented by the letters ה and כ. The same is true of the following three kindred trilateral roots הך-הך-גע, הך-הך-גע, הך-הך-גע. The roots:—

ידד(עז-עד-עד), ישש(עז-עז-עז), סתת(עז-עז-עז), צדד(עז-עז-עז), שדד(עז-עד-עד), שדד(עז-עז-עז), שטט(עז-עז-עז), שתת(עז-עז-עז), תסס(עז-עז-עז), תשש(עז-עז-עז),

are all composed of only one fundamental concept: עז-עז-עז, of stoutness and size. The root עז-עז-עז is composed of the fundamental concept עז-עז-עז, of abundance, and the repeated fundamental concept על, of loftiness. The root גלח(גע-על-הך) is composed of the repeated fundamental concept גע-הך, of cohesion, plus the fundamental concept על, of elevation. The root עז-עז-עז is composed of the repeated fundamental concept עז-עז, of issuing and doing, plus the fundamental concept עף-עף, of being and offspring. The root חכמ(הך-הך-עם) is composed of the fundamental concept עם, of massivity, plus the repeated fundamental concept הך, of cohesion. The root נענ(גע-גע-נע) is composed of the repeated fundamental concept נע, of novelty, plus the fundamental concept גע, of coming or going. The root ער-ער(עף-עף-עף) is composed of the repeated fundamental concept עף, of puffing and popping, plus the fundamental concept ער-ער, of roaring and erring.

Whenever the fundamental concept ער-ער appears amongst the constituents of a root, it is an indication that the root alludes to aggregation or plurality, as in פרף, (which we may consider as being composed of the two bi-conceptual roots פרע and רפה) which means 'to rend,' 'to tear,' 'to rip,' 'to untangle,' or 'to take apart.'

In the following pairs of roots, the complementary exclusion/inclusion of ער in the primary components of the root indicates reference to opposite states of existence, whole versus varied:—

אבב/ארר, אשך/ארך, אשל/אשר, בהט/רהט, בהל/בהר, בלג/ברג, בצק/ברק, בצק/בצר, גבש/גרש, גדל/גדר, גדל/גרל, גמל/גרל, גמל/גמר, דבק/רבק, דגל/רגל, דגל/דגר, הדיס/הרס, זהם/זרם, זמן/זמר, זקף/זקר, חדק/חרק, חדש/חרש, חמא/חרא, חסד/חסר, חסד/חרד, חכם/חרם, חכם/חכר, חלב/חרב, חלל/חרר, חליץ/חרץ, חתם/חתר, טלף/טרף, טפל/טפר, יחר/יחד, ילד/יורד, ינק/ירק, יתר/יתוד, כבד/כבר, כלם/כרם, כעס/כער, כתל/כתר, לבד/רבוד, לטש/רטש, להב/רהב, לבב/רבב, משח/מרח, מודד/מרר, נבט/נבר, נעם/נער, נפש/רפש, סכן/רכן, סמך/סרך, סעד/סער, סתם/סתר, עזד/ערר, עדף/ערף, עקר/עקר, עקד/פרש, פגם/פרם, פחם/פרם, פטם/פרם, פטר/פטד, פקר/פקד, צלם/צרם, צמח/צרה, צמק/צמר, צפח/צפר, קבע/קרע, קלס/קרס, קצן/קרון, שחם/רחם, שתק/שרק, נצח/רצה, תמך/רמך.

Such pairs also exist in English, for example: tame/tear, mode/more, keep/reap, meek/reek, come/core, some/sore, bend-mend/rend, boot-shoot/root.

Comparison of such opposite roots helps to clearly delineate the primary meaning of both roots, particularly in cases where the semantic field of either root has been expanded, shifted, or blurred over time by liberal usage. The root בצק, to swell, from which בָּצֶק, dough, is derived, is a close relative of the roots:—

בדח-בדק-בוך-בזק-בטח-בתק-פסח-פסק-פשק-פצה-פתק,

all comprised of the fundamental concepts הך-גע, עז-עז, עב, and in the same order. Their contrary root ברק, which contains the fundamental concept ער-ער, is a close relative of the roots:—

ברג-ברה-ברך-פרג-פרה-פרך-פרק,

which all refer to acts or states of dispersion. Indeed, הברק, the lightning, is discharged (נפרק) from the clouds. הברקה, polishing, is essentially the scrubbing, scraping, and scouring of a dull face of rusted metal to regain its shine. The basic meaning of the rare root לטש used in the working of metal is explained by its opposite רטש. Our understanding of the primary meaning

of the root רטש is enhanced by looking at its close relatives:—

רדד-רטט-רטס-רצץ-רשש, רפש, רגש-רחש-רכש, רמש, רטב, רתח-רתך-רתק, רתם, רטן.

The root רתח(ער-עז-הך) is restricted now to 'boiling,' but it was previously used to describe any mincing, hacking, or chopping (רציצה ותחיחה) typical in the preparation of food, as were its relatives in spirit רוח-רצה, רמח, רקח.

Replacement of the fundamental concept עב with עז-עז in the root ברק recalls its close relatives זרק-טרק-ירק-טרק-שרק, and, indeed, the lightning is flung (נורק ונטרק) from the cloud, which shoots and hurls (יורק ושורק) it forth toward earth. An אילן סרק is a tree bearing no fruits (אילן שָׁרָג), or fruits that are spurned and rejected (נורקים). Replacement of the fundamental concept עב with עג-גע-הך in the root ברק recalls its relatives קרח-כרך-קרה, and, indeed, the lightning is thrown out; it is ejected and expelled (חורג וחורק) from the cloud. Replacement of the fundamental concept עב with עם in the root ברק recalls its relatives מרג-מרה-מרך-מרק. Replacement of the fundamental concept עב-גע with עב-עף in the root ברק recalls its relative פּרַף. Replacement of the fundamental concept עב-גע with עז-עז in the root ברק recalls its relatives:—

ברד-ברז-ברש-פרד-פרז-פרט-פרט-פרץ-פרש-פרש-פרת.

The roots ברן, ברם, ברל, ברן are not in use.

One method that Hebrew uses to complete deficient roots—i.e., roots consisting of only one or two fundamental concepts—in order to fulfill the canonical trilateral form, is inserting the neutral, or filler, letters א and ע. These letters have purely vocal or visual functions, and impart no additional conceptual meaning to the root. This device is used in the roots:—

אתא(עז-זע), ידע(עז-זע), עדף(עד-עף), אסף(עז-עף), עקן(עג-עז), דאג(עד-עג), שאף(עז-עף), צעף(עז-עף), פעל(עף-על), בלע(עב-על), גלע(גע-על), כלא(גע-לע), פלא(עף-על), פתע(עף-עז), כרע(גע-רע), קרע(גע-רע), קרטע(גע-ער-זע), טאטא(זע-זע), שעשע(זע-זע).

The letters ה, ו, י, ת, also serve as abbreviations for the personal pronouns את, היא, הוא and may be used as such to complete a deficient root. For example, in the word חנות(הך-נע-הוא-את), a store, derived from the root חנה(הך-נע-היא), the letter ת marks the personal pronoun את, but in אות(הוא-עז), a sign, and תאו(עז-הוא), a bull, the letter ת marks the fundamental concept עז-עז. Thus, the significance of the letter ת is at times equivocal. For example, the root תרם, to donate, may be rendered תרם(את-ער-עם), or תרם(את-ער-עם). Such a ת is found in the names of trees:—

תָּאשׁוּר (את-אשרה), תְּדָהָר (את-היא-דהר), תְּרָהָר (את-היא-ארו), תְּרָצָה (את-היא-ארוה), תוֹרָן (את-הוא-און).

Such a pronominal ת is also the essence of the prepositional indicator of a direct object אַתְּ, as in the directive אַתְּ אֹתוֹ, where אַתְּ is short for אתה-אותו, or אתה-אתה.

The following are some roots augmented with the personal pronouns את, הוא, היא to fulfill the trilateral exigency:—

אור(הוא-ער), עיר(היא-ער), בור(עב-הוא-ער), בוז(עב-הוא-עז), גור(גע-הוא-ער), גיר(גע-היא-ער), דור(עד-הוא-ער), נור(נע-הוא-ער), דיש(עד-היא-עז), זיז(זע-היא-עז), ציץ(זע-היא-עז), גבה(גע-עב-היא), געה(גע-היא), כאה(גע-היא), קשת(גע-זע-עז, גע-עז-את).

Yet no Hebrew root starts with the sounds וּ or יְ, and we consider וּלד as the fully consonantal וּלד(הוא-על-עד) rather than the foreign sounding וּלד(הוא-על-עד); and ילד as ילד(עז-על-עד) rather than יְלד(היא-על-עד). In the names יצחק and ישראל the initial יְ sound appears to be of euphonic origin displacing יה, and this sound is indeed absent in יעקב, which happens to bear an only incidental semblance to the future construction of the root עקב. We also find the names יְהוּדָה, יְהוּדָה, יְהוּדָה beginning with various pronunciations of the initial יְ.

No Hebrew word consists of vowels only, which would render it devoid of conceptual meaning. Hence, in the word אֵי, an island or a mass of land, we consider the letter י as marking the fundamental concept עז, rather than the personal pronoun היא, as also in the name of the bird אֵי. The tendency in Aramaic to vocally smudge sibilants, thereby causing a decline in the conceptual quality of a word, has created such 'aaa' anomalies as אַע, a tree, אַע in Hebrew. To a lesser extent this may have happened in Hebrew as well—אַע being possibly a softened form of אַע or אַע. Likewise, אַי is possibly a softened אַי or אַי.

Occasionally, an inserted וּ or יְ is recognized as standing for a muted בּ, as for example in זוד(עז-הוא-עד) and its cognate זוד(עב-עד).

A guttural ה in the first or second position within the root signifies the fundamental concept

גז-הך; but the silent terminal ה appears to be an inert filler, like א or ע. Mostly, we interpret this terminal ה as denoting the personal pronoun היא. Hebrew also uses these terminal ע, א, or ה to visually differentiate between approximate roots of the same ancestry, thereby creating roots of different shades of meaning. Examples of the use of terminal ע, א, or ה to shift and clearly demarcate the meaning of close roots are provided by:—

ברא-ברה, פרא-פרע-פרה, פלא-פלה, גבע-גבה, כלא-כלה, קנא-כנע-קנה, קפא-כפה, זרא-זרע-זרה, טלא-תלע-תלה, טמא-טמע, יצא-יצע, לבא-לוה, מצא-מצה, נבא-נבע-נוה, צבא-צבע-צבה, קרא-קרע-קרה, רפא-רפה, שפע-שפה.

Consider also the alterations:—

בהה(עב-הך-היא), בכה(עב-הך-היא), פכה(עף-הך-היא); בהם(עב-הך-עם), פחם(עף-הך-עם); בהל(עב-הך-על), בחל(עב-הך-על); בהן(עב-הך-נע), בתן(עב-הך-נע); בהר(עב-הך-ער), בחר(עב-הך-ער), בכר(עב-הך-ער), פכר(עף-הך-ער); הבר(הך-עב-ער), חבר(הך-עב-ער); הגר(הך-גע-ער), חגר(הך-גע-ער); הדר(הך-עד-ער), גדר(גע-עד-ער), חדר(הך-עד-ער); דהם(עד-הך-עם), זהם(עז-הך-עם), שחם(עז-הך-עם); שהה(עז-הך-היא), שחה(עז-הך-היא); והר(עז-הך-ער), סהר(עז-הך-ער), זכר(עז-הך-ער); להם(על-הך-עם), לחם(על-הך-עם); דהה(עד-הך-היא), דחה(עד-הך-היא); מהה(עם-הך-היא), מתה(עם-הך-היא); נהם(נע-הך-עם), נחם(נע-הך-עם); רהב(ער-הך-עב), רחב(ער-הך-עב); מהר(עם-הך-ער), מחר(עם-הך-ער); הלל(הך-על-על), חלל(הך-עח-על), גלל(גע-על-על), כלל(גע-על-על); הוה(הך-עב-היא), חוה(הך-עב-היא), גבה(גע-עב-היא), כוה(גע-עב-היא); קוה(גע-עב-היא), חדה(הך-עד-היא), חדה(הך-עד-היא), הוה(הך-עז-היא), הסה(הך-עז-היא), חוה(הך-עז-היא), חתה(הך-עז-היא); היה(הך-עז-היא), חיה(הך-עז-היא); המה(הך-עם-היא), חמה(הך-עם-היא); המם(הך-עם-עם), חמם(הך-עם-עם); הנה(הך-נע-היא), חנה(הך-נע-היא); הרה(הך-ער-היא), חרה(הך-ער-היא).

Still, we do also encounter kindred pairs such as רוה-רוח, צוה-צוה, גבה-גבה, in which the terminal ה appears to be a vocally tempered or visually altered ה, marking the fundamental concept גז-הך.

Hebrew also extensively uses the device of substituting different letters, representing the same fundamental concept, into the root to enrich and variegate its verbal stock. Some examples of such discriminating substitutions are:—

אתר-עטר-עטר, אהל-אחל-אכל-עכל, אור-אצר-אסר, בשר-בסר-בדר-בטר, בהר-בחר, גלל-הלל-חלל-כלל-קלל, גבב-קבב-גפף-חפף-כפף, גדר-קדר, גמר-כמר, דבר-טבר-צבר-תבר, דלג-דלק, חדר-הדר, חבר-חור, הלם-חלם, התל-חתל, חטר-חתר, חדש-כתש-גדש, טבח-טוח, טען-תאן, יגר-יהר-יחר-ייקר, ירח-זרה, יפה-שפה, כלא-קלע, נפל-נבל-נול, נגר-נהר-נחר-נקר, נהם-נחם, סהר-סכר-זחר-זכר, פקע-בקע, פצע-בצע, פטר-פטר, פרך-פרח, פלח-בלח, צהר-צחר, צבר-צואר, צרה-צרך, קבר-כבר, קשר-כשר, קשט-קשת, קטף-כתף, קטב-כתב, קטל-כתל, קטם-כתם, רגם-רקם, רתם-רדם, רכב-רחף, רבך-רות, שגל-שחל-שכל-שקל, שגר-שקר, שהם-שחם, שהה-שחה, שפה-שבה-שוה, תלה-דלה-צלה-שלה, תמר-סמר-זמר-ימר-צמר.

This device is often put to use when there is a need to spawn an abstract root out of a concrete metaphor, as in סגר-זקר-סכר-שכר, to close, to lock, to erect, to rent, which all have a clear and factual existential meaning, compared to their abstract cognate זכר, to remember. The omission in Hebrew of the root זחר (whether by design or by default) creates a conflicting verbal homology between זכר, to remember(re-member), and זכר, male—a conflict that can be resolved only contextually.

Conceivably, זכר, human male, originally meant just a member, or scion, enclosed, סכור or זכור, in his family circle, and in this sense זכור is near in meaning to נחור, פכור, יחור, בחור. There is only a distant and superficial metaphorical relationship between זכר, a male, and זקר, to erect, except that here the implied זקר refers to the fact that the male stands erect (he being a Homo Erectus) and is surrounded by his kin, and also to the fact that he is part of the erected structure (מסגרת) of his family. The occurrence of the fundamental concept עז in the root זקר indicates that Hebrew considers erecting to be achieved through the aggregation of loose parts, or different bodies.

We notice the befitting presence of the fundamental concept *ar*, of separation, in the English words *erect* and *structure* (originally meaning ‘to heap,’ ‘to assemble’), as well as in its cognates *strike*, *strict*, *strong*, and *stray*. This *ar* sound also elicits the true meaning of *grow*, *increase*, *raise*, *enlarge*, and *great*, all in which it appears.

The couplet of fundamental concepts זק(עז-גע) present in זקר comprises the entire conceptual content of the root עוק, to tie, and also of the root הויע והקיע, הויע והקיע, to collect, to cry out, to surge. The couplet זק(גע-ער) in זקר comprises the entire conceptual content of the root עקר, to uproot, the root קער, to hollow, to engrave, and the root קרע, to tear, to rend, to rive. The couplet זר(עז-ער) in זקר comprises the entire conceptual content of the root אור, to gird, the root

זקף (עז-גע-עף) זקף, to trifle, and the root זרע, to disperse, to scatter. Some opposite states of זקף and זקן (עז-גע-נע) זקן. The metaphorical relationship between זקף, to close, to grasp, to clutch and זכר, to rent, to hire, to acquire, to lease, is evident.

Such verbal conflicts, or near conflicts, exist also in English, which has to contend with such cognates as *rend* and *rent*. Only that which is rent, breached, wrested, and separated can be rented.

### *Degree of closeness of roots*

Roots that are composed of the same fundamental concepts in the same order, but which use alternate letters to signify the same fundamental concept, are considered closest to each other. For example, the letters ב, ו, פ, ף may be used interchangeably for the fundamental concept עב-עף-בא as in the pair ברר, פרר. Making such substitutions yields the following families of roots:—

ברר-פרר, גור-הרר-חרר-קרר, דור-זור-סור-צור-שור, רבב-רפף, רגג-רכך-רקק, רדד-רטט-רסס-רצץ-רשש, ברג-ברח-ברך-ברק-פוג-פרח-פרך-פרק, ברד-ברז-ברש-בת-פרד-פרז-פרט-פרס-פרש-פרת, גרב-גרף-חרב-חרף-כרב-קרב, גרד-גרז-גרט-גרס-גרש-הרס-כרס-כרש-כת-קד-קרט-קיס-קרץ-קיש, גרל-חרל, גרם-חרם-כרם, גרן-הרן-חרן-קרן, דרב-זרב-זרף-טרף-סרב-סרף-צרב-צרף-שרב-שרף-תרף, דרג-דרך-זרח-זרק-טרח-טרק-סרג-סרח-סרך-צרח-צרך-שרג-שרך-שרק-תרח-תרג, דרס-דרש-זרד-זרו-טרד-טרו-טרט-טרש-ירד-ירט-ירש-סרד-סרט-סרס-שרד-שרץ-שרת-תרד-תרון, מרג-מרח-מרך-מרק, מרד-מרט-מורס-מרץ-מרש.

Next in line are the roots that consist of the same fundamental concepts, but arranged in a different order. For example:—

רבק-רקב-ברק, בקר, קבר, קרב; ברד, בדר, דבר, דרב, רבד, רטב; גרד, גדר, דגר, דרג, רקד, רתק; גרל, רגל; גרם, גמר, מרק, מגר, רגם, רמח; גרן, כנר, רגן, נגר; צבר, צבר, רצף, רבץ, פרוץ, פצור; צרח, צחר, רצה, רחץ, חרץ, חצר; דרס, תשר, רטש, רשת, סדר, זרד; מרס, מסר, רמס, רום, סמר, זרם; מרץ, רמץ, צרם, צמר.

These are followed by the roots in which any single fundamental concept except ער has been substituted with any other fundamental concept besides ער. For example:—

ברר, גרר, צרר, מרר; ברז, פרו, חרו, זרו; מרס; ברד, חרד, שרד, מרד; ברך, פרה, פרך, פרם; פרף, פרק, פרוץ, פרם; פרף, חרף, צרף; ברג, חרג, שרג; מרג; גרב, גרף, חרב, חרף, זרב, ורף; גרב, כרך, גרו, גרל, גרם, גרן; פרם, גרם, צרם; רבק, רתק; רבץ, קבר, גהר, קשר, כמר; כנר; קבר, צבר, נבר; רבד, רקד, רצד; רמס, רמח; גמר, סמר, נמר; גבר, גדר, גמר, כנר; בתר, כתר, סתר, נתר, נמר; רגן, רסן, רמון; בגר, חגר, סגר, מגר, נגר; בגר, בדר.

The last and most comprehensive category includes those roots in which any of the fundamental concepts נע, על, עז, עג, עו, על, עס, נע have substituted one another, or have rearranged their order in the root, or have alternated their representing letters. In this process of permutations and substitutions, the fundamental concept ער-רע is never introduced into a root in which it was originally absent and is never removed from a root in which it was originally present, since ער is of a particular nature.

### *There are only two fundamental concepts*

Hebrew in particular, and possibly language in general, perceives and expresses reality not as a manifold but as a mere bifold. The six fundamental concepts נע, על, עז, עג, עו, על, עס, נע allude to only one idea: that of material being and existence—that which possesses the tangible qualities of actuality, mass, appearance, matter, substance, bulk, and body. These six fundamental concepts are entrenched conceptual variants that vocally enrich and modulate the language, allowing it to reach its present varied and elaborate state.

The seventh elementary concept, ער-רע, represents the other aspect of reality—that of separability and variance. Language describes nature as it is revealed to the senses, as a dichotomy consisting first of bulk and then of its existence in separate and diverse manifestations. Language makes but one essential distinction: between the one and the many, the single and the group, the bound and the loose, the fixed and the movable, the firm and the dissolute, the solid and the rare, the steadfast and rickety, the whole and the disintegrated. All it sees is essentially







convergence through the chain: כשר, כרש, שכר, שרך, רכש; רמש; רמח. The basic meaning of רמח, known to us only from its derivative רומח, is further suggested by the chains:—

רמח, רבך-רוח, רקח, רצח, רמס, רמל; רחם-רגם-רקם; מרח-מרק, מרס-מרץ-מרט; מחר-מהר-מגר-מכר, מסר; חרם-גרם-קדם, גרן; חמר-המר-גמר; רמס-רמץ; רוח-רצה-רסק; חרס-גרם-קדם,

intimating that רומח is a crushing (מרה) instrument or implement.

It is interesting to trace the mutations of a root such as כשר(גע-עז-ער). First, the fundamental concept עג-גע-הך, which is one of its primary constituents, is allowed to be variously represented by each of the letters ק, כ, ה, ח, ג, to yield: קשר, כשר, חשר, גשר. Next, the fundamental concept, אז-זא, עז-זע, which is another of its primary constituents, is allowed to be variously represented by each of the letters ת, ש, צ, י, ט, ד, to yield:

גדר-גור-גשר, חדר-חור-חטר-חסר-חצר-חשר-חתר, כדר-כיר-כשר-כתר, קדר-קטר-קצר-קשר.

Changing the order of the fundamental concepts within the root yields:—

גדר, גרד, דגר, דקד, רתק; גור, גרו, זרק, זקר, רגז, רסק; גשר, גרש, שגר, שרק, רגש, רסק; חדר, חרד, דרך, דהר, רתח, רהט; חור, זרח, זכר, רוח, רחש; חטר, חרט, טחר, חתר, רתח, רהט; חסר, חרס, סחר, סרה, רצה, רחץ; חצר, חרץ, צחר, צרה, רחץ, רצה; חשר, חרש, שחר, סרה, רצה, רחץ; חתר, חרט, תחר, טרה, רתח, רהט; קדר, קדר, דקר, טרק, רקד, רתק; קצר, קרץ, שקר, קשר, קרש, שקר, שרק, רסק, רגש.

Interchanging the fundamental concepts גדר yields, just for the variants:—

בדר-בור-בסר-בצר-בשר-בתר-פדר-פור-פטר-פצר-פטר-פטר, סדר-סטר-סתר-שדר-שור-שטר-שטר-שטר, מסר, נדר-נדר-נדר-נדר-נצר-נצר-נדר-נדר; גבר-גפר-גהר-גמר.

### *The fundamental concept ער is a describer of form*

Geometrical, physical and social ideas involving aggregation are expressed with the use of the fundamental concept ער. The root ראה(ער-היא), to see, signifies first and foremost the ability to separate the features of an image appearing (up-bearing) before the eye. The antonym of ראה is אטם(עז-עם), to block, to blacken (but not 'to darken' or 'to tarnish,' both of which contain the *ar* sound.) The uni-conceptual אור means 'air,' 'light,' the sparse, clear, bright, brilliant (בהיר), rarefied (מעורער), (יריר, עיריר, מעורער), all-pervading ether that radiates from the sun and fills space to illuminate and elucidate the objects immersed in it. עיר is a bustling and crowded city of many houses and throngs of restless people. ריר is pus, saliva or any other freely flowing, rapidly spreading secretion. רע is bad in the sense of being corrupt (רקוב), perverted, unsound (ארעי), flimsy, crumbling (מעורער), deteriorated, lacking integrity, and incoherent. רע is a friend (חבר), a separate (נפרד) and independent (בן-חורין) human being free to come and go at will.

The understanding that Hebrew considers 'will,' רצון, as equivalent to freedom, חרות, דרוז, permission, רשות, lack of restraint, עצירה, and the capacity to exercise choice, finds its confirmation in the closeness of the pair רצה-רשה. These two are part of a chain that also includes רדה-רוה, which are closely connected to רש, רץ, רד, and which are but variants of רן, רם, רו, רב, רך-רק, רו, רם, רב.

Likewise, the abstract roots בהר(עב-הך-ער), to be clear, to be bright, and בחר, to choose, to select, are but variants of the concrete root פכר, to crumble, to separate, to take apart. Indeed, only the detachable and discrete is distinct, discernible, and can be picked at will— there is no selection, בחירה, without a clear choice, ברירה.

The opposite states of the root אטם are actually ארם(ער-עם) and אתר(עז-ער), obtained by replacing the fundamental concepts עז and עם, of solidity, with the fundamental concept ער, of disintegration. In this way the opposite states of the root סתם, to shut, are זרם-צרם, סתר, רתם, זרם-צרם.

Dwelling, in the general social sense, is expressed in Hebrew by גר(גע-ער), which embodies the notions of aggregation, crowding, dragging, and tracking, as manifested by its concrete relatives גרר, קרע, קער, עקר, אגר, and the variants תר, סר, זר, דר—all in turn closely related to the roots מרר, מדר, צרר-שרר, מרר; עדר-עזר-עצר-עשר-עטר; to אדר-אור-אסר-אצר-אשר-אתר, עדר-עזר-עצר-עשר-עטר; and to שאר, to remain, and so on.

The root אסר-עצר, to arrest, essentially means to gather, to collect, or to congregate. Imprisonment is not freezing in place but rather holding together in a group. The concept *ar*, of separability and diversity, is likewise found in: *crowd, concrete, discrete, root, express, form, drag, track, variant, arrest, prison, free, and frozen*. The connection between *free, freeze*, and



The couplet in **רה** in **רהב** may be considered as an embedded root, **רכך**, to be soft, to be loose, to be released. The couplet in **חב** in **רהב** may be considered as an embedded root, **חבב**, a close relation of **גבב**, to accumulate. The couplet in **רב** in **רהב** may be considered as an embedded root, **רלב**, a close relation of **רפף**, to be infirm—all decisively contributing to the true sense of **רהב**.

A close relative of **רהב**, wide, is **רהב**, grandeur, splendor, magnificence, spectacularity. Also close to **רהב** are the roots **רכן**, **רחם**, **רחל-רכל**, **רחש**, **רחץ-רחש**, **רחק**, **רהט**, **רטב**; obtained through the interchange of **נע**, **עב**, **עג**, **עז**, **על**, **עם**, **נע** with their representing letters. Reordering the three fundamental concepts **עב-עז-על** within **רהב** discloses additional relatives:—

**רוח-רבך**, **חרב**, **הבר-חבר**, **ברה-ברך**, **בהר-בחר**,

all known to describe acts and states of dispersion, disruption, and disorder.

**ארוך**, long, is but a variant of **רכוך**, to be soft, pliable, stretchable, distensible, and extensible.

**חורי-הך-הוא-ער** is 'a mountain' or 'a crag,' but **חורי-הך-הוא-ער** is 'a hole'; the first is made by adding gravel, the second by removing it. **אהור** means 'the previous strata upon which the latter strata rest.' **כור** is 'a crucible' or 'a crater' created by removing material, while **קיר** is 'a wall' or 'a ridge' created by adding material.

The root sequence **סג-סהר-סכר** implies that the meaning of **סקר** is a closed, **סגור**, packed, round form. The **סחר** also carries and shines, **שוחר**, **צוחר**, **סוחר**, **יוחר**, **טוחר**, **זוחר**, **דוחר**, in the sky. Close to the family of roots **צהר-סחר-יהר-סחר-צהר** is the family **נהר** **גהר**, **מהר**, **נהר**.

Similarly in English, 'to grate' means to scrape, 'a grate' is a basket made of crossed scraps, 'a grate' is full of gross craters and grottos, 'great' means a growing heap of crude grist or ground grain, 'a crust' can be crushed, and 'to greet' means to integrate the varied.

**So**, **הר** **תבור** is but **הר צבור** or **הר צואר**, the accumulated mountain. Also, **טבור** is merely **צבור** is in fact **צבורה** is **צפיר** is surely **צביר**, and **מְדָר** is but **מְצָר**. The name of the lofty tree **תמר** is a relative of these roots and names by way of the chain:—

**זמר-טמר-ימר-סמר-צמר-שמר-תמר; תבר, תמר; כמר, תמר, נמר**

clarifying the connection between **צמרת** **צמר**, **צמרת**. The fundamental concept **ער** in **ברזל**, iron, steel, stands for the originally loose ore used in its production. On the other hand, the fundamental concept **ער** is noticeably absent from **נחשת**, copper, produced by melting. It is also absent in **בדיל**, tin, and in **עופרת**, lead, that have a low melting point.

However, in order to dilute, abate, and mitigate the rattle of a repeated **ער**, the Hebrew language often uses roots referring to collection and accumulation that are devoid of **ער** in places where roots of rending, dispersing, and separation that do contain **ער** would have been more appropriate. For example, **פצע**, to swell, to expose, has come to mean 'to injure,' even though **רצע**, to pierce, to strip, or to ravage and **פרע**, to disrupt, are more apt descriptions of injury. It would have been more appropriate to call **פגוע**, a malicious (פראי) act of harm and destruction, by the name **פרוע**, and **פצוץ** by the names **רצוץ** or **פרוץ**. Likewise, **חבולה** is actually a **חבוץה**, and a **מחבל** is actually a **מחבר**. An act of sabotage, **חבלה**, perpetrated by a **מחבל**, creates a parcel, **חבילה**, of debris—actually a **חבוץה** of debris.

It would have been more appropriate to call **גומקה**, a pit, **גורה** or **גורה**. It would have been more appropriate to call the diffused matter known as **גו** by the name **רו**. It would have been more appropriate to call the accumulation (כלול) of the loose granular matter known to us as **חול** by the name **רול** (compare Arabic **رمل**). By the same token, it would have been more appropriate to call **קמה** by the name **קרה**. A better name for the tool we call **קלשון** is **קלשון**, from the root **קרש**, to rip, with an **ער** that is appropriately present in the names of the other gardening tools **מעדר** and **מגרפה**, which are designed to pierce, puncture, perforate, breach, rupture, break up, and rake the hard ground. We use the name **פטיש**, hammer, for the pounding and crushing implement instead of the more descriptive names **פטיש**, **פריש**, **פטיש**.

Otherwise, we could call **פטיש** by the name **כתיש** from the root **כתש**, to pulverize, or **לטיש** from the root **לטש**, to forge, or **פגיש** from the root **פגש**, to bump, or **פתיח** from the root **פתח**, to pry open, or **פתית** from the root **פתת**, to smash, or **פתיל** from the root **פתל**, to distort, or **פטים** from the root **פטט**, to stuff, or **פתין** from the root **פתן**, to extend.

Looking at roots with and without **ער** helps us to compare the nature of their state as compact versus dispersed, as in the pairs:—





conclusion of activity. That is to say, language operates in a static, rather than a dynamic mode. The root is correctly portrayed in its פעיל form. In שביר(עז-עב-הוא-ער), being broken, the precise manner in which a thing broke is a long story that is observed or imagined, but cannot be conveyed by the succinct root שבר. The narrative absent in the root is embellished and completed by the imagination. Upon hearing the word שבר, the listener's mind is stimulated to produce a flood of associated images deriving from his own experiences of various demonstrations of wreckage. The true meaning of the root שבר is not the process that has caused the thing to be broken, but rather, the manifested state of a pile of shards and fragments. This understanding is gained from the primary conceptual components of the root שביר(עז-עב-ער), and enhanced by the associations:—

דבר-טבר-צבר-צואר-תבר-שבר; גבר-חבר-חור-כבר-קבר, שבר; גבר, נבר, שבר.

Still deeper insight into the meaning of the root שבר is gained by looking at the fundamental concepts making up the root taken two at a time, as coupled pairs. The couplet שב, found in the root שבר, exists as the independent root שבה, to capture, to catch, to grab, to rob, to pillage, to plunder. The couplet בר, found in the root שבר, exists as the independent root ברה, to tear apart, or ברר, to sort (i.e., to arrange that which is seared and shorn in a series.) The couplet שר, found in שבר, exists as the independent root שרה, to remain, to tarry, to linger, to saturate, to drench, or the root שרר, to be resilient, to gather strength. From this last root we have the names שריר, muscle, tissue, and שורר, umbilical cord.

The root נבע, נטע, נגע-נקע, which is a member of the family נטע, to plant a tree, which is certainly not designed to describe the complex horticultural process of setting a plant in the ground. This is left to the imagination, which recalls memories of such past events and experiences. All that is implied and expressed in נטע, through its components נע-זע, is that the tree is now actually נטוע, standing erect. The fundamental concept נע of נטע is short for גאה, to be new and comely, to be fine; and the fundamental concept זע of נטע is short for טעה, deviated, referring here to the sapling emerging from the ground. The kindred root נבע(נע-בא) is used more specifically for 'gushing,' while נקע(נע-גע) is used more specifically for 'dislocation.' The uni-conceptual root תעה-תעה is likewise embedded in the bi-conceptual root הטא, deviated from the true course.

The root שתל(על) is also 'to plant.' The fundamental concept על in the root שתל signifies elevation, and the repeating על-עו signifies shooting up. Thus שתל means exactly what its primary components imply—a tree rising up. We may also look upon the root שתל as incorporating the three roots שתת, to draw out, שולל, to remove, and תלל, to pile up. A close relative of שתל is שדל, to strive, to endeavor, to make an effort, to exert oneself. Some other relatives of שתל are שתל-פתל, בתל-פתל, חתל-כתל, שבל-שפל, שגל-שחל-שכל-שקל, whose narrow particular meanings are determined by usage and context. The root שדל(עז-עד-על) is related to the root גדל(גע-עד-על), but the growth referred to in שדל is that of virtue.

In this way, קצץ(גע-עז-עט), to cut, to hack, to hew, to chop, to mince, to slice, or to dice, describes only the aftermath of the cutting, in the material being heaped and piled—קאה וצץ. Some relatives of this root are:—

כסס-קשש, בצץ-פצץ, חצץ, לצץ, מצץ, נסס-נצץ, גבב-חבב-קבב-הבהב, גזז, גלל-כלל, גמם, גנן.

Likewise, the root מרח(עם-ער-הך) (a close relative of רמה and חמר, to smear, refers not to the specifics of the smearing action, but rather to the property of the material used, being evidently soft and pliable, as indicated by the presence of the fundamental concept ער in the root. Similarly in English, only the loose can lust, get lost, be least, be last, be leased, or be released. The root מרא does not aspire to describe the complex process of gathering speed and taking off, but rather the state of a bird floating freely in space, מרום—Raum in German, room in English. Some close relatives of the root מרא that also contain the fundamental concept ער, and that likewise describe such states of dispersion, are:—

ברא-פרא-פרע, גרע-חרא-כרע, קרע, דרא-זרע-צרע-שרע-ירע.

The opposite state of מרא is מצא or מלא, and the opposite state of מרום is מקום or מתום, obtained by replacing the fundamental concept ער with the fundamental concepts עג, על, עו. An opposite state of ברא is בהה, as in תהו ובהו. The act of בריאה, creation, refers to a mysterious event, but its result is evident for all to see in the פריעה, the tearing asunder and separation of the elements, as



well as the proliferation, the dispersion, and the scattering of the multitude of creatures sent to roam heaven and earth.

Notice the *ar* in: *create, sunder, disperse, scatter, strew, separate, different, roam, earth*. It is interesting that *rock* (actually a raked aggregate, a conglomerate) includes *ar* but *stone* (a stout standing stunted piece of solid earth) does not.

### *Inversion of root meaning: Positive and negative*

Language expresses the negative as the opposite of the positive—that which is possessed. The meaning of ‘nothing’ can only be expressed as ‘not a thing’ or ‘not having.’ Hebrew acknowledges that things do not vanish but are rather transformed or displaced—that a body cannot be in two places at once. This explains the surprising vocal affinity of אבד(עב-עד) (related to בד, a branch, בדה, to invent, and בוד, to be isolated), to be lost, to perish, to be taken out, to be removed, to be deprived, and עבד, to produce, to collect, to invent, to bring out, and עבט, to bind (to find). In English, ‘lost’ means ‘is loose somewhere.’

This way of expressing the negative in terms of a positive explains the affinity of פנה, a corner, a protruding (פונה) pin, and פנה, he vacated, he directed (הפנה). It also explains how שווי, value, worth, and שוא, nothing, both derived from an identical root consisting of the fundamental concepts עז and עב, acquired contrary meanings. It also explains the complementary nature of the similar sounding, identically composed roots אפס(עף-עז), to vanish, and אבס(עב-עז), to fatten, to inflate, to fill to capacity, to pack to the very end. It also explains the complementary nature of תם, to be wholesome and of a solid (אטום) reputation, and תם, concluded, terminated, completed, finished, having come to an end. It also explains the relationship between פליה, annihilation, and פליה, total inclusion. Such is the relationship in English between ‘and’ and ‘end.’ It also explains the relationship between the kindred roots of apparently opposite meaning חזר, came back, returned(re-turn-ed), reverted(re-vert-ed), and חסר, absent, missing. The presence of the fundamental concept ער in the composition of חזר and חסר is an indication, as it is generally, that both roots refer to collections of unrestrained objects that may be subtracted (להחסיר) and scattered, or returned (להחזיר), gathered, and brought closer freely.

Emptiness, ריקנות, is achieved by evacuation, הרקה, of the brittle, רקוק. In English, ‘empty’ originally meant ‘emphatic at having leisure,’ while ‘vacant(vac-ant)’ and ‘vague’ are related to ‘vogue,’ ‘fog,’ ‘voice,’ ‘weak,’ and ‘way,’ all being variants of the essentially identical roots bc-bg-bk-bq, fc-fg-fk-fq, pc-pg-pk-pq, vc-vg-vk-vq, and wc-wg-wk-wq, consisting of the fundamental concepts *av-af* and *ag-ga*. Some other words derived from this root are: *back, buck, big, bag, bug, fact, fig, figure, fugue, fake, fox, fix, pack, page, pig, poke, victory, vigor, wake, wax, week, and wick*.

The root שלל, to negate, is a slight variant of תלל, to heave. It is only a different viewpoint as to who loses and who gains. Loot, שלל, amounts to collecting and amassing, תלל, another person’s loss. Similarly, דלל means ‘to dangle’ and סלל, from which are derived סליל and סוללה, means ‘to pile,’ while צלל means ‘to dive.’

The root שדד (composed of שדה and עדר) is closely related to the root שתת, to found. So, שוד, robbery, is but צוד, catching and gathering. English uses *rob*, related to *rip, reap, and rape*, for שדד. It is interesting that the English verb ‘to rove’ corresponds to the Hebrew verb שטט. Yet conceptually, there is nothing between שדד and שטט. The שודד, the robber, is a ripper and a reaper, but he is not a משוטט, a rover. The שודד is rather a צודד, a collector of loot. A rover is one who runs apart—one who wanders, drifts, and roams freely.

The root נבל(נע-עב-על) means to be lofty and noble, as in the large musical instrument נבל, nablā, harp, or hefty cask. But נבל is a mean-spirited man, and נבלה is a fallen cadaver. Also, נפיל(נע-עף-היא-על) is a giant, but נפול(נע-עף-היא-על) is shriveled. Whatever falls, נפיל(נע-עף-על), upon the ground, also rises above it just by lying upon it. In this sense נפל is not the process of rushing down, but rather its end result—being on, על, the ground. Such is the relationship in English between *step, steep, stop, and stoop*, on the one hand, and *deep, top, and topple*, on the other.

In any event, the fundamental concept **נע**, like the rest, does not represent movement, תנועה. Instead, **נע** represents only the apparent state of being new.

**נעב(עו-גע-עב)** is ‘to recline’ or ‘to lie down,’ while **נעב(עו-גע-עב)** is ‘to lift up.’ Indeed, to lie down is in fact to hoist the body upon the bed. In like manner, the root **נעל(גע-עו-על)** (from which **נשיל**, a heavy ax or cudgel, is derived) is ‘to fail,’ ‘to stumble,’ ‘to blunder,’ ‘to be clumsy,’ ‘to be awkward,’ ‘to become heavy and inert,’ but the root **נעל(גע-עו-על)** means ‘to tower.’ **נעל(עו-הך-על)** is ‘to stupefy,’ but **נעל(עו-הך-על)** is ‘to elevate and improve the understanding,’ **נעל(עו-הך-על)** is ‘to be ponderous’ and **נעל(עו-הך-על)** is ‘to be exceptional.’ The root **נעל(עו-הך-על)**, so close to the root **נעל**, to creep, to cling to the ground, means ‘to abort,’ ‘to fold over,’ but the root **נעל(עו-הך-על)**, containing also the fundamental concept **על** of elevation, means ‘to be able.’ **נעל** is ‘a nobleman,’ but **נעל** is ‘a loose or lazy lout.’ **נעל** is ‘a hill,’ but **נעל** means ‘demise.’ Yet, both **נעל(גע-עב)** and **נעל(גע-עב)** mean ‘to bow’ or ‘to bend over.’ **נעל(גע-עב)** means ‘to bend down,’ while **נעל(גע-עב)** means ‘to pile up.’

**נעל** (so near to **נעל** and **נעל**), behind, means the compilation of previous layers, while **נעל**, hole, grave, means a reversed **נעל** or **נעל** created by carving and removing layers of gravel. **נעל** means ‘the essence’ (the word actually means ‘to be the extract’), but **נעל** means ‘barren.’ **נעל** means ‘to be lofty,’ but **נעל** is ‘a depression’ or ‘an inverted summit.’ **נעל** means ‘sunk,’ ‘submerged,’ ‘absorbed,’ but **נעל** means ‘invested,’ and **נעל** means ‘settled down.’ **נעל** means ‘empty space,’ but **נעל** means ‘to heap (כלל) praise.’

The imperative, insistent, or assertive **נעל**, ‘do not,’ ‘take it off your mind,’ is but a slight orthographic variation of **נעל**, presently in the sense of *off* or *up*. This is also what **נעל(על-הוא)** (the opposite of **נעל(על-הוא)**, based on the fundamental concept **נעל**), means. The fundamental concept **נעל**, of elevation, serves this same purpose in **נעל(על-הוא)**, perhaps, maybe, possibly, **נעל(על-הוא)**, if, **נעל(על-הוא)**, if not for, **נעל(על-הוא)**, surely, and **נעל(על-הוא)**, off, away. Instead of the fundamental concept **נעל**, Hebrew may prefer the fundamental concept **נעל**, as in **נעל** (the opposite of **נעל**, based on the fundamental concept **נעל**), ‘there is no,’ which is but a slight variation of **נעל**, deviated, deflected. For the conjunction *even*, Hebrew uses the fundamental concept **נעל** in the slightly modified form **נעל**, which is combined with **נעל(על-הוא)** to produce **נעל(על-הוא)**, even if. Thus *on* is **נעל**, *off* is **נעל**, *no* is **נעל**, and *to* is **נעל**. Corresponding to *even* is the German *eben*, which is but a slight variation of *oben*, above.

Negation is also expressed by **נעל(עב-על-הוא)**, **נעל(עב-על-הוא)**, with **נעל** being only a slight variation of **נעל**, but.

Space is symmetric and hence the fundamental concept **נעל** of elevation may imply ‘being on top,’ ‘being upon,’ or just ‘being extended,’ as in the meaning it imparts to the following words:—

**נעל**, תולעת, טלאי, תעלה, לָאָה, בלהה, צלה, שלה, שילו, סלוא, לוע, לוט, לוח, לכלוך, לחות, עתליה, גל, דל, טל, צל, חל, חיל, צלע, חול, טלית, שול, תלולית, שלולית, שלשלת, מעיל, איל, יעל, עול, עלי, אליל, עולל, עוללה, עליה, אפלה, לילה, לול, לולאה, לולב, לאות, נול, נעל, שעל, שועל, שאול, טיול, תלי.

Indeed, **נעל**, תולעת, טלאי, תעלה, עתליה, טל, טלית, טיול are all elevated and extended.

### **מבני-צבירה** *Roots of opposite state*

Our appreciation of the Hebrew roots is enriched when we look at them amidst their relatives, each of which may have acquired a different shade of meaning over time. Consider, for example, the group of roots **נעל**, **נעל**, **נעל**, **נעל**, **נעל**, all consisting of the fundamental concepts **נעל**, **נעל**, **נעל**, **נעל**, **נעל** in the same order, being therefore of the same basic meaning. Among these roots, **נעל**, to be big, is the most concrete, leading to such connections as between **נעל**, size, and **נעל**, a large wall. This root association also informs us that **נעל**, loot, is essentially **נעל**, build-up (of spoils), and that **נעל**, chickling, is essentially a **נעל**, a thriving. In this way we understand that **נעל**, like **נעל**, is ‘balking,’ ‘a blockage’ or ‘a setback.’ In **נעל** the bodily setback is ultimate.

These roots are further linked to more distant relatives, straying thereby ever deeper into the root stock of Hebrew, and encompassing ever wider semantic fields. For example:—



significance. Insertion of personal pronouns produces variously:—

שְׂכֹר (עו-היא-גע-הוא-ער), שְׂכָן (עו-הך-היא-נע), פְּלִיט (עף-על-היא-עו), מְלֶךְ (עם-היא-על-היא-הך), אָבִיוֹן (היא-עב-הוא-הוא-הן), גְּדִי (גע-עד-היא), אָכָר (הך-עו-ער), תוֹךְ (עו-הוא-הך)-תִּיכוֹן (עו-היא-הך-הוא-הן).

Corresponding to מְלֶךְ (Arabic מלך), king, we have מְלָכִים, kings, and מְלֻכָּה, queen. Alongside כְּתֵף, shoulder, we have קָטְיָף, harvesting. While פְּלִיט is 'refugee,' 'survivor,' פְּלֵט is 'output,' and פְּלִיטָה is 'ejection.'

### Vowelizing by diacritical markings

Thus, vowelizing, גְּקוּד, has two essential purposes in Hebrew: first, to add vocal variation and coloration to the pronunciation of names, as in the lively readings נֶמֶר, תְּרַגּוּל, סוּס, תְּרַגּוּל, נֶמֶר, in contrast with the dull נֶמֶר, תְּרַגּוּל, סוּס; second, to interlace the root with inserted vowels intended to mark the personal pronouns אֲנֹכִי, הוּא, אַתָּה, אֲנִי, (high pitched היא for woman and low pitched הוא or הוּא for man) in order to refer the action described by the root to the actors and recipients involved, thus creating the essence of what we call grammar.

### Pronouns in names

The personal pronoun הוּא, shortened to a mere ו, is found in the compound theophoric names בְּתוֹאֵל (בַּת-הוּא-אֵל), God looks (הביט) upon him (הוּא); פְּנוֹאֵל, God turns (פנה) to him; קְמוֹאֵל, God lifts (הקים) him; רְעוּאֵל, God observes (ראה) him; שְׁמוֹאֵל, God listens (שמע) to him. In the names תְּנִיפֵעַל and גְּבְרִיאֵל (גבר-היא-אל), גְּמִלְיָאֵל, דְּנִיָּאֵל, מְלֶכִי-צְדָק, אַחֲזִינֵעַם, אֱלִימֶלֶךְ, the inserted הוּא, shortened to a mere ו, may be a purely phonetical divider, absent in תְּנַנְיָאֵל, God graced (him or all).

It is possible that the name of the goddess עַנַּת is but אַנַּת, consisting of the personal pronouns אַת-אֲנִי only. But אַנַּשׁ is composed of עו-אֲנִי.

### Gender

Natural gender, or sex, is distinguished in Hebrew by the addition of abbreviations for the personal pronouns הוּא, היא, as in:—

אִישׁ-אִשָּׁה (איש-היא), מְלֶכֶה (מלך-היא), גְּבִיר-גְּבִירָה (גביר-היא), גְּבִיר-גְּבִירָה (גבר-היא), אַח-אָחוֹת (אח-היא-את), אָכָר-אָכָרִית (אכור-היא-את), רְחֵמֶן-רְחֵמַנִּית (רחמן-היא-את).

For grammatical reasons אָחוֹת is not אָחַת and מְלֶכֶה is not מְלֶכָּה. A dual form is rare but is occasionally encountered: יוֹלְדֵת (יולד-את)-יולְדָה (יולד-היא), לְהִבָּת (להב-את)-לְהִבָּה (להב-היא). English occasionally marks the feminine by the appendix *-en* (a modified *one* as in *old-olden*, an old one, *Rome-Roman*, the one from Rome), as in the pair *fox-vixen*.

Living beings may be named differently if they are of a different sex, and so we have in Hebrew the pairs עו-תִּישׁ, גמל-בְּכָרָה-נְאֻקָּה, חמור-אֲתוֹן. In English: *cow-bull, cock-hen, dog-bitch, ewe-ram, horse-mare*.

As for non-natural (grammatical) gender, it stands to reason that the strange classification of nouns as masculine, feminine, or neuter is a relic of a general grammatical or phonetic device originally intended to improve the intonation of the language or to prevent confusion as to the object being described. Consider the Hebrew sentence שָׁאָג הַלְּבִיא הַגָּדוֹל, which can be translated as either 'the roar of the big lion' or 'the big roar of the lion.' This ambiguity is absent in שָׁאָגָה (שאג-היא), in which הגדול clearly refers to the lion because שָׁאָגָה (שאג-היא) is feminine. So, שָׁאָגַת הַלְּבִיא הַגָּדוֹל is clearly 'the big roar of the lion,' because לְבִיא is masculine. On the other hand, in שָׁאָג הַלְּבִיאָה הַגָּדוֹלָה, the size referred to is certainly that of the lioness, while שָׁאָג הַלְּבִיאָה הַגָּדוֹלָה is certainly 'the big roar of the lioness,' because שָׁאָג is masculine.

The designation of nouns as masculine or feminine could thus have been arbitrary, its purpose having been to link them to their corresponding adjectives through the device of adjectival gender agreement. Thus, it is possible that objects were originally gendered in an

interchangeable way according to need, in order to connect them to the adjectives describing them: For example, קול הסערה הגדול, 'the strong din of the storm,' as opposed to שריקת הסער החדה, 'the sharp shrieking of the storm'; or רעמת הלבאי הגדול, 'the mane of the big lion,' as opposed to רעמת הלבאי הגדולה, 'the big mane of the lion.' Indeed, many Hebrew nouns like שאג and סערה or שאגה and סערה exist in dual gender form, such as:—

אהב-אהבה, אור-אורה, אמת-אמתה, גבע-גבעה, גוף-גופה, דיר-דירה, זעף-זעפה-זעוה, זעק-זעקה, זקן-זקנה, זלף-זלפה, חום-חומה, חמד-חמדה, חתם-חותמת, טוב-טובה, יד-ידה, יער-יערה, ים-ימה, כור-כירה, להב-להבה, לח-לחה, ליל-לילה, מסמר-מסמרה, נגף-נגפה, נהר-נהרה, נקם-נקמה, סער-סערה, עול-עולה, ענב-ענבה, ענן-עננה, עסק-עסקה, עץ-עצה, עץב-עצבות, פים-פימה, צור-צורה, קער-קערה, רעם-רעמה, רגש-רגשה, שגר-שגרה, שור-שורה, שיח-שיחה, תום-תומה, תולע-תולעת.

Others like קול-קולה vanished, but in so doing left behind the vestige of קולות instead of the formal קולים.

Possibly, מלכו(מלך-הוא), 'he-king,' once designated the male king, in the same way that מלכה(מלך-היא) (or מלכת), 'she-king,' now designates the female queen.

Foreign words ending in ה are systematically considered feminine; thus גונדולה יפה, but קרוקודיל רע.

Now that gender is grammatically redundant it is used to create nouns of similar, yet distinct, meaning in their masculine and feminine forms, such as בלוט, acorn, בלוטה(בלוט-היא), gland, and בליטה, projection, all inflected from the root בלט(עב-על-עז). Also:—

אדם-אדמה, אם-אם-אמה, איש-אשה, בך-בדיקה, בץ-בצה, בטן-ביטנה, גבע-גבעה, גודל-גדולה, דיר-דירה, הספם-הסכמה, זמר-זמרה, זרם-זרמה, חבר-חברה, חקר-חקירה, טבח-טבחה, ידע-ידיעה, יער-יערה, ירך-ירכה, יתר-יתרה, כור-כירה, לב-לבה, מורק-מורקה, מסמר-מסמרה, משען-משענה, עור-עורה, נבל-נבלה, נהם-נהמה, נחל-נחלה, נקם-נקמה, סיר-סירה, פרץ-פרצה, פתח-פתחה, צדק-צדקה, צוק-צוקה, ציץ-ציצה-ציצית, קור-קורה, שושן-שושנה, שיח-שיחה, שור-שורה, ראשון-ראשונה, תקע-תקיעה.

אדמה is rendered feminine through the addition of a final ה, not because it is the 'mother of life,' but in order to differentiate it from אדם, man. אדמה is 'earth,' not a 'she-man,' בת-אדם.

As this complicated grammatical device receded it left behind the natural gender classification, as well as distracting remnants like שמש גדולה ויפה and שמש גדולה וחמה.

### Adjectival pronominal suffixation

Appending the pronouns, or generic names, הוא, היא, אני, can turn an adjective into a noun:—

תחת, תחתית(תחת-היא), תחתית(תחתית-את), תחתונת(תחת-הוא-הן-היא-את); עברי(עבר-היא), עבריה(עברי-היא); אדמוני(אדם-הוא-הן-היא), אדמונית(אדמוני-את); ידיד, ידידות(ידיד-הוא-את), ידידות(ידידות-היא).

By this technique, רגל, foot, is augmented into רגלי(רגל-היא), he, which is on foot, namely 'a pedestrian' or 'a walker,' and רגלית(רגל-היא-את), a small leg or peg. The inflected form of רגל, רגלי, is 'my foot,' הרגל שלי. Yet, רגלי(הוא-עב-על-עז) is not חב-היא-את, but rather a heavy pan, מכבד, as the מכתב(עם-חבת) is a kind of ponderous, פתח(עב-על-עז).

The number שלוש is the name of an aggregate of that many items, but שליש(שליש-היא) (for euphoic reasons not שלוש) and שלישית(שלישי-את), third, refer to a specific person in a specific relative position, and hence the added pronominal היא and היא-את.

In the diminutive formations:—

חמש-חמשית(חמש-היא-את), תל-תלולית(תלול-היא-את), שליל-שלולית(שלול-היא-את), צלחת(צלח-את), צלוחית(עז-על-הוא-הך-היא-את), יד-ידידת(יד-היא-את), כף-כפית(כף-היא-את), כר-כרית(כר-היא-את), פח-פחית(פח-היא-את), נורה(נור-היא)-נורית(נור-היא-את)

the feminine ending היא-את is believed to be the culprit for the perception of lesser size, as in כפית, a teaspoon, as opposed to כף, a tablespoon. But while רוסיה(רוסי-היא-היא) is 'a Russian woman,' קרית(קריה-היא-את) is the name chosen for the Russian language. So also, קרית(קריה-היא-את) is 'a man from the קריה,' and קרית(קריה-היא-את) is 'a woman from the קריה.' The personal pronouns אני, הן are used in תחתון(תחת-הוא-הן), תחתון(תחת-היא-את), אחרון(אחר-הוא-הן), אחרון(אחר-היא-את).

Duplication of components creates roots of intensified sense, as in רכרכי(ער-הוא-הך-היא), a softy, a (male) weakling, and רכרכית(רכרכי-היא) for a female. Likewise we have אדמום(אדם-דם),

(he is) reddish(red-is), אדמדמה(אדמדם-היא), (she is) reddish, ירקרק (not ירקרק), he is greenish, and (ירקרק-היא), she is greenish. It is reasonable that אדום-אדום is אדום, since 'reddish' in the sense of light red would have been rendered in Hebrew אדום מֵעֵין אדום or אדום מֵעֵין אדום.

### The plural

Appendage of the fundamental concept עַם, of amassing, is used in Hebrew to indicate the masculine plural, as in:—

הוא-הם(היא-עם), אֶבֶן-אֶבְנִים(אֶבֶן-עַם אֶבֶן-הֵם), יֶלֶד-יְלָדִים(יֶלֶד-עַם, יֶלֶד-הֵם), דָּבָר(דָּבָר-עַם), דְּבָרִים(דָּבָר-עַם), in which we notice the delicate phonetic adjustment in the pronunciation of יֶלֶד versus יְלָדִים.

The Hebrew affix עַם finds a counterpart in the Latin superlative marker *-ma*, as in *ultima*. It is found in English in the gradation *mean* and *minimum*, and also in *most* (mo-est)—the highest grade of *much* and *more*. We may think of *most* as composed of the two fundamental concepts עַם, עַם (am-is, is-am), which also comprise, but in reversed order, the termination *-ism*.

Feminine names are pluralized by the addition of אַתּ, היא, הוא, as in:—  
לֵב(על-היא-עב)-לְבוֹת(לב-הוא-את), פֶּה-פִּיּוֹת(עף-היא-הוא-את), יְלָדָה(ילד-היא)-יְלָדוֹת(ילד-הוא-את), בַּת(עב-את)-בָּנוֹת(בן-הוא-את), תְּמוֹת(חם-הוא-את)-תְּמִיּוֹת(חם-היא-הוא-את), אָחוֹת(אח-הוא-את)-אֲחֵיּוֹת(אח-היא-הוא-את), דּוֹדָה(דוד-היא)-דּוֹדוֹת(דוד-הוא-את), רַחֲמָנִית(רחמן-היא-את)-רַחֲמָנוֹת(רחמן-היא-הוא-את).

But we also encounter the surprising plurals אֶבֶן-אֶבְנִים and אִשָּׁה-אִשָּׁוֹת. The suffix וֹת of feminine plurality may be given the connotation of עוד.

In English the plural is commonly indicated by an appended *s* (short for *as, is*), as in *cat-cats, pock-pox(pocks)*, or in rare cases by the addendum *-en* as in *ox-oxen*. From Latin English inherited *fungus-fungi, radius-radii*. Interestingly, *sheep* is both singular and plural, and so is its Hebrew equivalent צֹאן.

In the complex form of an inflected noun, the plural indicative suffix is shortened by dropping the additive עַם. Thus we have אֶרְבֵּי(ארגו-היא-אנו), our one and only, our single, box, and אֶרְבֵּי(ארגו-היא-עם-אנו), our many boxes, instead of the formal אֶרְבֵּי(ארגו-היא-עם-אנו). A simpler but grammatically collusive plural form is hinted at in the vestigial תְּלוּנִי(חלון-היא) or תְּגִמּוּלוֹהִי(תגמול-הוא-היא). Plural formation by altering the base form is also used in the languages of the West. So in German, *Topf, pot, Töpfe, pots*. So also occasionally in English, *goose* for one, *geese* for many.

Adjectival agreement in number is practiced in Hebrew for good rhythmic flow even in cases where the ending ים- may not be an obvious indicator of plurality, as in the versifications יום-יוֹמִים(יום-עם) the repeated עַם indicates duration.

The plural form may also be gendered willfully to achieve a fitting inflectional articulation and agreement within the sentence, as in the following examples:—

וְהִנֵּה אֲנִי מְאֻלָּמִים מְאֻלָּמִים(אלוים-עם) בְּתוֹךְ הַשָּׂדֶה,  
with אלוים, sheaf, inflected in the masculine mode to mimic the עַם of מְאֻלָּמִים. And yet, the next part of the sentence reads

וְהִנֵּה קִמָּה אֲלֻמִּיתִי(אלוים-אתי) וְגַם-בְּצִבָּה(נצב-היא),  
with אלוים inflected in the common, feminine mode.

Although כִּנּוּר, גְּלִיזָן, כִּנּוּר, מְעִין, דֶּרֶךְ are usually feminine, we find:—  
הָלוֹא לְאֵלֵהֶם פְּתָרְנִים(פתרון-עם). וְהִגְלִינִים(בא-היא-גליון-עם) וְהִסְדִּינִים(בא-היא-סדין-עם). הָמוֹן שִׁירָה(שיר-היא-אך) וְקוֹל כְּנֹרֶה(כנור-היא-אך). הַמְשַׁלַּח מְעִינִים(מעין-עם) בְּנַחֲלָם(בא-נחל-עם) בֵּין הָרִים(הר-עם). הָאֵל תָּמִים כִּרְכּוּ.

### The dual

The dual form for paired objects is indicated in Hebrew by an extra היא (with no gender implied—היא and הוא being interchangeable), as in:—

שְׁפָה-שְׁפָתִים(שפה-את-היא-עם), שְׁנֵה-שְׁנֵתִים(שנה-את-היא-עם), יָד-יָדִים(יד-היא-עם), לַח-לַחֵי(לחי-היא-עם), עֵין-עֵינַיִם(עין-היא-עם), שֵׁן-שְׁנַיִם(שן-היא-עם)

with שְׁנַיִם for the upper and lower rows of teeth.

The terminal ם is discarded, or is rather found needless and is not added, in the possessive









the man.’ In the statement *פָּן-יִשְׁלַח יָדוֹ וְלָקַח* the *אָתְּ* indicator is left out since both *יִשְׁלַח(היא-שלוח)* and *יָדוֹ(יד-הוא)* contain reference to the third person (הוא) alluded to, and it is clear by these constructions which person could stretch out his hand and take the thing for himself. So it is in:—

כִּי חָרַבְךָ(חרב-כה) הִנֵּפֶת(היא-בן-אתה) עָלֶיךָ וְתִחַלְלֶנָּה(בא-את-חלל-היא)  
 שִׁים(עז-היא-עם) יְמִינֶךָ(ימין-כה)  
 שְׂמַעְנִי(שמע-היא-אני) נְתַתִּי(נתן-אתי) כִּסֵּף הַשְּׂדֵה קַח מִמֶּנִּי(עם-היא-עם-אני)  
 לְקַחַת(לקח-את) הָעֶרְבוֹן מִיַּד הָאִשָּׁה  
 כִּי עָשִׂיתָ(עשה-היא-אתה) זֹאת(עז-הוא-את).

But this *אָתְּ* is present in *אֶת-נִינְוָה* (בנה) *וַיִּבְנוּ(בא-היא-בנה)*, since *וַיִּבְנוּ* leads us to believe that *נִינְוָה* is the builder. In the statement *וַיִּשָּׂא-לוֹט אֶת-עֵינָיו* the *אָתְּ* indicator could also have been omitted since the eyes are unmistakably Lot’s.

### Conjunctions

A prominent aspect of conjunctions such as *פָּן*, *לוֹ*, *כִּי(גע-היא)*, *אֲשֶׁר*, *אֶף*, *אִם*, *אֵל*, *אוֹ*, is that they are never inflected. In particular, while *לֹא*, no, not, is never inflected, and may be used in any tense, *אֵין*, there is no, is inflected, and applies only to the present. Thus the usage *אֵין לִי* ‘I do not have,’ but *לֹא הָיָה לִי* ‘I did not have.’

The conjunctive word *אֲשֶׁר*, that, who, which, what, derived from the root *אשר*, is a close relative of the roots *עשר*, to be rich, to be varied, to be prolific, *שאר*, lingered, tarried, *שרה*, remained, was arranged, *שרר*, prevailed, was certain, was sure, and, *שיר*, to sing. Thus, the statement *קַח-נָא אֶת-בְּנֶךָ אֶת-יְהוֹדָה אֲשֶׁר-אַהַבְתָּ אֶת-יִצְחָק* is rendered: ‘Take now thy son, thine only son, you surely lovest, Isaac.’

### Verbal morphology—structural augmentations

Personal pronouns are inserted into the Hebrew root, *פעל*, to relate the act (or actually its recognized outcome) to the actors performing it and the recipients bearing its results.

The basic *פָּעַל* form refers to acts that are done and manifested, for example *שָׁבַר*, he broke, pronounced with a prolonged *בֵּא*. To relate the act *שָׁבַר* to the person(s) believed, or accused, to have perpetrated it, the root is systematically augmented into:—

*שָׁבַרְתִּי(שבר-אתי) (שָׁבַר-אני not)*, *שָׁבַרְתָּ(שבר-אתה)*, *שָׁבַרְתָּ(שבר-את)*, *שָׁבַרְתֶּם(שבר-היא) (שָׁבַרְתֶּם not)*, *שָׁבַרְנוּ(שבר-אנו)*, *שָׁבַרְתֶּם(שבר-אתם) (שָׁבַרְתֶּם not)*, *שָׁבַרְתֶּן(שבר-אתן) (שָׁבַרְתֶּן not)*, *שָׁבַרוּ(שבר-הוא)*, *(שָׁבַרְתֶּם not)*.

It is interesting that a mere *הוּא*, as in *שָׁבַרוּ(שבר-הוא)*, is used to betoken the fact that many actors participated in the act of breaking. But in the declarative statement *עַל הַדָּלַת* the personal pronoun *הוּא* stands for an indefinite ‘someone.’ Also noteworthy is the use of the obsolete personal pronoun *אֵתִי(את-היא)* appended to *שָׁבַר* to form the conjugation *שָׁבַרְתִּי*, in place of the current independent personal pronoun *אֲנִי(גע-היא)*, which could be merged into *שָׁבַר* to form the verbal conglomerate *שָׁבַרְנִי*.

Insertion of a supplemented *היא* turns the factual *שָׁבַרוּ(שבר-הוא)*, they broke, into the command *שָׁבְרוּ(עז-היא-עב-ער-הוא)*, colloquially *תִּשְׁבְּרוּ(את-היא-שבר-הוא)*. It is possible that the interjection *אָנָּה*, as in *אָנָּה שָׂא נָא*, is actually the personal pronoun *אני* used in polite, imploring, or plaintive modes of speech in place of the blunt *אתה*. Such is also the purpose of the adhered *היא* in *אנא קום נא* or *קום נא* or *קום* instead of a plain *קום* or *קום(קום-היא)*.

Personal pronouns such as *אני*, *הוא*, *היא*, *את*, *הוא*, *את* may be prefixed, infix, or suffixed to augment a verbal as well as a nominal form: *לָשְׁנוּ(לשון-הוא)* *גוי אֲשֶׁר לא-תִשְׁמַע(את-היא-שמע)* *לָשְׁנוּ(לשון-הוא)* *גוי*, in which the *היא* *את-היא* *גוי* refers to Israel, and the *הוא* *לָשְׁנוּ* refers to the *גוי*.

The fundamental concept *נע* found in the personal pronoun *אני* as well as in the feminine plural forms *הֵן* *אֵתְּנָן* also appears in the archaic plural form *יִשְׁאַלְוּ(היא-שאל-הוא-נע)*. The hypothetical plural form *יִשְׁאַלְוּ(היא-שאל-הוא-הם)* is inadmissible as it is already accepted to mean ‘they (הוא) will ask (שאל) them (הם),’ yet we find *יִשְׁשׂוּם מְדַבֵּר וְצִיָּה*. Related to this formality is the archaic form *תִּשְׁתַּכְּרִין(את-היא-עז-את-גע-ער-היא-נע)*.

A pronoun such as *היא* may be added to convey a whiff of scorn or irony:—

האמרים ימהר יחישו(יחיש-היא) מעשהו למען נראה ותקרב ותבואה(בא-תבוא-היא) עצת קדוש ישראל ונדעה(בא-נדע-היא), in which יחישו is rendered 'let Him (היא) hasten,' and ותבואה is rendered 'and come,' and ונדעה is rendered, 'That we may know it (היא).'

The structure שובר(עו-עב-היא-ער) represents a habitual act, with the infix הוא standing for the breaking agent and the infix היא for the object being broken. The inserted pronouns היא and הוא are used at will to modulate the pronunciation, and do not have the gender significance they do when standing detached and alone. שומר, like שובר is accepted as representing an ongoing action. Habitual action exercised by a person is an occupation; in this sense the participle שומר is 'a watchman,' and we may refer to him as, say, שומר הנגן. The structure אשבר(אני-עו-עב-הוא-ער) is accepted as representing an intended or impending act by the actor, אני, to be perpetrated against the object, הוא.

Auxiliary verbs may be used to properly place an act in a sequence of events in the life of the speaker. For example:—

כבר שמרתי (I have already guarded), זה עתה שמרתי (I have guarded just now), סימתי לשמור or גמרתי לשמור (I have finished guarding), אני ממשיך לשמור or אני עדין שומר (I am still guarding), אני עומד לשמור (I am about to guard).

It deserves notice that כבר is but a variant of גבר-הבר, and that סימתי is but a variant of אסמתי-אסמתי.

In English the technique is similar: 'I have eaten' means food is already heaved in me, 'I will eat' means I desire to eat and (maybe) I am going to do it, and 'I should eat' means the burden of taking food rests on my shoulders.

Alternating the use of היא and הוא is also employed to differentiate between the exclamative (for example, שבור(עו-עב-הוא-ער), 'you break it'), the definitive (for example, שבור(עו-עב-הוא-ער), 'it is broken'), and the tentative (for example, שבייר(עו-עב-היא-ער), 'it is breakable').

The absolute, or פועל, form (for example: שבור(עו-עב-הוא-ער), שמור(עו-עב-הוא-ער)) of the verb implies an authoritative, an evocative, a suggestive, an insistent, a declamative, or a durative mode of speech, with the personal pronoun הוא intended for all. Insistence is often shown by a rhythmic repetition of an inserted pronominal, for example ה followed by ה both short for הוא, as in:—

שוב אשוב(אני-שוב), מות תמות(אתה-מות), שמעו(עו-היא-עם-הוא) שמוע, זכור תזכור(את-היא-זכור). By this device we understand Ishaiah's words as 'conceiving it (הוא) and uttering it (הוא)', namely the slander. In שבור(עו-עב-הוא-ער) and שבייר(עו-עב-היא-ער) the change of tone between שבור and שבייר is designed to emphasize and accentuate the last word of a sentence devoid of punctuation marks.

In the colloquial שובר(עו-עב-הוא-ער) the prefixed ת is not an indicator of future action, but rather an emphatic, direct and confrontational אתה. Such a direct אתה is found in the command לא תעשה(אתה-עשה). A repeating את may be used to put rhyme into a close (סמוכה) doublet as in תות(חיה-את)-דעת(דע-את), בבת(בא-בא-את)-אחת(הך-את). Such hard stoppage is also effective in the separation of two vowels as in מערת(מעה-את) המכילה(היא-מכילה), קרית(קריה-את) יערים, or in the unusual שמחת(שמחה-את) בקציר(בא-קציר). A string of אתה, את, may be deployed for poetic effect in elevated style as this:—

מאת(עם-היא-את) יהוה היתה(חיה-אתה) זאת(זו-את) היא נפלא(נפלאה-את) בעינינו. In the wishful statement תרם(אתה-ער-הוא-עם) יך-על-צריך, the structure תרם is a compromise between תרום(אתה-ער-הוא-עם) and תרים(אתה-ער-הוא-עם). Also, the pronoun אני may be repeated for emphasis, as in בכני(ברך-אני) גם-אני.

Yet, while צבע is a פעל form and means 'he painted,' צבע, with no added personal pronouns, is now chosen to designate 'a painter.' Still, a builder is בנאי(בנה-היא), namely one who היא builds, and a man of authority is פקיד(עך-גע-היא-עד), while a shepherd is רועה(ער-הוא-היא).

The imperative form of עבד in the פעל construct is עבוד(עב-הוא-עד) in the masculine and עבדי(עבדי) in the feminine. The corresponding plural form is עבדו, which is chosen over עבדו, they worked, to avoid an obvious grammatical collision. The primitive form וכתב(בא-היא-כתב), and he wrote, is also found alongside the more elaborate עב(עו-הוא-עב).

The פעל (or פעל) construction is of the form ׀-היא-ם-היא-ם, in which one היא stands for the agent apparently causing the action and the other היא for the agent intended to experience its

results. The insertion of **היא** sometimes profoundly changes the causal relationships implied in the cumulated verb, and at other times it acts merely as an embellishment. For example, there is little concrete difference between the **פָּעַל** form **הוא שָׁבַר**, 'he broke (a thing),' and the **פָּעַל** form **הוא שָׁבַר את עצמו**, 'he broke himself.' The longer passive form, **שָׁבַר(עו-היא-עב-היא-ער)**, 'he broke it.' The longer passive form, **הוא שָׁבַר את עצמו**, is used for 'he broke himself.' But **גָּדַל(ג-ע-עד-על)** is passive and means 'he grew' or 'he is grown up,' whereas **גָּדַל(ג-ע-היא-ער-היא-על)** is active and means 'he caused him (it) to grow.' The **פָּעַל** construct is now used to impart a new shade of meaning to a root, as in **לָכַד(על-הק-ער)**, he captured, he gained, versus **לָכַד(על-היא-ג-ע-היא-ער)**, he unified; or **הָשִׁב**, he thought, he imagined, he conceived, versus **הָשִׁב**, he computed, he evaluated. Another example of a verb split into meanings differentiated by this device is the root **דַּבַּר**, which in the **פָּעַל** form, **דִּבֶּר**, means 'he spoke,' 'he hacked his vocal stream,' but in the **הִפְעִיל** form, **הִדְבִּיר**, means 'he conquered,' 'he vanquished,' 'he hacked and piled up (הִדְבִּיר) his enemies.'

Hebrew often sacrifices rigid grammatical structure in favor of phonetic grace as long as meaning remains unaffected, and so it uses **שָׁלַח** or **צִוָּה** instead of **שָׁלַח** or **צִוָּה**. This happens also in **לָמַד**, he taught, from which **לָמַדוּ(למ-הוא)**, he taught him, is derived, instead of **לָמַד**.

The **הִפְעִיל** construction is of the form **היא-ם-היא-ם-היא-ם**, still using **היא** and **היא** to stand for the agent causing the action and the agent bearing its results. In roots containing only two fundamental concepts with a median **הוא**, the **הִפְעִיל** form is more convenient than the **פָּעַל**, **היא-ם-היא-ם-היא-ם** form. For example, **הִקְיָם(היא-ג-ע-היא-עם)**, he set him up, from the root **קָיַם**; **הִרְיָם(היא-ער-היא-עם)**, he carried him up, from the root **רָיַם**; **הִגִּיב**, from the root **גָּיַב**; **הִשִּׁיב**, from the root **שָׁיַב**; and **הִעִיר**, from the root **עָרַר**. A median **היא** is, however, doubled in the **פָּעַל** form, and we have **קָיַם(ג-ע-היא-היא-היא-עם)**, he maintained, from the root **קָיַם**; **טָיַב** from the root **טָיַב**; **טָיַח** from the root **טָיַח**; **צָיַן** from the root **צָיַן**; and **צָיַן** from the root **צָיַן**.

Differences in verbal meaning can be achieved by the slight change of **הִפְעִיל** into **הִפְעִיל**, as in **הִנִּיחַ**, he relented, versus **הִנִּיחַ**, he put down; **הִלִּין**, he put up for the night, versus **הִלִּין**, he complained, he pestered.

For the sake of vocal emphasis **הִקְיָם** is augmented as **הִקְיָמְתִּי**, not **הִקְיָמְתִּי**.

In its effort to produce agreeable vocal articulations and to avoid grammatical collisions, Hebrew prefers the augmented forms **הִכְתִּיבו(היא-הק-ער-היא-עב)**, he dictated, and **הִכְתִּבוּ(היא-כתב-אנו)**, we dictated, and **הִכְתִּבוּ(היא-הק-ער-היא-עב-הוא)**, they dictated, with the pronoun **הוא** in the latter, being short for the plural **הם**. Such also is the imperative structure **שָׁמְרוּ(עו-היא-עם-ער-הוא)**, you guard, in which the last **ו** is short for **הוא**, standing again as a marker of the plural **הם**. By the device of pronominal agglutination we have the constructions **שָׁמְרוּהוּ(שמרו-הוא)**, which is the imperative 'you (plural) guard him'; **שָׁמְרוּם(שמרו-הם)**, which is the imperative 'you (plural) guard them'; and **יִשְׁמְרֵם(היא-שמר-הם)**, 'he will guard them.'

We also have **שָׁמַן**, 'he oiled,' and **הִשְׁמִין**, 'he became fat,' not **הִשְׁמִין**, because of the presumption that gaining weight is essentially an involuntary act. Accordingly, use of the form **הִזְקִין** is more appropriate than the form **הִזְקִין**. For 'fattened' or 'caused to be fat,' Hebrew employs the **פָּעַל** form **פָּטַם(ער-היא-עו-היא-עם)** of the root **פָּטַם(ער-היא-עו-היא-עם)**.

The **פָּעַל** construction is of the form **הוא-ם-הוא-ם**, which is possibly a contracted form of the repeating **הוא-הוא-הוא-ם-הוא-ם**. In this structure, the second **הוא** refers to the person causing the action and the first **הוא** to the person receiving it. **פָּעַל**, in this sense, is the reverse of **פָּעַל**. The construction **הִבְרִיחו(הק-הוא-בא-ער)** means 'he (or it) was caused (by another) to be connected.' Similarly, **הִבְרִיחו** means 'he was rendered important' or 'he was given homage.'

The presence of any of the gutturals **א, ה, ח, ע, ר** causes euphonic changes in the pronunciation of the personal pronoun indicators that exist in the root. Whereas the **פָּעַל** structure of the root **גָּרַשׁ** is **גָּרַשׁ(ג-ע-ער-עו)**, the **פָּעַל** structure of the root **כָּבַד** is **כָּבַד(ג-ע-הוא-עב-ער)**. In the **פָּעַל** structure, Hebrew softens the **כָּבַד** form into a **גָּרַשׁ** form. In the **קל** structure, the form **כָּתַבְתֶּם(כתב-אתם)**, 'you have written,' turns into **עֲבַדְתֶּם**, 'you have worked,' instead of the awkward **עֲבַדְתֶּם**. Similarly, whereas for **שמר** we use the form **אֲשַׁמֵּר**, for **שאל** and **שחט** we use the forms **אֲשַׁאֵל** and **אֲשַׁחֵט**. Yet, we use the form **אֲשַׂרְף(אני-ער-הוא-ער)**, 'I shall burn it,' with the personal pronoun **הוא** standing for the object set ablaze. Also, instead of the form **אֲחַרְד**, 'I shall hasten myself,' Hebrew prefers the form **אֲאַגֵּד**, 'I shall collect it.'

The הפעל construction is of the form הוא-ם-ם, with the prefixed הוא referring to the receiver of the action. הפעל is better suited than פעל to handle roots composed of only two, or even one, fundamental concept. Such is the case in הוקם(הוא-גע-עם), 'he (or it) was established,' 'he (or it) was imported,' 'he (or it) was carried away,' הפע(הוא-זע), 'he (or it) was beaten,' 'he was hit,' 'he was dealt a blow,' הונח(הוא-נע-הך), 'he (or it) was put down,' or 'he was laid down,' הומת(הוא-עם-עו), 'he was put to death,' and הובן(הוא-עב-נע), 'he was understood.'

The fundamental concept עם prefixed to a modified verb, imparts to it an adverbial sense. Thus, while השלים(הוא-על-על-היא-עם), is 'he completed it,' השלים(הוא-שלם), is 'it was completed,' משלים(עם-הוא-שלם) is 'it is complete.'

The הפעל construction is of the form אני-ם-ם, in which אני implies 'myself,' 'yourself,' 'himself,' 'oneself,' and so on. Some examples are: נמלט, 'he saved himself by escaping,' 'he extricated himself,' נלחם, 'he himself fought,' נרדם, 'he fell asleep by himself,' נבהל, 'he got scared,' נזכר, 'he remembered by himself,' נכנס, 'he came in,' 'he carried himself in,' and יקנו, 'they themselves will be bought.'

An initial גי, short for (אני-נע-היא), may also mean 'he is' or 'it is,' as in:—

נמצא(אני-מצא), נפצע(אני-פצע), נרצח(אני-רצח),

in place of the spurned:—

המצא(היא-מצא), הפצע(היא-פצע), הרצח(היא-רצח).

It is interesting to recall the opposites of state:—

נמלט/נמרט, נרדם/נשדם, נלחם/נרחם, נבהל/נבהר, נכנס/נכרס, הוקם/הורם-הוקר, שבר/שבץ-שביל.

The הפעל construction may refer to a past action, as in נשמר, or to an ongoing action, as in נשמך, distinguished only visually by ך versus ך. In future tense constructions, the pronoun ך, short for אני, changes into י, short for היא, and ת, short for the obsolete pronoun אתי, as in:—

הוא ישמר(היא-עו-עם-היא-ער), היא תשמר(את-היא-עו-עם-היא-ער), אתה תשמר(את-היא-עו-עם-היא-ער), את תשמרי(את-היא-שמר-היא), אתם תשמרו(את-היא-שמר-הוא), הן תשמרנה(את-היא-שמר-נע-היא).

But while תשמרי, 'you will be guarded,' is הפעל, תשמרי, 'you will guard,' is a קל construction.

The הפעל verb construction is of the form היא-את-ם-היא-ם. It contains the pronominal chain היא-את-היא-היא-את-היא, 'he strengthened himself,' which can also be rendered עצמו (הוקה-עו-גע) 'himself,' which can also be used in cases of reflexive action involving others, such as התקבל, 'he caused himself to be received by others,' התחתן, 'he got married,' התאלמן, 'he was caused by fate to become a widower.' The הפעיל and הפעל forms of the root שלם are שלם, 'he paid,' השלים, 'he completed,' and השתלם, 'he improved himself.' Also, השתקע means 'he settled himself,' but נשקע means 'he sunk.'

These are the seven paradigmatic verbal constructions. Hebrew found them sufficient and did not deem it necessary to add more—say, a פעיל form, a תפעל form, a תפעל form, a הפעל form, or a פגעל form.

### *Pronominal suffixation in verbs*

Personal pronouns, called in Hebrew הפעיל, may be affixed to an augmented or conjugated verb to further relate the expressed act, already including its perpetrators, to its beneficiaries.

In פעל:—

ענני(ענה-אני), (הוא) ענה לי, he answered me  
 קנני(קנה-אני), (הוא) קנה אותי, he bought me  
 שמרני(שמר-אני), (הוא) שמר אותי, he guarded me  
 שמרתני(שמר-אתה-אני), שמרת אותי, you (singular) guarded me  
 שמרני(שמר-הוא-אני), הם (הוא) שמרו אותי, they guarded me  
 שמרתך(שמר-אתי-כה), אני (אתי) שמרת אותך(הוא-את-כה), I guarded you  
 שמרתיה(שמר-אתי-היא), אני (אתי) שמרת אותה (היא), I guarded her  
 שמרתכם(שמר-אתי-אכם), אני (אתי) שמרת אתכם(את-אך-הם), I guarded you (plural)

שְׁמַרְנוּם (שמר-אנו-הם), אנו שמרנו אותם (הם),  
we guarded you (plural) (שמר-אנו-אכם), אנו שמרנו אתכם (את-אכם),

In פָּעַל:—

בְּקָשְׁנִי (עב-היא-גע-עז-אני), הוא (היא) בְּקָשׂ אותי (אני),

In הִפְעִיל:—

הִשְׁלִיכְנִי (היא-עז-על-היא-הך-אני), הוא השליך אותי (אני),  
הִשְׁלִיכְנוּ (היא-עז-על-היא-הך-את-אנו), היא השליכה אותנו,

In שְׁמַרְנוּם (שמר-אנו-אכם), the pronoun אנו marks the perpetrators of the act שמר, while the pronoun אכם marks the beneficiaries of this act.

A dimmed pronunciation of the personal pronouns היא and הוא in the inflected verb results in such close calls as הִמְמַנּוּ, 'he stunned us,' and הִמְמַנּוּ, 'we stunned.'

Additional prefixed indicatives such as -ךְ and -לְ are useful: לְשַׁמְרֵנִי (על-שמר-היא-אני), 'to preserve me,' בְּשֹׁמְרוֹ (בא-שמר-הוא), 'as he was guarding.' But in this way we may get such heavyweights as וְלִכְשֶׁנְּפָגְשְׁכֶם (עב-על-היא-הך-עז-נע-עף-גע-היא-עז-אכם), 'when it comes to pass that we will bring you together' or וְלִכְשֶׁנְּצוּרְתֵיכֶם, 'and when your (plural) trumpets.'

## Hebrew and the Indo-European languages: The connection and the separation

There is evidence implying that English, like the rest of the Indo-European languages, once had a distinct root system. It is inconceivable that the store of English words, being so vast, did not arise from a small limited pool of a few concise words having concrete meaning. It is in the nature of things that development moves from the simple to the complex, from the concrete to the abstract, and from the base to the sublime. Mankind has certainly made astounding strides in its cultural development in the last five thousand years, suggesting that there is, indeed, sense and destiny in the human experience.

Social instincts, a developed vocal system, and high intelligence drive man to speak. How and when man 'started' to speak is pure speculation. Still, it pleases us to fancy an ancient rudimentary language with very few natural sound bites, among them, say, the sound *ba*, consisting of the stoppage *b* followed by the air-letting *a*. It is the essence of language that this sound have a meaning. In Hebrew, the meaning of בא (like הופיע) is 'came,' 'appeared,' 'was of substance,' or 'acquired bulk,' possibly in analogy with the sound itself being puffed out. Whenever somebody came into the house (or the cave or the shade of a tree), he would be announced by the restrained and distinctly human exclamation *ba* (in contrast with the wild, uncontrolled shrieks and howls that would greet a snake). As a child I myself used to exclaim "בא בא", 'Dad is home!'

Once *ba* became linguistically significant, at least in the very concrete sense, its usage could be generalized allegorically. The idea of 'come' could be applied to everything that is here now, but was not here before. Our hypothetical, utterly practical, man, אדם-הקדמון, could point to his children and exclaim "ba," he could point to the sprouting plants in his garden and say "ba," or he could point to water bubbling from the ground and say again "ba." And in every instance he would have been well understood, as he knew, by his intelligent and experienced listeners.

But man is inventive and resourceful and could not be satisfied with a *ba-ba* language, unless he happened to be fond of such delicate intonations as *ba*, *baa*, *baaa*. So, he resorted at first to the slight variations of *ba*: *fa*, *pa*, *va*, and *wa*. In this way a grown-up became אב, later specifically a father. A corpulent cask or barrel became אויב. A cloud (a cleat, a clod, or a clot of vapor) became עב. A reflection coming off the surface of still water became (בא-הוא-היא) בבואה. A peg became וו. Swelling desire (Latin, *aveo*) became אוה (עב-היא). A flying bird became עוף. The protruding thing coming off the face became אף, nose. 'Mouth' became פה. 'Here' became פה. The lid covering the eyes became (עף-עף) עפעף. The bleating sound coming out of the mouth of the lamb became (עף-היא) פעה, the baking of bread became (עף-היא) אפה, a pile of grain became

אִיפָה, boiling hatred became אִיבָה, a long lock of hair became פִּאָה (עַף-הִיא-הִיא), a specially pleasing appearance became יוֹפִי (עוֹ-הוּא-עַף-הִיא) (compare Latin, *venia*, *venus*, *bonus*, and *venio*), and one's own house became בַּיִת (בֵּית-בֵּית-הוּא-אֵת). Later on, his son became בֶּן (בֶּן-בֵּית-הוּא), his own daughter became בַּת (בֵּית-בֵּית-הוּא-אֵת), a beautiful woman became יָפִיָּה (עוֹ-עַף-הִיא) or maybe even בְּיָפִיָּה (עוֹ-עַף-הוּא-הִיא). A swollen, or puffed up, boil on his skin became בּוֹעֵה (עוֹ-עַף-הוּא-הִיא) or אֲבִיבָה (עוֹ-עַף-הוּא-הִיא). His garden plants became יוֹבֵל (עוֹ-עַף-הוּא-הִיא) or יוֹבֵל (עוֹ-עַף-הוּא-הִיא) or תְּבוּאָה (אֵת-הוּא-בֵּית-הוּא) or אֲבִיבָה (עוֹ-עַף-הוּא-הִיא) or אֲבִיבָה (עוֹ-עַף-הוּא-הִיא). His water source became מְבוּעַת (עוֹ-עַף-הוּא-הִיא) or מְבוּעַת (עוֹ-עַף-הוּא-הִיא) or אֲבִיבָה (עוֹ-עַף-הוּא-הִיא) or possibly יוֹבֵל (עוֹ-עַף-הוּא-הִיא) (hence the names of the rivers Aube and Avon). This is how language develops, nearly instantaneously, and by consensus. This is also why language is predictable, predestined, and inevitable.

Man has good control over his sound-producing organs, and he did not articulate only “ba.” He also shouted “ga.” In Hebrew, גַּע means ‘to extend,’ ‘to reach,’ ‘to stick out,’ ‘to exit,’ or ‘to exist’ (to exit and go into the world). So, גָּאָה (גַּע-הִיא) is ‘to elevate,’ גָּעָה (גַּע-הִיא) is ‘to bellow,’ ‘to bawl,’ קָאָה (גַּע-הִיא) is ‘to vomit,’ קוֹעַנָה (גַּע-הִיא) is ‘a nobleman,’ מַעֲקָה (עַם-גַּע-הִיא) is ‘a fence,’ ‘a wall,’ גַּגְגַּע (עַם) is ‘a roof’ (that is, like a rope, something made of ripped or reaped material), מוֹעֲקָה (עַם-הוּא-גַּע-הִיא) is ‘depression,’ דְּכָאוֹן (גַּע-הִיא) is ‘a valley,’ עֵקָה (הוּא-גַּע-הִיא) is ‘a cake,’ אַח (גַּע-הִיא) is ‘longing,’ קַעֲקַע (גַּע-הִיא) is ‘tattoo scar,’ and אַח is ‘a (big) brother.’

In the same way man fixed the meaning of the other five fundamental concepts עַם, עַל, עַם, עוֹ, רַע, גַּע, from which he constructed his entire language.

In his desire to vocally communicate with his kin, our imagined man was naturally driven to emit his whole repertoire of distinct primary sounds *ba*, *ga*, *za*, *la*, *ma*, *na*, and *ra*, with their slight tonal alterations. When he fell upon the idea of using them as immutable vocal markers, he inevitably referred them to the most fundamental concepts of his material existence—those of issue, of being, of existence, or of appearance, in such variations as *be*, *we*, *if*, *is*, *as*, *it*, *at*, *to*, *co-*, *all*, *am*, *on*, and *are*.

Our hypothetical man, on the verge of discovering language, reserved the rolling sound *ar-ra*, Hebrew עַר-רַע, for whatever is varied and dispersed (or corrupt, ripped, rotten, crumbling, tottering, broken, cracked, rived, breached, ruptured, ridged, or corrugated.)

Man was now bursting with thoughts and ideas he wanted to share with his fellows, but *ba*, *ga*, *sa*, *la*, *ma*, *na*, and *ra* were not enough, even with their phonetic variants. So, to accommodate the flood of words on the tip of his tongue, he resorted to combinations. At first, he distinctly pronounced גַּע-עַב, *ga-av*, when referring to an extended and elevated object, but then he compacted them into the congealed, גַּב, *gav*, ‘back.’ Elsewhere, he may have tightened the two primary sounds *ba-ag* into the single word *big*, which was later specialized into *bake*, *bag*, *ba(n)g*, *beak*, *buck*, *pig*, *beech*, *fig*, *fog*, *fake*, and so on. Once גַּב became the phonetic designation for *back*, kindred words readily followed: גִּבְעָה, hill, כּוֹבֵעַ, hat, עֵקֶב, heel, קֶבֶה, stomach, קוֹ, line, גּוּף, body, חוֹף, beach (the back or ba(n)k of the sea) and they were easily accepted and were well understood (no dictionary nor academy!). Next came the more abstract: כָּאֵב, pain, עָגַב, to desire, חוֹב, burden, קוּהַ, to hope (namely, to heap, to heave, and to have), חוּיָה, experience, הֵבָה, let us have, אֶהְבֵּה, love.

From גַּע-עַל our ancient, intelligent and inventive man produced גַּל, wave; from הֵךְ-עַל he produced חוֹל, sand; from זֶע-עַל he produced תֵּל, hill, mound; from גַּע-עַם he produced קוּם, stand up; from עַל-עַב he produced לִבְיָא, lion; from גַּע-עַם he produced גַּם, also; from עַם-עוֹ he produced מוֹץ, chaff; from עַף-עַר he produced פָּר, ox; from עַד-עַר he produced עֵדָר, herd; and from גַּע-עַר he produced גוּר, cub.

Observing the lofty, buxom (big-some, box-some, fox-same), and beautiful camel our man exclaimed in admiration, גַּע-עַם-עַל, which readily hardened into גַּמַּל. The abstract חַמְלָה (עַל-עַם-הִיא), to have mercy, came later, as did הַמְלִיחַ, to create a commotion, and גַּמַּל in the sense of ‘to pay back’ or ‘to reward.’

By combining three fundamental concepts into one congealed word, our man had all the basic roots he would ever need. Then, he added personal pronouns to the roots and, presto, language was ready for general use.

Hebrew permanently settled into this form. No Hebrew root contains empty sounds void of sense and, consequently, no Hebrew root, nor any of its parts, is of a clanking hissing, imitative

nature.

For some reason, the inventive and restless Indo-Europeans kept tinkering with both the word structure and the grammar of their language, starting in remote times and ending in the newest language known as English. As language matured and memory of its origin dimmed, the Indo-Europeans gave it a fresh, practical look. The decomposition of a word into its prime components became irrelevant, and the insertion of personal pronouns into the root was considered cumbersome or was misunderstood. These talented and creative people initiated a linguistic revolution that ended in the separation of the word structure from the grammar, making it by degrees less inflectional (but they also reached a point where they had to resort to the use of apostrophes). Ultimately, English has performed the heroic, twin feats of abolishing gender and nearly relieving the language of inflections. Instead of saying ביתי, the English speaker says 'my house.' Instead of saying אֶלֶךְ, the English speaker says 'I shall go,' and instead of saying אָכַלְתִּי, the English speaker says 'I ate' or 'I have eaten' (existentially meaning I have food). Instead of saying תִּרְאוּ, the English speaker says 'you (plural) will be seen.' A few thousand roots were thereby transformed into tens of thousands of self-contained words.

The extent to which the Indo-European word became isolated is demonstrated by *man*. No metaphor is shown for *man*, and for the sake of linguistic safety, its root is given in etymological dictionaries only as *ma*, Hebrew מַע. It is conceivable that the sound 'ma' in 'man' is the same 'mo' as in *mother*, *mole*, *more* and *most*, and that *man* implicitly combines *me* and *one*. With a link between the English word *man* and the Latin word *magnus*, we could metaphorically connect *man* to *moon* and *mane*, in the same way that we connect in Hebrew אָדָם (man) to אֲדָמָה (earth) and eventually to עִצְמוּתָה (solidity).

Once the concept and function of the root was abandoned and forgotten in the languages of the West, hard consonants were liberally added to roots to make pronunciation more emphatic, such as a hissing *s* before *c*, *l*, *n*, *p*, *q*, *t* and *w*. Other consonants were softened, as *g* into *y* and *l* into *i*. The *m* and *n* sounds were liberally inserted for bon ton, and words were otherwise left littered with obsolete grammatical debris. Reconstruction of the entire Indo-European root system is an elusive undertaking.

Yet, not only the root, but also its primary components, can often be detected in many Indo-European words. In particular, the sound *ar* still indicates separation, to wit: *acquire*, *argue*, *arid*, *ark*, *art*, *bear*, *bore*, *border*, *bark*, *break*, *bran*, *brief*, *bristle*, *burn*, *curb*, *carve*, *curve*, *carpet*, *charge*, *corrode*, *corrugate*, *crag*, *cross*, *crimp*, *cruise*, *crumb*, *crush*, *cairn*, *crawl*, *crop*, *crude*, *curl*, *dare*, *dear*, *derelict*, *desert*, *destroy*, *disperse*, *drive*, *dross*, *dry*, *err*, *far*, *fear*, *fork*, *frame*, *fracture*, *freak*, *fret*, *gear group*, *grate*, *grow*, *great*, *grime*, *grind*, *herb*, *herd*, *large*, *mar*, *mark*, *more*, *murder*, *pare*, *procure*, *raw*, *row*, *rig*, *rip*, *rug*, *rugged*, *rage*, *rake*, *rack*, *rend*, *rest*, *rice*, *rise*, *rib*, *ribbon*, *read*, *rid*, *ridge*, *ride*, *rig*, *rich*, *rock*, *rough*, *root*, *rub*, *rubble*, *rake*, *run*, *reap*, *rest*, *rust*, *room*, *sarcasm*, *scar*, *score*, *scratch*, *scatter*, *series*, *shear*, *shard*, *sore*, *smear*, *spar*, *spore*, *spring*, *strew*, *tar*, *tear*, *thorn*, *harsh*, *thread*, *thrive*, *throw*, *trap*, *urge*, *various*, *verge*, *war*, *wear*, *wrap*, *wrest*, and *wrong*.

It is etymologically interesting to retrace the English word *hole* to the Greek word *κοίλος* (*koilos*). Looking at it in its root form *hl*, Hebrew הל(הק-על), logically places the word in the conceptual הל family of: *hill*, *heel*, *hall*, *heal*, and *holy*; then in the family circle of: *call*, *collect*, *coil*, *kill*, *kilt*, *cold*, *hold*, *gold*, *gall*, *gale*, and *guilt*—all words having at their base the same concrete meaning.

### Notational Remark

In the following dictionary, an unmarked Hebrew root such as שלם indicates that the root is found in the Hebrew Bible, the תנך. An asterisk, as in \*לִטַף, points to a root not found in the תנך. The null notation לִבֵּן indicates that the root is not in use.