

# The Atomic-Axiomatic Structure of Language

## Hebrew etymology

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

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

The etymology of Hebrew endeavors to uncover and reveal the inner sense of the language and to expose the linguistic devices by which the root system of the language refers to basic acts and states of the physical world as we see it and interact with it.

Each root of the Hebrew language is composed of vocal or literal markers referring to the most elementary experiences of our material existence. These few markers stand for the fundamental concepts—the conceptual atomic particles—that combine to give language its 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 fundamental concepts are the building blocks of meaning, and each root of the language is compiled of at least one such concept.

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, ז, ט, י, ס, צ, ץ, ש, ת	<i>c, d, i, j, s, t, z</i>
על	<i>al-la</i>	ל	<i>l</i>
עם	<i>am-ma</i>	ם	<i>m</i>
נע	<i>na</i>	נ, ן	<i>n</i>
ער-רע	<i>ar-ra</i>	ר	<i>r</i>

The fundamental concept *av-af-ba*, עב-עף-בא, is a constituent element of the English words: *up, be, eve, of, off, if, ebb, have, heave, 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-הך, is the sole constituent element of the English words: *go, gig, huge, age, oak, ache, ague, cake, each, cue, 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, ooze, adz*; the conceptual common denominator of which is 'to be extended' in both the metaphorical and literal sense. The fundamental concept *al-la*, על-לע, is a constituent element of the English words: *all, ale, ell, ill, tall*. The fundamental concept *am-ma*, עמ, is a constituent element of the English words: *am, me, come, sum, among*; the conceptual common denominator of which is 'to possess an accumulated mass or be of essence. The fundamental concept *na*, נע, is the sole constituent element of the English words: *an, in, on, one, no, new*. The fundamental concept *ar-ra*, ער-רע, is a constituent element of the English words: *are, err, or, re-, tear, rend, rip*.

The fundamental concept *av-af-ba*, עב-עף-בא, of heaving and being, is represented by the Hebrew letters פ, ו, ב, which correspond to the English letters *b, v, w, f, p*. 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 *עב-עף-בא* has been vocally and literally augmented in Hebrew to form the words: —

עָבָה, עָוָה, (עָבָה), הַעִיב, בָּעָה, פָּעַע, אָפָה (כלומר עָבָה הַבְצֵק לַלֶּחֶם), בִּוּעָה, אִיבָה (כלומר הַעֲבָה שֶׁל אִיּוֹם), אָוָה (כלומר עֲבוּי הַרְצוֹן), יוֹפִי (כלומר הוֹפְעֵת הַאֲבָרִים וְעִיבוּיִים), אָב, בָּן, בָּת, בִּוּעָה, פִּוּעָה, אֲבַעְבוּעָה, אָב, אֲבִיב (כלומר זֶמֶן בָּא וְהַתְעַבּוּת הַתְּבוּאָה), בִּיב, אוֹב (כלומר מִיֵּן כְּלִי עָבָה), עוֹף, אָף, פָּה, פָּאָה, עַפְעָף, בָּבָה (כלומר בִּוּעַת הַעֵיף), בְּבוּאָה, וּ, אוֹפִי (כלומר עוֹבֵי שֶׁל תְּכוּנוֹת).

יָפוּ (יָפָה) city (יפה) above the sea, and the names of the noble (נָבֵל), nubile, and nebulous (נָפִיל) mountains נוב and נבו, which the French call *beaumont*.

The fundamental concept *ga-ag*, גע-עג, of gaining and aging, is represented by the Hebrew letters ק, ה, ח, ג, which correspond to the English letters *c, g, h, k, 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: —

גָּאָה, קָאָה, גַּעַע, גַּעְעָה, קַעְעָה, אָתָה, הָכָה, הִגָּה (כלומר הָכָה בְּלִשׁוֹנוֹ וְהִקְיָא דְּבָרִים אוֹ הוֹקִיעַ דְּבָרִים בְּדַעְתּוֹ), פִּי (כלומר עוֹגַת בֶּשֶׂר מִכְּאִיבָה), קִיק (כלומר שִׁיחַ עֵנֶק-עֵנֶק), אָה, אָחַ, אָחוּ, קוּעַ, פָּחַ, פִּתַּח (כלומר אָחוּי גוּאָה), גִּיחַה, גָּג, כַּעַךְ, חָכָה, אָגָה, עָגָה, עָקָה, מַעְקָה, תַּעְקָה, עָפוּ (כלומר הַעִיר הַגּוּאָה עַל עוֹגַת אוֹ חוּג אֲדַמְתּוֹ), גִּיָּא, גַּחַךְ, כָּאָה, חַכְךָ, חַקְךָ, חַח, חוּחַ, חָךְ, חִיק, כָּהָה, קָהָה, קַעְעָה, וְגַם גָּהָה (כלומר גָּאָה וְגַח כּוּחוֹ בְּחוּג חִיקָן).

The fundamental concept *az-za*, עז-זע, of exiting and existing, is represented by the Hebrew letters ז, ט, י, ס, צ, ז, which correspond to the English letters *c, d, j, s, t, 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: —

אִיָּה, דָּאָה, דִּיָּה, דִּישׁוֹן, יִתוּשׁ, עוֹ, עִיט, סִיס, סִיט, אִישׁ, עֵשׂ, עִישׁ, עֵשׂוֹר, צִי, צִאָן, שָׂה, תָּאוּ, אֲתוֹן (כלומר הַבְּהֵמָה הָאֲדוּמִית הָאִיתְנָה), תִּישׁ.

In the Greek word *ζεω*, as in zoology, the study of animals, the letter ζ corresponding to the Hebrew letter ז, appears to signify this same concept.

The fundamental concept *עז-זע* in תִּישׁ, goat, is not an indication of the swiftness (תְּזוּזָה) of the animal or its vigor (תִּישִׁיהַ) but rather the extension of its body, as in מזוּזָה, a door post, and טִיס, flight.

From the fundamental concept *עז-זע* we also have the names of protruding or projecting body parts: —

שָׁן, אֲזוֹן, יָד, דָּד, שֵׁד, עֵטִין, עֵין, אִישׁוֹן, אֲצַבַּע, צַדַּע, שֵׁת, עֵץ, זֵי, צִיץ, עֲצִיץ, עֵסִיס, סֵד, יָתֵד, שׁוּט, דְּשֵׁא, נָטַע, סָנָה, תְּאֲנָה, שְׁטָה, צָאֵל, זֵית, שִׁית, תּוֹת, אֲסֵד, דּוּדָא, עֲדָשׁ, שְׁעוּעִית,

the names of the numbers: —

שְׁנַיִם, שְׁלוֹשׁ, חֲמֵשׁ, שֵׁשׁ, שֶׁבַע, שְׁמוֹנֶה, תְּשַׁע, עָשָׂר,

references to fire and smoke: —

הַצֵּתָה (כלומר הוֹצֵאת וְהַסֵּטָה הָאֵשׁ), אָד (כלומר הַהֶבֶל הַדּוֹאָה), אוֹד, אֵשׁ (כלומר אֵץ יוֹצֵאת בְּלִהְבוּתִיהָ). The fundamental concept *az-za*, עז-זע, appears in the particle אַז, the demonstrative pronouns זֶה, זֹה (עז-הוא), זֹאת (עז-הוא-את) and also in: —

יָדַע, יֵשַׁע, עוֹז, אֲטַט, אֲשַׁשׁ, יֵשֶׁשׁ, אֲדַשׁ, יֵאֵשׁ, סַעַד, צַעַד, שְׁעַט, אֲסַא, שׁוּעַ, דּוּד, עֲדוּ, שְׁשׁוֹן, דִּיעָה, וְדוֹן, עֲשָׂה (כלומר הַעִיז וְהוֹצִיא לְאוֹר, וְתוֹצֵאתָ יֵשׁ(הִיא-עוֹ), בְּאֲנַגְלִית (is), אוֹת (כלומר מַעֲשֵׂה שֶׁל שְׁנוּי שֶׁהוּא סִימָן אוֹ צִיּוֹן לְהוֹרוֹת עַל דְּבַר), אַז (כלומר אֵץ לְצַאת וּלְצוּץ), זֶה (כלומר הַצֵּץ בְּעוֹז), זֹה, עֵת (כלומר אֵץ צַחַח), עֵט (כלומר עֵץ אוֹ צִיץ), אֵת (כלומר כְּלוֹמֵר עֵץ), עַד, וְד (כלומר בַּעַל עוֹז וְעֲדוּד), עַד, עוֹד, צַד (כלומר קִצְהָ צֵץ וְדוּאָה), אוּץ, אוֹת, אִיד, אֲסוֹן (כלומר עֲשׂוֹן שֶׁל דְּבַר רַע), שׁוּאָה (כלומר צוּאָה עוֹה צַחַח וּמִסִּיתָה הַכֵּל), אֲשַׁד, אֲשַׁשׁ, אֲתָא, אֲתָה,



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 נמר. 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.

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, Καδμῶς.) 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 all 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 ρ, and that the Greek letter ζ is exactly in the shape of the 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, ה, 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 ה.

One notes the similar aspect of the Latin letters I, J, Z, S, Y, T and the Hebrew letter י. Also the similarity between the Latin Capitals C and G, and their resemblance to the reflected Hebrew letter כ. Also the similarity between the roman D and the Greek Δ, which appears to be in the shape of a tent flap, דֶּלֶת. The Roman letter K is a ligatured IC.

### The trilateral root

Fundamental concepts are grouped and tied together to create the basic linguistic capsule, or conceptual cluster, known as the root—שרש, or פעל, in Hebrew. For example, the Hebrew verb גדל, to grow, is composed of the fundamental concepts גע, of aging, דע, 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-עו-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), זמר(עו-הך-ער), זמר(עו-עם-ער), חלף(הך-על-עף), חסד(הך-עו-עד), טפל(עו-עף-על), כלם(גע-על-עם), לטף(על-עו-עף), מרח(עם-ער-הך), נפח(נע-עף-הך), נשך(נע-עו-הך), סכן(עו-הך-נע), פרם(עף-ער-עם), צפר(עו-עף-ער), קרס(גע-ער-עו), רצח(ער-עו-הך), שנס(נע-נע-עו), תלם(עו-על-עם), תמך(עו-עם-הך).

A root consisting of three letters may be composed of three, two, or only one fundamental concept. The root חכך(הך-גע-הך), for example, contains only the fundamental concept עג-הך-גע. The same is true of the trilateral roots גחך(גע-הך-הך) and חקך(הך-גע-גע). The roots:—

סתת(נע-עו-עו), צדד(נע-עו-עו), שדד(נע-עד-עד), שדד(נע-עד-עד), שטט(נע-עו-ז), שתת(נע-עו-עו), תסס(נע-עו-עו), תשש(נע-עו-עו),

are composed of only one fundamental concept: עד-נע-עו, of stoutness and size. The root בלל(עב-על-על) is composed of the fundamental concept עב-עף, of abundance, and the repeating fundamental concept על, of loftiness. The root גלח(גע-על-הך) is composed of the repeating fundamental concept גע-הך of cohesion plus the fundamental concept על. The root זבד(נע-עף-ער) is composed of the repeating fundamental concept עב-עף plus the fundamental concept עב-עף. The root חכם(הך-הך-עם) is composed of the fundamental concept עם, of massivity, plus the repeating fundamental concept הך, of cohesion. The root נגן(נע-גע-נע) is composed of the repeating fundamental concept נע, of novelty, plus the fundamental concept גע, of coming or going. The root פרף(ער-עף-עף) is composed of the repeating fundamental concept עף plus the fundamental concept עף.

Whenever the fundamental concept ער-רע appears amongst the constituents of the root, it is an indication that the root alludes to aggregation or plurality, as in פּרָף, which means: to rend, to tear, to untangle, or to take apart. Notice that “combination” itself combines the fundamental concepts עו, נע, עב, עם, גע, but is devoid of the fundamental concept ער, of plurality. On the other hand, “correlation” does include the fundamental concept ער.

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:—

בצק/ברק, בצק/בצר, גדל/גדר, גדל/גרל, דגל/רגל, דגל/דגר, גמל/גרל, גמל/גמר, זהם/זרם, זמן/זמר, חדק/חרק, חדש/חוש, חסד/חסר, חסד/חרד, חכם/חרם, חכם/חכר, חתם/חתר, טפל/טפר, יחר/יחד, יתר/יחד, כלם/כרם, כתר/כתר, משח/מרח, נעם/נער, סכן/רכן, עדר/ערר, ערף/ערף, עקר/עקר, פחם/פרם, פטם/פרם, פטר/פטד, פקר/פקד, צמק/צמר, צפח/צפר, קלס/קרס, 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.

One way that Hebrew completes deficient roots, that is, roots consisting of only one or two fundamental concepts, and fulfills the canonical triliteral form requirement, is by inserting the neutral, or filler, letters א, ע, י. These letters have a purely vocal or visual function, and impart no additional conceptual meaning to the root. This device is used in the roots:—

אתא(עו-זע), ידע(עו-זע), ערף(עד-ער), אסף(עו-ער), עקץ(עג-עו), דאג(עד-עג), שאף(עו-ער), צעף(עו-ער), פעל(עף-על), בלע(עב-על), גלע(גע-על), כלא(גע-על), פלא(עף-על), פתע(עף-עו), כרע(גע-ער), קרע(גע-ער), קרטע(גע-ער-עו), טאטא(עו-עו), שעשע(עו-עו).

The letters ה, ו, י, ת also serve as abbreviations for the personal pronouns הוא, היא, היא, 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-הוא), the letter ת marks the personal pronoun את, but in אות(הוא-עו), a sign, and תאו(עו-הוא), a bull, the letter ת marks the fundamental concept עו-ער. Thus the significance of the letter ת is at times equivocal. For example, the root תרם, to donate, may be rendered תרם(עו-ער-עם), or תרם(את-ער-עם). The following are some roots augmented with the personal pronouns את, הוא, היא, to fulfill the triliteral form:

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

No Hebrew words consist of vowels only, which would render them 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 עו, rather than the personal pronoun היא. The tendency in Aramaic to vocally smudge sibilants, and thereby cause a decline in the conceptual quality of the word, has created such ‘aaa’ anomalies as אַע, a tree, or עַץ in Hebrew. To a lesser extent this may have happened in Hebrew as well—עַץ being possibly a softened form of עַץ or עַץ. Likewise, אֵי is possibly a softened form of הַי or עַי.

Occasionally, an inserted ו or ו is recognized as standing for a muted ב, as, for example, in זוד(עו-הוא-ער) and its cognate זוד(עו-ער).

A guttural ה in the first or second position within the root signifies the fundamental concept גע-הך, but the silent terminal ה appears to be an inert filler, like ע, א. Mostly, we interpret this terminal ה as signifying the personal pronoun היא. Hebrew also uses these terminal א, ע, 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 א, ע, ה to shift and refine 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), בהר(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(עו-הך-עם), שחם(עו-הך-עם); שהה(עו-הך-היא), שהה(עו-הך-היא); דחה(עד-הך-ער), סהר(עו-הך-ער), זכר(עו-הך-ער); להם(על-הך-עם), לחם(על-הך-עם); דהה(עד-הך-היא), דחה(עד-הך-ער).

הך-היא); מהה(עם-הך-היא), מחה(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-עה-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); הוה(הך-עד-היא), חדה(הך-עד-היא), הוה(הך-עו-היא), חסה(הך-עו-היא), חוה(הך-עו-היא), חתה(הך-עו-היא); היה(הך-עו-היא), חיה(הך-עו-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 also have the kindred pairs גבה-גבח, רוה-רוח, צוה-צוה, and more, in which the terminal ה does appear to be a vocally softened or visually altered ה, marking the fundamental concept גע-הך.

Hebrew also extensively uses the device of substituting into the root different letters representing the same fundamental concept 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-בתר, בהר-בהר, 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-טוה, טען-תאן, יגר-יהר-יחר-יקר, ירח-זרח, יפה-שפה, כלא-קלע, נפל-נבל-נול, נגר-נהר-נחר-נקר, נהם-נחם, סהר-סכר-זהר-זכר, פקע-בקע, פצע-בצע, פטר-פטר, פרך-פרח, פלח-בלח, צהר-צחר, צבר-צואר, צרח-צרך, קבר-כבר, קשר-כשר, קשט-קשת, קטף-כתף, קטב-כתב, קטל-כתל, קטם-כתם, רגם-רקם, רתם-רדם, רכב-רחף, רבך-רוח, 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 useful 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, a male—a conflict that can be resolved only contextually.

Conceivably, זכר, male, originally meant just a member, or scion, enclosed, סכור or בחור, פכור, יחור, נחור, in his family circle, and in this sense זכור is near in meaning to נחור. 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 being 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 ער in the root זקר indicates that Hebrew considers erection to be achieved through the aggregation of loose parts. Notice the presence of the fundamental concept ar, of separation, in erect and structure (originally meaning 'to heap,' 'to assemble'), as well as in its cognates strike, strict, strong, and stray.

The couplet of fundamental concepts זק(עו-גע) present in זקר, is the entire conceptual content of the root עוק 'to tie,' and also of the root זעק 'to collect'. The couplet (קריגע-ער) in זקר is the entire conceptual content of the root עקר 'to uproot,' and the root קער 'to hollow,' 'to engrave,' and the root קרע 'to rend'. The couplet (זר(עו-ער) in זקר is the entire conceptual content of the root אור 'to gird,' and the root זער 'to trifle,' and the root זרע 'to disperse,' 'to scatter'. The metaphorical relationship between סגר (סכר) 'to close, to grasp,' 'to clutch' and שכר '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 rented can be separated and rented.

### Degree of closeness of roots

Roots which 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, ה may be used interchangeably for the fundamental concept בא עפ-בא as in the pair ברר, פרר. Making such substitutions yields the following families of roots:—

ברר; פרר; גרר, הרר, חרר, קרר; דרר, זרר, סרר, צרר, שרר; רבב, רפף; רגג, רכך, רקק; רודד, רטט, רסט, רצץ, רשש; ברג, ברה, ברך, ברק, פרג, פרה, פרך, פרק; ברז, ברש, ברת, פרד, פרו, פרט, פרס, פרש, פרת; גרב, גרף, חרב, חרף, כרב; קרב; גרד, גרו, גרט, גרס, גרש, הרס, כרס, כרש, כרת, קרד, קרט, קרס, קרין, קרש; גרל, חרל; גרם, חרם, כרם; גרן, הרן, חרן, קרן; דרב, זרב, זרף, טרף, סרב, סרף, צרב, צרף, שרב, שרף, שרף; דרג, דרך, זרה, זרק, טרה, טרק, סרג, סרה, סרך, צרה, צרך, שרג, שרק, תרג; דרס, דרש, זרד, זרו, טרד,

טרט, טרש, ירד, ירט, ירש, סרד, סרט, סרס, שרד, שרד, שרין, שרת, תרד, תרין; מרג, מרח, מרן, מרק; מרד, מרט, מרס, מרין, 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, רמת; גרן, כנר, רגן, נגר; צרב, צבר, רצף, רבין, פרין, פצור; צרה, צחר, רצה, רחין, חרין, חצר; דרס, תשר, רטש, רשת, סדר, זרד; מרס, מסר, רמס, רוס, סמר, זרם; מרין, רמין, 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, ורו, מרס; ברד, חרד, שרד, מרד; ברך, פרח, פרו, פרם; פרף, פרק, פרין, פרם; פרף, חרף, צרף; ברג, חרג, שרג, מרג; גרב, גרף, חרב, חרף, זרב, זרף; גרב, כרך, גרו, גרל, גרם, גרן; פרם, גרם, צרם; רבק, רבין, רבל; קבר, גהר, קשר, כמר, כנר; קבר, צבר, נבר; רבד, רקד, רצד; רמס, רמת; גמר, סמר, נמר; גבר, גדר, גמר, כנר; בתר, כתר, סתר, נתר, נמר; רגן, רסן, רמין; בגר, חגר, סגר, מגר, נגר; בגר, בדר.

The last and most comprehensive category is of the roots in which any of the fundamental concepts נע, עב, עז, על, עם, 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 עב, נע, זע, וע, על, עם, 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 concrete, solid phenomena, and then as existing in a variety of 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 solid and the rare, the steadfast and rickety, the whole and the disintegrated. All it sees is essentially the duality of mass and space, as revealed to an observer looking at distinctly discernible objects. Indeed, there can be no notion of space without the observation of distinctly discernible objects, just as there can be no notion of time without the experience a succession of clearly defined events. Hebrew calls a moment in time (time, meaning the sameness in occurrences, or the synchronization (same-chronization) of simultaneous (same-ultaneous) events) עת, which is but a variant of the fundamental concept ער-רע, found in אָ, then, עוד, more, אָ, steam, אית, sign, עֵט, twig, עדה-עטה, covered, אֵיד, flame, עֵץ, tree, and יעד, target. All betokening *issue*, and being related to the English *is*, *it*, and *at*.

Space is observed at once, but the passing of time is manifested as an evolutionary record only—that is, as a string of remembered (re-mem-ber-ed) events sorted sequentially and stored serially in the order experienced, giving sense to temporal *before* and *after*; *near* and *far*, in analogy with the distance between material points in space. In English, *time* is related to *same* and *tumor*. The German word for time is *Zeit* related to the English word *tide*. ‘On time’ means ‘at the same point.’ Time is not a vector, only a mere moment; memory, however, is a vector of deposited and sorted layers of recollections. Notice that the statement ‘three times two’ means three repetitions of the same pair, and that the ‘multiplication of thee by two’ means three plies of the pair, or, for that matter, two plies of the triplet.

The root זמן, time, appearing first only in the book of קהלת, is but a variant of טמן, to conceal, to embed, שמן, to swell, and סמן, to symbolize, to materialize or to realize. It thus refers to isolated specific events (מאורעות) and occurrences (אירועים), embedded in the flow of life and is bereft therefore of the fundamental concept ער. On the other

hand, the root עבר, to pass, to transfer, which describes a process in time, contains the fundamental concept ער to signify the proceeding of the particular events and locations recorded in memory during the progress of passing—of being at different places at different times.

Close to the root עבר is the root עפר, to be pulverized, to grind into powder, to be in the state of particles of dirt. Related to עבר and עפר are:—

ברר, פור; גרר, חרר; דרר, סרר, צרר, שרר; מרר; עצר, אצר; עקר, אגר; עמר; ענר; סער, צער; קער; מער; נער; פרע, ברא, פרה; זרע, צרע, זרה; מרא,

all having to do with breaking, crushing, and disintegration.

Temporal duration is expressed in Hebrew by היה, a mere variant of היה, 'lived,' 'came into being,' consisting of the fundamental concept הך, of bulging or swelling into existence. For 'occurred,' Hebrew says קרה(גע-ער-היא), which is but a variant of קרע, to tear, to rip, signifying that a detached and separated occurrence is but a ripple or a tear upon the fabric of life. The fundamental concept ער so critical to the understanding of the true meaning of קרה and קרע is also present in occur and current, both derived from the Latin currere, to run, to be alert, to be brisk, corresponding precisely to the Hebrew root ער.

The fundamental concept ער is also present in the root מהר(עם-הך-ער), to be in a rush, to hurry, to be brisk, to drive (de-rive, to rip or rive oneself apart) rapidly. It is closely related to the roots מחר, tomorrow, and מכר, to sell, to distribute merchandise.

As said before, roots are related in the first degree by containing the same fundamental concepts in the same position, for example: קבר, חבר, גבר, גבר, each consisting of the primary combination גע-עב-ער, except that the fundamental concept גע is represented variously by the letters ה, ח, כ, ק. Among these roots, קבר is possibly the most tangible and sheds light on the meaning of the rest, particularly on the rare חבר.

The root family farther propagates and expands in shades of meaning by spawning relatives having the same fundamental concepts, arranged differently. For example:—

גבר, גרב, בגר, ברג, רגב, רבק, הבר, בהר, רהב, חבר, חרב, ברה, בחר, רחב, רוח, כבר, כרב, ברך, בכר, רכב, רבן, קבר, קרב, בקר, ברק, רבק, רקב.

This root intimacy cannot furnish us with a detailed description of the mysterious קרובים, yet it firmly associates them with קרובים, a crowd of relatives grouped together.

The wider family circle of roots include substitutes of גע, על, עם, נע as in the chains:—

גבר, דבר-זבר-טבר-סבר-צבר-שבר-תבר, נבר; גבר, גדר-גזר-גשר-גמר, כנר; כרב, זרב-סרב-צרב-שרב; כרב, כרך, כרש, כרם; קרב, קרש, קרם, קרן; רחב, רחש-רחץ, רחק, רחל, רחם; רכב, רכך, רכש, רכל, רחם, רכן; הבר, הגר, הדר, המר; חרב חרג-חרך-חרק חרד-חרט-חרס-חרץ-חרש, חרל, חרם, חרן; בהר, גהר דהר-זהר-טהר-זהר-סהר-צהר, מהר, נהר

and so on, until all the fundamental concepts גע, על, עם, נע have been interchanged and repositioned in the root.

The fact that all Hebrew roots are composed of essentially only two fundamental concepts implies that all Hebrew roots divide into two primary categories: those that contain the fundamental concept ער and those that do not.

Consider the two seemingly unrelated roots כשר(גע-עז-ער) and רמה(ער-עם-הך), and their convergence through the chain: כשר, כרש, שכר, שרך, רכש; רמש; רמה. The basic meaning of רמה, known to us only from its derivative רומה, is further suggested by the chains:—

רמה, רבך-רוח, רקח, רצה, רמס, רמל, רגם-רחם-רקם, מרח-מרק, מרס-מרט, מגר-מהר-מחר-מכר, מסר, גרם-חרם-קרם, גרן, גמר-המר-חמר, רמס-רמץ, רסק, חרס-גרס-קרס.

This intimates that רומה is a crushing instrument or implement.

It is interesting to trace the mutations of the root 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 ה, ח, כ, ק to yield: קשר, חשר, גשר. Next, the fundamental concept עז-זע which is another of its primary constituents, is allowed to be variously represented by each of the letters ד, ז, ט, י, ס, צ, ז, ש, ת to yield:

גדר, גזר, גשר; חדר, חזר, חטר, חסר, חצר, חשר; חדר, כיר, כשר, כתר; קדר, קטר, קצר, קשר.

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

גדר, גדר, דגר, דרג, רקד, רתק; גזר, גזר, זקר, רגז, רסק; גשר, גרש, שגר, שרק, רגש, רסק; חדר, חרד, דרך, דהר, רתח, רהט; חזר, חרו, זרה, זכר, רוח, רחש; חטר, חרט, טחר, חתר, רתח, רהט; חסר, חרס, סחר, סחר,



רצה, רחץ; חצר, חרץ, צחר, צרה, רחץ, רצה; חרש, שחר, סרה, רצה, רחץ; חתר, חרט, תחר, טרה, רתח, רהט; קדר, קדר, דקר, טרק, רקד, רתק; קצר, קרץ, שקר, שרק; קשר, קרש, שקר, שרק, רסק, רגש.  
 Interchanging the fundamental concepts נע, על, עם, yields, just for גדר, the variants:—

בדר, בור, בסר, בצר, בשר, בתר, פדר, פור, פטר, פצר, פשר, פתר; סדר, סטר, סתר, שדר, שור, שטר, ששר, שתר, מסר, נדר, נור, נטר, נצר, נשר, נתר; גבר, גפר, גהר, גמר.

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

Geometrical, physical and social ideas involving aggregation are expressed with the help of the fundamental concept ער. The root ראה(ע-היא), to see, signifies foremost the ability to separate the features of an image appearing (up-bearing) before the eye. The antonym of ראה is אטם(עו-עם), to block, to blacken. אור means 'light,' the clear, bright (בהיר), rarefied (מעורער) 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, free to come and go at will.

The understanding that Hebrew considers 'will,' רצון (its opposite being nil) as equivalent to freedom, דרור חרות, 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 רב, רך-רק, רו, רם, רן and which are but variants of רב, רד, רץ, רש.

Likewise, the abstract roots בהר(עב-הק-ער), to be clear, 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 clear choices (ברירה).

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

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 שרר, צרר, דרר; פרר; ברר, and to, עזר, עור, עצר, אתר; אשר, אצר, אסר, אדר, אור, אצר, אשר, אתר; עזר, עור, עצר, as well as to שאר, to remain, and so on.

We notice with interest that 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 prisoner, in fact, is free to move around to the limits of his confinement. The concept *ar*, of separability and diversity, is also found in: *crowd, concrete, discrete, root, express, form, drag, track, variant, arrest, prison, free and frozen*. The connection between *free, freeze* and *frost*, is provided by the fundamental concept *ar* found in all three. Only that which is granulated, fragmented and frazzled, such as frozen (קרה קרוש) hoarfrost (כפור), is free to separate, break away, and frolic to and fro.

Consider these opposite states:—

אסר: אסף, אסל, אסם; אגר: אגב, אגס, אגל, אגם; אשר: אשר, אשך, אשל, אשם; עצר: עצב, עצל, עצם; עדר: עדף, עדש, עדן; עקר: עקב, עקש, עקל, עקם; קרע: קבע, קטע, קלע, קמע; גרר: גבב, גזו, גלל, גמם, גנן; רב: רב; צב: רך; כך; רו; פז; רם; צם; נם; זר; זב; סר; סב.

Free and sociable man has:—

חברים, מבקרים, שארים, קרובים, רעים.

His family includes:—

גורים, צעירים, נערים, בחורים, אברכים, גברים, זכרים, בכורים.

Names of living beings that roam freely, or that gather in crowds, in droves, in throngs, in swarms, in prides, in herds or in flocks, contain ער, as in:—

אבירים, אברכים, אורחים, אסירים, אפרוחים, אריסים, ארושות, אריות, להקות ארבה, ארנבים, בורים, סתם בראים, בוגרים, בחורים, ברונים, בכירים, נכרות, בעיר, ברבורים, גברים, גורים, גרושים, דבורים, דורים, דיירים, זכרים, זמרים, זוררים, חברים, חמורים, חזירים, טירונים, טפסרים, כמרים, כפירים, מריאים

נוראים, סרנים, נמרים, נכרים, עגורים, עופרים, עירים, ערודים, נזירים, נשרים, סרטורים, עורבים, ערפדים, ערצבים, ערודים, עברים, ערבים, עריצים, פראים, פרים, פרדים, פרות בנות בקר, פרגיות, פרחיים, פרסים, פרעושים, צעירים, צפירים, צפרדעים, צרעות, ראמים, רחלות, רחמות, רפאים, שרידים, שוטרים, שכירים, שעירים, שרים, שרפים, שורים, תורים, תירים, תרנים.

The fundamental concept ער also appears in various descriptions of vegetation: —

יער, חטר, יהור, חרש, סירה, אמיר, צמרת, ארז, ארז, ערבה, שערה, תמר, תרזה.

English retained *ar* in *branch, forest, fern, frond, fruit, (green) grass, root, and tree*.

Geometry looks upon curves (that is, carved graphs), shapes and forms as consisting of collections of points, congregating and spreading freely in strings or sheets. Hebrew conveys the same idea using the fundamental concept ער, as in the roots ערם, עפר, describing a collection of particles.

The fundamental concept ער is also a defining element in words that refer to objects that Hebrew perceives and describes as being formed by the distribution and arrangement of material or abstract particles. Such are the following objects and geometric concepts: —

אפר, אתר, תואר, ישר, משור, רחב, ערבה, קערה, ארוך, אחור, קרוב, רחוק, קצר, צורה, שורה, רום, יגר, הר, כר, כדור, קיר, חור, מכרה, סהר.

Thus, צורה, shape, is but צרויה, grossed, indicating a collection of loose particles, easily arranged to produce a resemblance. קרוב, near, proximate, is but a variant of חרוב, broken, ruined, and גרוף, raked, grouped together; while רחוק, far away, is but a variant of רסוק-רחוק crushed, severed, separated and distanced. קצר, short, means just what it does in English, shorn. רחב, wide, spread out, to stretch, is but a variant of רחק, to hover, רכב, to ride, to wear, רגב, to crumble, and רקב, to rub and disperse.

The couplet רח in רחב, may be considered as an embedded root, רכך, to be soft, to be loose, to be released. The couplet חב in רחב, may be considered as an embedded root, חבב, a close relation of גבב, to accumulate. The couplet רב in רחב, may be considered as an embedded root, רבב, a close relation of רפף, to be infirm. All contributing to the sense of רחב.

A close relative of רחב, wide, is רהב, grandeur, splendor, magnificence, spectacularity. Also close to רחב are the roots רחם, רחל, רכל, רחש, רחץ, רחק, רחץ, רחש, רחל, רכל, רחם, רכן, רחב, obtained through the interchange of נע, עם, על, עז, עג, עב, with their representing letters. Reordering the fundamental concepts עב-ער-רחב within רחב discloses additional relatives: חרב, הבר-חבר, ברח-ברך, בהר-בחר.

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

הור(הך-הוא-ער) is a mountain or a crag, חור(הך-הוא-ער) is a hole; the first is made by adding gravel, the second is made by removing gravel. אחור 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, סכר, סהר, סגר shows that סהר is a closed (סגור) packed, round form.

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, 'crisis' is a moment of truth, '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 צבור is merely טבור, the accumulated mountain. Also, הר צבואר or הר צבור is in fact דבורה, צבור, צבואר is surely צביר, and מְדַבֵּר is מְצַבֵּר. 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 תמר, צָמַר, צָמַרְתָּ.

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 or to expose, has come to mean 'to injure' even though רצע, to pierce, to strip, to ravage, or פרע, to disrupt, are more apt descriptions of injury. It would have been more appropriate to call פגוע by the name פרוע, and פצוץ by the names פרוץ or פרויר. Likewise, חבולה is actually a חבויה, and a מחבל is actually a מחבר. חבלה, perpetrated by the מחבל, essentially means the creation of a parcel, חבילה, of debris, actually a חבויה of debris. It would have been

more appropriate to call גומה, a pit, גוּרָה or בּוּרָה.

A better name for the tool we call קָלְשׁוֹן is קָרֶשׁוֹן, from the root קרש, to rip, with an ר, that is present in the names of the other gardening tools מגרפה and מעדר, 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 פטיר, 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 פתיה from the root פתח, to pry open, or פתית from the root פתת, to smash, or פתיל from the root פתל, to distort, or פתים from the root פטם, to stuff, or פתין from the root פתן, to extend.

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

חומה/חורָה, במה/רמה, שמים/רמים, ארץ/אמץ, ערבה/עקבה, אלון/ארון, עבר/עבר, עקד/עקר, בטח/ברח, בגד/ברד, בהט/רהט, להט/רהט, חשב/חרב, יבש/ירש, יבש/רפש, יפה/ירה, יפה/רפה, יקד/יקר, יהד/יהר, כמס/כרס, לכד/רקד, מלח/מרח, מלך/מרוך, נהל/נהר, פטם/פרם, פקד/פקר, צנם/צרם, פמט/פרט, לביבה/רביבה, צמח/צרה, סמך/צרך, כנע/כרע, שמש/שרש, שקד/שקר.

### Quadrilaterals

The trilateral root, bundling three fundamental concepts, seems to be the optimal tonal and conceptual packet of linguistic meaning. Quadrilateral roots are compounds of lesser roots. For example, הרמש(חר-מש) merges the two bi-conceptual roots אחר-אמש or אגר-אמץ or עקר-עמס (that would have corresponded more accurately to גרמץ, which is not in use). עזר-עבד or אסר-אפד merges טרפד(טר-פד). עצם-עטר or אסם-אדר merges סמדר(סם-דר). אחז-עמל or חשא-מלא merges השמל(חש-מל). אגף-אתר or עקף-עטר כפתר(כף-תר). כרסם(כר-סם) or כלא-משה or עקל-עמס or אכל-אמץ merges חלמש(חל-מש). כרע-בלע or קער-בעל or אכר-אבל or אגר-אפל merges כרבל(כר-בל). עקר-עצם or אגר-אסם merges בער-צאל or אבר-אצל merges ברול(בר-זל). חרה-תמה or אחר-אטם merges חרטם(חר-טם). מרא-דכא or אמר-אדק merges מרדך(מר-דך). מלל-צרר or מלא-צרע or אמל-אצר merges מלצר(מל-צר). The obsolete root עגל-עקם-עמס or אגל-אגם-אמץ merges גלגמש(גל-גם-מש), betokening loftiness, strength and corpulence.

### The vertical nature of Hebrew

Hebrew is a primal language issuing from the depth of the human soul and has no 'origin,' מקור, in any other language. The etymology of the Hebrew language is an internal affair. The basic understanding of the Hebrew root is achieved by descending into its primary components more than by relying on the peculiar nature of its relatives. Some examples will clarify this. There is no metaphorical relationship whatsoever between בגד, garment, coat, cloak, and בגידה, betrayal. In other words, בגידה is not a cover-up. The meaning of בגד(עב-גע-עד) is hinted at better in פקד(עף-גע-עד), to confront, and נגד(נע-גע-עד), to conspire or to join the opposition.

The arid region in the south of Israel, called the נֶגֶב from the root נגב(נע-גע-עב), has little to do with נָגַב, wipng dry, but more to do with נָקַב, שָׁנַב, הָקַב, all meaning 'loftiness,' as does the Arabic root نَجَب, to be noble. Greater insight into the basic meaning of נגב is gained by considering the root as being the amalgamation of the three biconceptual roots נבע, נבע, נבע. All variants of נגב consisting of נע-גע-עב in any order, namely: נבג, נבק; נגב, נפק; גנב, כנף; גבן, גפן; פנק; בחן, פגן, refer to elevating, lifting, growing, amassing and beautifying. גנבה means storing loot in the same way that in English 'to steal' is metaphorically related to *stall, stale, still, tall, and deal*.

Likewise, חמור does not mimic the sound חמור, בויק-בויק is not חום-עור, the bird named חסידה is not pious, and שמש is not the composition אש-שמש.

However, to express colors and feelings, Hebrew, like other languages, has no choice but to revert to universal similes. Indeed, ירוק, green, virid, is the color of growing grass. אדום is the color of blood (in English, *red* is related by degrees to *rose, radish, rod, and root*, which appear in Hebrew as ראש). זהב is the color of gold, כתום is the color of פז, כתום, a nugget, כתום-קטום-התם-השם, of gold. לבן, white, is related to גבן, from which we have גבינה, גבינה, cheese. שחור, black, is related to סכור, opaque or diffuse. שחור is also related to פכור, fragile, and to שבור, crushed. Further, שחור is related



In this way, קצץ (גע-עז-עז), to cut, to chop, 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, גוז, גלל-כלל, גמם, גנן.  
Likewise, the root מרח(עם-ער-הך) (a close relative of רמה and רמה), 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 get lost, be least, be last, or be leased. 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 describe 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 עז, עג, על, עג. 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.*

### ***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 can not be at two places at once. This explains the surprising vocal affinity of אבד(עב-עד) (related to בד, a branch, and בדה, to invent), to be lost, to perish, to be 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 else’. So אבד, like בעלם, means branched out and is to be found somewhere else. This explains also the affinity of פנה, a corner, a protruding (פונה) pin, and פנה, he vacated, he collected in one corner.

Emptiness, ריקנות, is achieved by evacuation, הרקק of the brittle, ריקק. The root שלל, to negate, is a mere slight variant of תלל, to heave. It is only a different viewpoint as to who loses and who gains. Loot, שלל, is 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 שוד (composed of שאה 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 שוד. It is interesting that the English verb ‘to rove’ corresponds to the Hebrew verb שטט. Yet conceptually, there is nothing between שוד and שטט. The שודד, the robber, is a ripper and a reaper, but he is not a גשושט, a rover. The שודד is rather a צודד, a collector. A rover is a drifter who ripples freely and raptly on the surface of the earth.

The root נבל(נע-עב-על) means to be lofty and noble, as in the large musical instrument נבל, nabla, harp, or cask. But נבל is mean-spirited, and נבלה is a fallen cadaver. Also, נפיל(נע-עף-היא-על) is a giant, but נפול(נע-עף-הוא-על) is shriveled. Whatever falls, נפל(נע-עף-על), upon the ground, also rises above it just by lying upon it. Thus 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, stoop*, on the one hand, and *deep, top, topple*, on the other.

שכב(עז-גע-עב) is to recline or lie down, while שגב(עז-גע-עב) is to lift up. Indeed, to lie down is in fact to hoist one’s body upon the bed. In like manner, כשל(נע-עז-על) is to fail but כהל(נע-עז-על) is to tower. סכל(עז-הך-על) is to stupefy, but שכל(עז-הך-על) is to understand. אציל is a nobleman, but עצל is a loose or lazy lout. גבעה means ‘hill,’ but גויעה means ‘demise’. Yet, both גוע(נע-בא) and גבע(נע-בא) mean to bow. כפף(נע-עף-עף) means or bend down, while גבב(נע-עב-עב) means to pile up.

אחור (so near to עכור and עקור), behind, means the compilation of previous layers, while חור, hole, grave, means a reversed ער or ער created by carving and removing layers of gravel. עקר means the essence (the word actually means 'to be the extract'), but עקר means barren. גאה means to be lofty, but גיא is a depression or an inverted summit. שקע means sunk, submerged, absorbed, but השקיע means invested, and השתקע means settled down. הלל means empty space, but הלל means to heap (כלל) praise.

The imperative, insistent, or assertive אַל, do not!, take it off your mind!, is but a slight orthographic variation of על, which here in the sense of *off, up*. This is also what (לא)על-הוא (the opposite of בן-כה-הן), based on the fundamental concept על (גע), means. The fundamental concept על, of elevation, serves this same purpose in אולי(הוא-על-היא) (literally 'mayup'), maybe, possibly, and לו(על-הוא) (literally 'ifup'), if, and לא(על-היא), if not for, and הלא(היא-על-הוא), surely, and הלא(היא-על-היא), off, away. Instead of the fundamental concept על Hebrew may prefer the fundamental concept נע, as in אין (the opposite of יש, based on the fundamental concept עו-עו), 'there is no,' which is but a slight variation of אַיִן, deviated, deflected. For the conjunction *even*, Hebrew uses the fundamental concept ער in the slightly modified form אַךְ, that is combined with אלו to produce אפלו(אף-היא-לו), even if. Corresponding to *even* is the German *eben*, which is but a slight variation of *oben*, above.

Negation is also expressed by בל(עב-על), בלי(עב-על-היא), בלתי(עב-היא-על-את-היא), with בל(עב-על) being only a slight variation of אבל, but.

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

Our appreciation of the sense of the Hebrew root is enhanced and enriched when we look at them amidst their relatives, each of whom may have acquired a different shade of meaning over time and with use. Consider, for example, the company of roots על-גדל, על-גדל, על-גדל, all consisting of the fundamental concepts על, גדל, גול, כסל, כשל, כתל, קטל in the same order, and therefore have the same basic meaning. Among these roots, גדל, to be big, is the most concrete, leading to such connections as between גדל, size, and כתל, a large wall. This root association also informs us that גזל, loot, is essentially גדל, build-up (of spoils), and that גזל, chickling, is essentially גדל, a thriving. In this way we understand that כשל, like כשל, is a blockage or a big setback. In קטל the bodily setback is final.

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:—

גדל, גדף, גדש, גדם; גדל, גבל, גחל, גמל; גדל, גדל, גדל, גדל, גדל, גדל; גול, גום; גול, פול, מול, נול; כסל, כסף, כסה, כסם; כסל, כבל, כחל; כסל, חסל; כשל, כשף; כתל, כתף, כתש, כתם, כתן; כתל, פתל, שתל; קטל, קטף, קטם, קטון; קטל, בטל, נטל; קטל, קבל, קהל, קמל.

Still more insight into the slight and subtle differences of meaning among near roots is gained by contrasting one root with another (one-other) describing an opposite state. A root of opacity is contrasted with a root of clarity; a root of solidity with a root of disintegration; a root of cohesion with a root of fracture; a root of completion with a root of fragmentation; a root of the soundness with a root of rottenness; and a root of wholeness with a root of corruption. All these contrasts are achieved via the replacement of the fundamental concepts נע, עם, על, זע, גע, עב, with the fundamental concept ער and vice versa.

Here are some examples:—

אבן/ארן, אלון/ארון, אדון/ארון, אבש/אבר, אגו/ארז, אדש/אדר, אחד/אחר, ארך/אנך, במה/רמה, דקדוק/דורדור, חור/חוף, חור/חול, חור/חום, אמץ/ארץ, אמש/אמר, אצל/אצר, אבס/אבר, בטח/ברח, בטח/רתח, עצל/עצל, עמל/עמל, גבע/גרע, גו/גר, גזל/גזל, גמם/גמר, גדם/גדם, גדש/גדל, גדל/גדל, דחק/רחק, חלב/חרב, חצב/חצר, חמק/חרק, חשק/חרק, חרא/חטא, חשם/חרם, חשם/חשר, חתם/חתר, ילד/ירד, ידע/ירע, יפה/רפה, יקד/ירד, ישר/ישב, פשלו/פשוט, להם/רחם, מהר/מהל, מרא/מצא, מרא/מלא, מרח/מתח, מלח/מרח, מלך/מורך, נוב/נור, נתב/נתר, נצץ/רצץ, כפל/כפר, כפת/כרת, כתף/כתר, כתל/כתר, מצץ/רצץ, נצח/רצח, סמך/סרך, ערד/ערר, עקד/עקר, ערב/עקב, עמל/ערל, עמל/עמר, ענג/ערג, פגם/רגם, פגם/פרם, פטם/פרם, פטם/רתם, פגש/פרש, פגש/פגר, פסק/פרק, פנק/פרק, פעל/פער, פתע/רתע, פתע/פרע, פרא/פלא, צדד/צור, צוק/צור, קדם/קדם, קפץ/קרץ, קטל/קטר, קשש/רשש, קום/רום, רבע/קבע, שודד/שוור, שמד/שרד, שמש/שרש, שדד/רדד, שתל/שתר.

Such pairs are also common in English. Here are some examples:—



the formal קולים.

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

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

Gender endings are also 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 (עו) בלט(עב-על-עו). Also: —

אם-אם, אמה, איש-אשה, בן-בן, בן-בן, בטן-בטנה, גבע-גבעה, דיר-דירה, הספס-הסכמה, זמר-זמרה, זרם-זרמה, חבר-חברה, חקר-חקירה, טבח-טבחה, ידע-ידיעה, יער-יערה, ירך-ירכה, יתר-יתרה, כור-כור, כירה, לב-לבה, מזרק-מזרקה, מסמר-מסמרה, עור-עורה, נהם-נהמה, נחל-נחלה, סיר-סירה, פרוץ-פרצה, פתח-פתחה, צדק-צדקה, צוק-צוקה, ציץ-ציצה-ציצית, קור-קורה, 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 את, היא, אני can turn an adjective into a noun: —

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

רגל is 'a foot,' רגלי(רגל-היא), as an adverb, means 'on foot,' as a noun, it means 'pedestrian,' 'walker,' רגלית(רגל-היא-את) is a small leg or peg. The inflected form of רגל, רגלי, is 'my foot,' רגלי. Yet, רגלית(רגל-היא-את) is not רגלית(רגל-היא-את), but rather a heavy (כבד(גע-עב-היא-עד) vat, as is the מִחְבֵּת(עם-חבת) — a kind of ponderous, מִכְבֵּד, pan.

In the diminutive formations: —

חמש(חמשת(חמש-היא-את), תל-תלולית(תלול-היא-את), שליל-שלולית(שלול-היא-את), צלתת(צלח-את)-צלוחית(עו-על-הוא-הך-היא-את), גד-גדית(גד-היא-את), כף-כפית(כף-היא-את), כר-כרית(כר-היא-את), פח-פחית(פח-היא-את), נורה(נור-היא-את), נוריית(נור-היא-את).

the feminine ending את-היא is believed responsible for the perception of the lesser size of, say, כפית, a tea spoon, as opposed to כף, a soup spoon.

Consider also the formation of the two portentous Hebrew words, based on the fundamental concept עם of massivity, אָמַת(עם-את)-אָמַן(עם-הן).

Doubling a root intensifies its sense, as in רכרוכי(ער-הך-ער-הוא-הך-היא), a softy, a (male) weakling, and רכרוכית(רכרוכי-את), for a female. Likewise we have אדמדם(אדם-דם), (he is) reddish (red-is), אדמדמה(אדמדם-היא), (she is) reddish, ירקרק (not ירקרק), he is greenish, and אדום-אדום is greenish. It is reasonable that אדמדם is reddish, since 'reddish' in the sense of light red, would have been rendered in Hebrew מעין אדום or כעין אדום.

### The plural

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

הוא-הם(היא-עם), אָבֵן-אָבְנִים(אָבֵן-עם אָבֵן-הם), יָלֵד-יָלְדִים(יָלֵד-עם, יָלֵד-הם), דָּב(דָּב-הוא-עב) דָּבִים(דָּב-עם). Notice the delicate phonetic adjustment in the pronunciation of יָלֵד versus יָלְדִים.

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

Feminine names are pluralized by the addition of את, היא, as in: —

לב(על-היא-עב) לבות(לב-הוא-את), פה-פיות(עף-היא-הוא-את), ילדה(ילד-היא) ילדות(ילד-הוא-את), בת(עב-את) בנות(בן-הוא-את), תמות(חם-הוא-את) תמיות(חם-היא-הוא-את), אחות(אח-הוא-את) אחיות(אח-היא-הוא-את), דודה(דוד-היא) דודות(דוד-הוא-את), רחמנית(רחמן-היא-את) רחמניות(רחמן-היא-הוא-את).

But we also have the surprising plurals אֵשֶׁת-נָשִׁים. The suffix -ות, of feminine plurality has given the connotation of עוד.

Commonly English does it is by appending the letter s (short for as, is?), as in



*cat-cats, pock-pox (pocks,)* or less commonly with the addendum *-en* (short for *one*?) 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 צאן.

In the complex form of an inflected noun, the plural indicative suffix is shortened by dropping the additive עם. Thus we have, אַרְגוֹנוֹ(ארגו-אנו), our single box, and אַרְגוֹנוֹ(ארגו-היא-אנו), our many boxes, instead of the formal, (ארגו-עם-אנו). An ancient, simpler, but grammatically collusive, plural form is hinted at in תְּלִינִיחַלוֹן-היא) or תְּגַמְלוֹהִי(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 pleasant versifications מים רבים, היים טובים, אלוהים אדירים. In יום-יומם(יום-עם) the repeated עם 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:—

והנה אֶתְּנוּ מְאֻלָּמִים אֶלְמִים(אלום-עם) בתוך השָׁה, וְהָאֵלֹהִים מְאֻלָּמִים עִם.

with אלומה, sheaf, inflected in the masculine mode to mimic the עם of the next part of the sentence reads

והנה קמה אֶלְמִתִּי(אלום-אתי) וגם-נִצְבָּה(נצב-היא),

with אלומה inflected in the correct, feminine mode.

Although פתרון is feminine, we find

הָלוֹא לְאֵלֹהִים פְּתָרָנִים(פתרון-עם).

Although גליון is formally feminine, we find

והגְּלִינִים(בא-היא-גליון-עם) וְהַסְּדִינִים(בא-היא-סדין-עם).

Although כנור is formally feminine, we find

הַמִּזְוֵן שִׁירָה(שיר-היא-אך) וְקוֹל כְּנֹרֶה(כנור-היא-אך).

Although מעין is formally feminine, we find

הַמְּשַׁלַּח מְעִינִים(מעין-עם) בְּנַחְלִים(בא-נחל-עם) בֵּין הַרִים(הר-עם).

Although דרך is formally feminine, we find

הָאֵל תָּמִים דְּרָכּוֹ.

### The dual

The dual form for paired objects is indicated in Hebrew by an extra היא, as in:—

שְׁפָה-שְׁפָתִים(שפה-את-היא-עם), שְׁנָה-שְׁנָתִים(שנה-את-היא-עם), יָד-יָדַיִם(יד-היא-עם), לְחַי-לְחַיִּים(לחי-היא-עם), עֵין-עֵינַיִם(עין-היא-עם).

### Construct state (Referral)

Referral, סמיכה, is also expressed with personal pronouns, as in, שְׂרִי(שר-היא-היא), שְׂרִי in היא marks the plural, and the second היא refers to שרים אלפים, thus dispensing with the genitive particle של, needed in the longer form: השרים אלפים. In this way, פָּרָעָה, פרעה, הסוסיים(היא-סוסי-עם) של פרעה, the horses of Pharaoh. This longer form uses the connecting possessive particle ה, and the definite article ה- for the marked and known horses of the king. Similarly, המלכה של שבא, is concisely rendered, שְׁנָה, a year, is feminine, yet we find, שְׁנֵי חַיִּי שְׁרָה, with שְׁנֵי chosen to accord with חַיִּי, while in another place we find אַרְבֵּי יָמִים וְשְׁנֹת חַיִּים.

Similarly, in English, a substantive may be turned into an adjective by adding the suffix *-en*, short for *one*, as in *gold, והב, golden*, של זהב *wood, וץ, wooden*, של עץ.

Notice the different functions of the terminal י, in the forms אָבִי(אב-אני), my father, and הוא or היא אָבִי(אב-היא).

The pliancy of Hebrew, exercised in its quest for a pleasant and harmonious pronunciation, is further exhibited in the construct state formations:—

שְׁנַת-שְׁנָה(את), חֲמַת(חמה-את); שְׁבַח-שְׁבַחִי, קָמִץ-קָמְצִי, קָדַשׁ-קָדְשִׁי, אָגַם-אָגְמִי, אֶהַל-אֶהְלִי.

In this manner, אֶל הַצְּפוֹן(היא-צפון), or לַצְּפוֹן(על-היא-צפון), northward, is concisely rendered אֶל הַצְּפוֹן(היא-צפון), without the preposition אל. The inference that the terminal ה in הַצְּפוֹן is essentially a posterior pronoun acting as a definite article, is supported by the

words of Isaiah 8.23: הקל ארצה ובלון וארצה נפתלי. Such is also the case in the pairs שם and חוץ, פנמה(פנים-היא) and פנים, אנה(אן-היא) and אן, המה and הם, הנה(הן-היא) and הן, שמה(שם-היא) and ה, שובה(שוב-היא) and שוב, באה(בא-היא) and בא, שמה(שים-היא) and שים, חוצה(חוץ-היא) and חוץ, הבה(הב-היא) and הבה.

Hebrew may not recognize the abstract, indefinite idea of ‘toward(to-ward),’ and therefore, והנה ארצה נפל, can only mean, ‘behold their lord was fallen down dead on the earth’. All we can say is that, factually, Eglon was seen by his men prone on the ground.

Suffixing the ה locative in Hebrew is akin to prefixing in English the adverbial *a-*, as in *a-foot, a-bate, a-bed, a-dorn, a-loft, a-kin, a-live, a-mass, a-sleep, a-wake*; or the adverbial *be-*, as in *be-long*, “to be linked,” *be-cause*, ‘to be the cause,’ *be-fore*, ‘to be in the front of,’ *be-half*, ‘to be of help,’ *be-reft*, ‘to be ripped,’ *be-side*, ‘to be by the side’.

Thus, ה-השאלה, ה-הידיעה, ה-המגמה, are each but a shortened היא.

Hebrew, like English, is not averse to using prepositions to indicate causal relationships. It uses את(היא-עו) in the accusative; מן, ל-, ב-, in the dative; and של(עו-היא-על), which is but a variant of אצל, nearby, in the genitive.

Formal paradigmatic rigidity is commonly yielded in Hebrew for the sake of pronunciation ease and harmony. Hence, the distinctive plural and סמיכה constructions:—  
בית, בתים, ביתי; גבר, גברים, גברי; גדל, גדלים, גדלי; גיס, גיסות, גיס, גיסות; דגל, דגלים, דגלי; זית, זיתים, זיתי; טחנה, טחנות, טחנת; יום, ימים, יום, ימי; ירא, יראים, יראי; קלבה, קלבות, קלבות; מלך, מלכים, מלכי; עיר, ערים, עיר, ערי; עמדה, עמדות, עמדות; צמת, צמתים, צמת, צמתי; ראש, ראשים, ראש, ראשי.

**Vav consecutive and copulative**

The fundamental concept עב-בא is prefixed in the form ו-, to indicate a succession (בא) of events. Thus ויגדל(בא-היא-גדל), means, ‘and it came (בא) to pass that he grew up.’ Similarly, אם ימתנו ומתנו(בא-מת-אנו), means, ‘if they kill us, we shall(בא) but die’. Also, ואקים(בא-אני-קים), is, ‘and I will appoint,’ ואשיב(בא-אני-שיב-היא), is, ‘and I will restore’. Repetition may be exercised for poetical impact, וסוס(בא-רוב) וסוס(בא-רוב).

**Pronominal suffixation**

Possession relationships are indicated in Hebrew by appending to the name of the possessed object a compact form of the personal pronoun of the owner. Consider the noun סוס(סוס-הוא-עו), in which we look upon the median הוא as referring to the horse itself. It is augmented thus:—

סוס(סוס-אני), סוס(סוס-כה), סוס(סוס-אך), סוס(סוס-הוא), סוס(סוס-היא), סוס(סוס-אנו), סוס(סוס-אנכם), סוס(סוס-אנכן), סוס(סוס-הם), סוס(סוס-הן).

Notice that סוס(סוס-היא) is סוס(סוס-של-היא), ‘her horse,’ but סוס(סוס-היא) is ‘a she-horse’. The personal pronoun כה, אה, has no independent existence other than its inclusion in אנכי, or in such exalted poetical forms as, שובי נפשי למנוחכי כי-יהוה גמל עליכי. Corresponding to אנכי is the Latin *ego*, the German *ich* and *auch*, the English *each* and the ending *-ic*, as in *Arabic*, also the Slavic ending *-ski*, as in *h cc-rbaqor russ-ian* (Russ-one) in English. This ‘one’ appears also, slightly disguised, as the suffix, -ene, in Nazarene—the one from Nazareth.

Similarly:—

אל-אלינו(אל-היא-אנו), אין-איננו(אין-הוא), את-ארתנו(הוא-את-אנו), בין-בינינו(בין-היא-אנו), ב-בנו(בא-אנו), יש-ישנו(יש-הנו), כל-כלנו(כל-אנו), ל-לנו(על-אנו), מן-ממנו(עם-היא-עם-היא-אנו), עד-עדנו(עד-היא-אנו), על-עלינו(על-היא-אנו), עם-עמנו(עם-אנו), של-שלנו(של-אנו).

By this device of pronominal suffixation, we construct the nominal variants:—

אנוש(הן-הוא-עו), אנושית(אנוש-היא), אנושית(אנוש-היא-את), אנושית(אנוש-הוא-את), אנושית(אנוש-היא-את); קדם, קדמון(קדם-הוא-נע), קדמוני(קדמון-היא), קדמוני(קדמון-היא-את), קדמה(גע-היא-עד-עם-היא), קדמות(קדם-הוא-את), קדמת(גע-היא-עד-עם-היא-את), קדמת(גע-היא-עד-הוא-עם-את).

Pronominal affixations produce out of the root קצר(גע-עו-ער), to harvest, to crop, to shorten, to curtail, to trim, to truncate, the nominal variants: קציר(גע-עו-היא-ער), harvest, תקציר(את-קציר), synopsis, קצור(גע-היא-עו-הוא-ער), a short cut, קצירת(קציר-את), the harvesting of. From the root חלה(הק-על-ער), pass by, pronominal affixation produces the nominal

variants: תִּחְלֶיף(את-הך-על-היא-ער), substitute, חֲלֹוף(הך-היא-על-הוא-ער), replacement, exchange, חֲלִפָּה(הך-על-היא-ער-היא), suit, costume, change of clothes. From the root קדש we have, on the one hand, קִדְּשָׁה(גע-עד-הוא-עו-היא), and on the other, קָדְּשָׁה(גע-עד-היא-עו-היא), קָדְּשָׁה(גע-עד-הוא-עו-היא).

English has eliminated most inflections and declensions, and this is now also the tendency in spoken and nonpunctuated, printed Hebrew. Instead of using the compact, בִּיתָנוּ, the current Hebrew speaker says, הַבַּיִת שְׁלָנוּ, a form that is grammatically safer and less ambiguous—considering that בִּיתָנוּ can mean בִּיתָנוּ, ‘we were domesticated’. However, אֲשֵׁתִי and בְּעַלִּי (not בְּעֻלָּנִי nor בְּעֻלָּנִי), are still prevalent.

In this manner we derive from the root גבר, the substantive גְּבוּרָה(גע-עב-הוא-ער-היא), strength, the infinitive (על-היא-גע-עב-היא-ער), להגביר, to strengthen, to magnify, and the abstract (ער-הך-עב), הַגְּבָרָה(היא-גבר-היא), strengthening. Likewise, from the root רכב we generate the act names הִרְכִּיבָה(היא-רכב-היא), grafting, and רִכְבָּה(ער-הך-היא-עב-היא), riding—being grafted upon a horse, himself craftily surging (מרהף) upon the face (מרהב) of the earth.

**Prepositional prefixations—grammatical markers and modifiers**

The designating letters of the fundamental concepts עַם, עַל, עַז, עָג, עָב, עָב (but not עָר) are prefixed to nouns to serve as indicators of relation.

Hebrew concisely renders, ‘In (בֵּית) the house,’ בְּבֵית(בֵּית). In this way, ‘According (כִּי) to his will,’ is compactly rendered, כִּי(כִּי-גֵע-היא). The statement, ‘From (מִי) there,’ is shortly rendered, מִשָּׁם(עם-היא-עו-עם). Similarly, ‘from here,’ is concisely rendered, מִפֹּה. Likewise, ‘To (לִי) Jerusalem,’ is compactly rendered, לִירוּשָׁלַיִם. ‘A boy and (וְ) a girl,’ is contracted as, וְיָלְדָה(בֵּית-יְלֹדָה). The statement, ‘that which (שֶׁ-) you wanted,’ is shortly rendered in Hebrew as, הַשֶּׁ שָׁרָצִיתָ(וְהָ-רָצָה-היא-אתָ).

In English the definite article *the* is but a variant of *as, at, is, it, so, to*, which correspond to the Hebrew articles, או, זה, זו, זו, derived from the fundamental concept עו-זו. The Hebrew definite article הַ, formulated also as הָ or הֶ for phonetic grace, is a condensation of כִּי, כֵּה, חֵיה, הֵיה, derived from the fundamental concept גע-הך. It likewise serves to indicate that which is specified, named, or tagged (מוקדע-עם-הוא-גע). Thus we say, ‘I took (the boy named) David’, but גַּמְלָתִי אֶת דָּוִד, ‘I took the (הוא) boy’. In English the indefinite article *a*, and the definite article *the* are indeed of pronominal provenance, as indicated by their function in the sentences, ‘I saw a (one) boy’ and ‘I saw the boy,’ in which they are present, as opposed to, ‘I saw (the specified boy named) David,’ in which they are absent. Once a person or an object has been named, recurring references to him or to it can be made with the pronouns הוּא, הֵיא. Naming is knowing:—

יַעֲקֹב וְיִשְׂרָאֵל בְּחִירֵי וְאֶקְרָא לָהֶם בְּשֵׁמֹתָ אֲבֹתָי, וְלֹא יִדְעֻתֶיךָ בְּשֵׁם.

**Conjunctions**

A prominent aspect of conjunctions such as או, אֵל, אִם, אַךְ, כִּי(גע-היא), לוֹ, כִּן, is that they are uninflected. In particular, 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’.

**Verbal morphology-structural augmentations**

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

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

שָׁבַרְתִּי(שבר-אתִי) not שָׁבַרְתָּ אֵנִי, שָׁבַרְתָּ(שבר-אתָ), שָׁבַרְתָּ(שבר-אתָ), שָׁבַרְתָּ(שבר-היא) not שָׁבַרְתָּ(ה), שָׁבַרְנוּ(שבר-אנו), שָׁבַרְתֶּם(שבר-אתֶם) not שָׁבַרְתֶּם(שבר-אתֶם), שָׁבַרְתֶּם(שבר-אתֶם), שָׁבַרְתֶּם(שבר-אתֶם), שָׁבַרְתֶּם(שבר-אתֶם), שָׁבַרְתֶּם(שבר-אתֶם) not שָׁבַרְתֶּם(שבר-אתֶם).

Notice the use of the pronoun הוּא in שָׁבַרְנוּ to betoken the fact that many actors participated

in the act of breaking; notice also the use of the obsolete personal pronoun אַתִּי(את-היא) appended to שבר to form the declension שְׁבַרְתִּי, in place of the current, independent, personal pronoun אני.

Insertion of a supplemented היא turns the factual שָׁבְרוּ, they broke, into the command, תִּשְׁבְּרוּ(את-היא-שבר-הוא)! colloquially, שְׁבְרוּ(עו-היא-עב-ער-הוא), 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.

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

A pronoun such as היא may be added to convey a whiff of scorn or irony: הַאֲמָרִים יִמְהָר יְחִישֶׁה(יחיש-היא) מְעַשְׂהוּ לְמַעַן נִרְאֶה וְתִקְרַב וְתִבְוֶאֶה(בא-תבוא-היא) עֲצַת קְדוֹשׁ יִשְׂרָאֵל וְנִדְעָה(בא-נדע-היא),

in which, יְחִישֶׁה, is rendered 'let Him (היא) hasten,' and וְתִבְוֶאֶה, is rendered 'and come,' and וְנִדְעָה is rendered, 'That we may know it (היא)'.  
The structure שׁוֹבֵר(עו-הוא-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 pronunciation, and do not have the gender significance they do when standing detached and alone. שׁוֹבֵר like שׁוֹמֵר is accepted as representing an ongoing action. Habitual action exercised by a person is an occupation; in this sense שׁוֹמֵר is 'a watchman,' and we may refer to him as, say, שׁוֹמֵר הַגֶּן. The structure אֲשֶׁבֵר(אני-עו-עב-הוא-ער) is accepted as representing an intended or impending act by the actor, אני, to be committed against the object, היא.

Auxiliary verbs may be used to properly place an act in a sequence of events in the life of the speaker. For example: כָּבַד שְׁמִרְתִּי (I have already guarded), זֶה עָתָה שְׁמִרְתִּי (I have guarded just now), סִימַתִּי לְשֹׁמֵר (I am still guarding), אֲנִי עוֹמֵד לְשֹׁמֵר (I am about to guard), אֲנִי מְשִׁיךְ לְשֹׁמֵר (I am still guarding), אֲנִי עֹדֵן שׁוֹמֵר (I am still guarding).

Notice that כָּבַד is but a variant of הִקְבִּיר, and that סִימַתִּי is but a variant of אֲסַמְתִּי. 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, שְׁבֹר(עו-עב-הוא-ער), 'you break it'), the definitive (for example, שְׁבֹר(עו-עב-הוא-ער), 'it is broken'), and the tentative (for example, שְׁבִיר(עו-עב-היא-ער), 'it is breakable').

The absolute, or פְּעוּל, form (for example: שְׁמוֹר(עו-עב-הוא-ער), שְׁמוֹר(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 pronoun הוא intended for all. Insistence is often shown by a rhythmic repetition of an inserted nominal, for example, ו, followed by, ו, both short for הוא, as in,

שׁוֹב אֲשׁוֹב(אני-שוב), מוֹת תִּמּוֹת(אתה-מות), שְׁמַעוּ(עו-היא-עם-הוא) שְׁמוֹעַ, זְכוֹר תִּזְכּוֹר(את-היא-זכור).  
In זְמַר and זְמָר, the change of tone between זְמָר and זְמַר is designed to distinguish the last word of the sentence.

In the colloquial, כָּבַד, תְּבוֹא(אתה-בוא) כָּבַד, the prefixed תְּ is not an indicator of future action, but rather an emphatic and confrontational אתה. Such a direct אתה is found in the command תָּוֹת(חיה-את)-דַּעַת(דע-את). A repeating את puts rhyme into a string of אתה, אתה, is deployed for poetic effect in,

מֵאֵת(עם-היא-את) יהוה הִיְתָה(חי-אתה) זֹאת(זו-את) הִיא נִפְלְאָת(נפלאה-את) בְּעֵינֵינוּ.  
In the wishful statement, תָּרַם, תָּרַם(אתה-ער-הוא-עם) יָדָה עַל-צָרֶיךָ, תָּרַם is a compromise between תָּרַם(אתה-ער-הוא-עם) and תָּרַם(אתה-ער-הוא-עם). Also the pronoun אני may be repeated for emphasis, as in, בְּרַבְּנִי(ברך-אני) גַּם-אֲנִי.

Yet, while צָבַע is a פְּעַל form, and means 'painted', צָבַע, with no added personal pronouns, is now chosen to designate 'a painter'.  
The פְּעַל (or פְּעַל) construction is of the form, מ-היא-מ-היא-מ, 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 **פעל** form, הוא שבר (it), 'he broke (it),' and the **פעל** form, הוא שבר(עו-היא-עב-היא-ער), 'he broke it'. The longer passive form, גדל(גע-עד-על), 'he grew' or 'he is grown up,' whereas גדל(גע-היא-עד-היא-על) means, 'he caused him (it) to grow'. The **פעל** usage may impart to the act a new shade of meaning, as in, לְכַדוּ(על-הך-עד), meaning 'he captured,' versus לְכַדוּ(על-היא-גע-היא-עד), meaning 'he unified'. Another example of a verb split into meanings differentiated by this device, is the root דבר, which in the **פעל** form, דבר, means 'he spoke,' 'he minced his vocal stream,' but in the **הפעיל** form, הדביר, means 'he conquered,' 'he vanquished' 'he minced his enemies'.

Hebrew often sacrifices rigid grammatical structure in favor of phonetic grace as long as meaning remains unaffected, and so it uses שלח or צוה instead of שלח or צוה. This happens also in, למד, 'he taught,' but למדו(למד-הוא), 'he taught him,' instead of למדו.

The **הפעיל** construction is of the form 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 **היא**, the **הפעיל** form is more convenient than the **פעל** form. For example, הקים(היא-גע-היא-עם), 'he set him up,' from the root קום, הרים(היא-ער-היא-עם), 'he carried him up,' from the root רום, הטיב, from the root טוב, גיב, from the root טיב, הציץ, from the root צור. A median היא is, however, doubled in the **פעל** form, and we have קים(גע-היא-היא-עם), 'he maintained' from the root קים, טיב from the root טיב, טיה from the root טיה, ציץ from the root ציץ, and צין from the root צין.

Differences in verbal meaning can be achieved by the slight change of **הפעיל** into **הפעיל**, as in, הניח 'he relented' versus הניח 'he put down,' הלין 'he put up for the night' versus הלין 'he complained,' 'he pestered'.

For the sake of vocal emphasis **הקיים** is augmented as **הקיימתי**, not **הקיימתי**.

In its effort to produce agreeable vocal articulations and to avoid grammatical collisions, Hebrew prefers the augmented forms התיב(היא-הך-עו-היא-עב), 'he dictated', התיבו(היא-הך-עו-היא-עב-הוא), 'they dictated,' with the pronoun הוא in the latter, being short for the plural, הם. Such also is the imperative structure שמרו(עו-היא-עם-ער-הוא), 'you guard,' in which ו is short for הוא, standing again as a marker of the plural הם. By the device of adding pronouns we have the constructions, שמרו(הוא) which is the imperative, 'you (plural) guard him,' שמרו(הם) which is the imperative, 'you (plural) guard them,' and ישמר(היא-שמר-הם), 'he will guard them'.

Also, השמן, 'he oiled,' השמין, 'he became fat,' rather than השתמן(היא-עו-את-עם-היא-נע), because of the presumption that gaining weight is essentially an involuntary act. Accordingly, use of the form הוסיף is more appropriate than the form הוסיף. For 'fattened' or 'caused to be fat', Hebrew employs the **פעל** form פטם(עף-היא-עו-היא-עם) of the root פטם(עף-ער-עו-עם).

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

The presence of any of the gutturals א, ה, ה, ע, ר causes euphonic changes in the pronunciation of the personal pronoun indicators that exist in the root. Whereas the **פעל** structure of the root כבד(גע-הוא-עב-עד) is כבד, the **פעל** structure of the root גדל(גע-ער-עו) is גדל. In the **פעל** structure, Hebrew softens the כבד form into a גדל form. In the קל structure, the form כתבתם(כתב-אתם), 'you have written,' turns into עבדתם, 'you have worked,' instead of the awkward כתבתם. Similarly, whereas for שמר we use the form שמו, for אשחט we use the forms אשחט and אשחט, אני אשחט and אני אשחט. Yet, we use the form אשחט, 'I shall burn it,' with the personal pronoun הוא standing for the object set ablaze. Also, instead of the form אהרר, 'I shall hasten myself,' Hebrew prefers the form אאגר, 'I shall collect it'.

The **הפעיל** construction is of the form היא-ם-היא-ם, with the prefixed היא referring to the receiver of the action. **הפעיל** is better suited than **פעל** to handle roots composed of only

two, or even one, fundamental concept. Such is the case in (הוּקַם(הוּא-גַע-עַם) 'he (or it) was established,' הוּבָא(הוּא-בֵּא) 'he (or it) was imported,' הִסָּע(הוּא-זַע) 'he (or it) was carried away,' הוּבַח(הוּא-נַע-הֵךְ) 'he (or it) was put down,' הוּמָת(הוּא-עַם-עו) 'he was put to death,' and הוּבֵן(הוּא-עַב-נַע) 'he was understood'.

The *נפעל* construction is of the form *אני-ם-ם*, in which *אני* implies 'myself,' 'yourself,' 'himself,' 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 *נקנו*, 'they themselves will be bought'.

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

*נמצא(אני-מצא), נפצע(אני-פצע), נרצה(אני-רצה),*

in place of the spurned:—

*המצא(היא-מצא), הפצע(היא-פצע), הרצה(היא-רצה).*

It is also interesting to recall the opposites:—

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

The *נפעל* construction may refer to a past action, as in *נשמר*, or to an ongoing action, as in *נשמר*, distinguished only visually by *מ* versus *ם*. In future tense constructions, the pronoun *נ*, 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 *נפעל*, the *shwaic* form, *תשמרי*, 'you will guard,' is a *קל* construction.

The *תפעל* construction is of the form *היא-את-ם-ם-היא*. It contains the pronominal chain *היא-את-היא* to describes passive action. An example is *התחזק(היא-את-הך-עו-היא-גע)*, 'he strengthened (חזק-הך-עו-גע) himself,' which can also be rendered, *הוא חזק את עצמו*. *התפעל* is also used in cases of reflexive action involving others, such as, *התקבל*, 'he caused himself to be received by others,' *התחתן*, 'he got married,' 'he was caused to become a widower'. The *פעל* and *תפעל* forms of the root *ש-ל-ם* are *שולם*, '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 *תפעל*, or *תפעל* form.

### *Pronominal suffixation in verbs*

Personal pronouns, called in Hebrew *הפעיל*, may be affixed to an augmented 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.*

*שמרנני(שמר-הוא-אני), הם (הוא) שמרו אותי, they guarded me.*

*שמרתך(שמר-אתי-כה), אני (אתי) שמרתי אותך(הוא-את-כה), I guarded you.*

*שמרתיה(שמר-אתי-היא), אני (אתי) שמרתי אותה (היא), I guarded her.*

*שמרתכם(שמר-אתי-אכם), אני (אתי) שמרתי אתכם(את-אך-הם), I guarded you (plural).*

*שמרנום(שמר-אנו-הם), אנו שמרנו אותם (הם), we guarded them.*

*שמרנוכם(שמר-אנו-אכם), אנו שמרנו אתכם(את-אכם), we guarded you (plural).*

In *פעל*:—

*בקשני(עב-היא-גע-עו-אני), הוא (היא) בקש אותי (אני), he asked me.*

In *הפעיל*:—

*השליכני(היא-עו-על-היא-הך-אני), הוא השליך אותי (אני), he ejected me.*

*השליכתנו(היא-עו-על-היא-הך-את-אנו), היא השליכה אותנו, she ejected us.*

In *שמר*, while the *אנו* marks the perpetrator of the act *שמרנוכם(שמר-אנו-אכם)*

pronoun אכם marks the beneficiaries of this act.

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

Additional, prefixed indicatives are useful: לְשָׁמְרֵנִי (על-שמר-היא-אני), to preserve me, בְּשָׁמְרוֹ (בא-שמר-הוא), as he was guarding. But in this way we may get such heavyweights as וְלִקְשׁוּנְפֵי שְׂכָם (עב-על-היא-הך-עז-נע-עך-גע-היא-עז-אכם), 'when it comes to pass that we will bring you together,' or וְלִקְשָׁחְצוֹרֹתֶיכֶם, '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 (the cave, 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 "אבא 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 a everything that are is now, but was not here before. Our hypothetical man, אדם-קדמון, 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 to slight variations. He might point to his son and say, בן(בא-הן), he might point to his daughter and say, בת(בא-את), he might notice a buxom (big-some) woman and say, יפה(עז-עך-היא), or maybe even בְּבִהָ(עב-הוא-עב-היא). He might point to a boil on his skin and say, אבעבועה (עב-הוא-היא), or אבעבועה (עב-הוא-היא). He might point to his plants and say יבול(עז-הוא-על) or יבול(עז-הוא-על) or תבואה(את-הוא-בא-היא) or אביבי(עב-הוא-עב) or אביבי(עב-הוא-עב). He might point to his water source and say מבויע(עם-בא-הוא) or אובל(הוא-עב-על) or יבול(עז-הוא-עב-על), (hence the names of the rivers Aube and Avon). In this way a grown-up became אב, later specifically a father. A corpulent cask became אוב. A cloud (a cleat, a clod or a clot of vapor) became עב. A reflection coming off the surface of still water became בבואה(בא-הוא-היא). A peg became ו. 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 עפעף(עך-עך). The bleating sound coming out of the mouth of the lamb was called פעה(עך-היא), the baking of bread was called אפה(עך-היא), a pile of grain was called אִיפָה, boiling hatred he called אִיבָה, a long lock of hair was called פִּאָה(עך-היא-היא), a specially pleasing appearance was called פִּי(עז-הוא-עך-היא) (compare Latin, *venia*, *venus*, *bonus*, and *venio*), and one's own house was called בֵּית(בא-היא-את). 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, גע means ‘to extend,’ ‘to reach,’ ‘to stick out,’ ‘to exit,’ or ‘to exist’ (to exit and go into the world). So, גאה(גע-היא) is ‘to elevate,’ געה(גע-היא) is ‘to bellow,’ ‘to bawl,’ קאה(גע-היא) is ‘to vomit,’ קוע(גע-הוא) is ‘a nobleman,’ מעקה(עם-גע-היא) is ‘a fence,’ גג(גע-עג) is ‘a roof’ (that is, like a rope something made of ripped or reaped material), מועקה(עם-הוא-גע-היא) is ‘depression,’ גיא(גע-היא) is ‘a valley,’ עקה(הוא-גע-היא) is ‘a cake,’ געגוע(גע-עג-הוא) is ‘longing,’ קעקע(גע-גע) is a ‘tattoo scar,’ and אח is ‘a brother’.

In the same way man fixed the meaning of the other five fundamental concepts עו, על, עם, נע, רע.

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 רע-רע, for whatever is varied and dispersed, or corrupt (namely, ripped) and rotten, or crumbling and tottering, or broken and cracked, or ripped and rived, or breached and ruptured, or ridged and corrugated.

Man was now bursting with thoughts and ideas he wanted to share with his fellows, but *av-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 גע-עב *ga-av*, when referring to an extended and elevated object, but then he compacted them into the congealed, גב, *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 גב became the phonetic designation for *back*, kindred words readily followed: גבעה, hill, כובע, hat, עקב, heel, קבה, stomach, קו, line, גוף, body, חוף, beach (the back or *ba(n)k* of the sea). They were easily accepted and were well understood (no dictionary nor academy!). Next came the more abstract: כאב, pain, עגב, to desire, חוב, burden, קוה, to hope (namely, to heap, to heave, and to have), חויה, experience, אהבה, let us have, אהבה, love.

From גע-על our ancient but intelligent and inventive man produced גל, wave; from הל-על he produced חול, sand; from זע-על he produced תל, hill, mound; from גע-עם he produced קום, stand up; from על-עב he produced לביא, lion; from גע-עם he produced גם, also; from עם-עו he produced מוץ, chaff; from עף-ער he produced פר, ox; from ער-ער he produced עדר, herd; and from גע-ער he produced גור, cub.

Observing the lofty, buxom (*box-some, box-same*), and beautiful camel our man exclaimed in admiration, גע-עם-על, which hardened into גמל. The abstract (הל-עם-על) חמלה, ‘to have mercy,’ came later, as did המל, ‘to create a commotion,’ and גמל 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 אָלֶךְ, 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 מַם. It is conceivable that the sound 'ma' in 'man' is the same as 'mo' 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 אֲדָמָה and eventually to עִצְמוּת, 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 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*, *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*, *scatter*, *series*, *shear*, *sore*, *spar*, *spring*, *strew*, *tar*, *tear*, *thorn*, *harsh*, *thread*, *thrive*, *throw*, *trap*, *urge*, *various*, *verge*, *war*, *wear*, *wrap*, *wrest*, *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 הֶלֶה-עַל, logically places the word in the conceptual הֶל 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 שָׁלַם indicates that the root is found in the Hebrew Bible, the תנ"ך. An asterisk, as in \*לִטַף, points to a root not found in the תנ"ך. The null notation סִלַּבֵּךְ indicates that the root is not in use.