

HITTITE *hi*-VERBS AND THE INDO-EUROPEAN PERFECT

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In an earlier study (1983) I argued that unlike aorists and athematic presents, Indo-European perfects and thematic presents originally had a dative subject, as in German *mir träumt* ‘me dreams’ for *ich träume* ‘I dream’, e.g. Greek *oída* ‘I know’ < ‘it is known to me’, *édomai* ‘I will eat’ < ‘it is eatable to me’. On the basis of Oettinger’s epoch-making book (1979), I proposed that the Hittite *hi*-flexion originated from a merger of the perfect, where **-i* was added to 3rd sg. **-e* in order to supply a new present, with the thematic flexion of causatives and iteratives, where the final **-e* of 3rd sg. **-eie* was dropped before the loss of intervocalic **-i-* (1983: 315). This view must now be reconsidered against the background of Kloekhorst’s dissertation (2007), which marks another turning-point in the history of Hittite studies. For convenience’s sake I shall write *h, j, w* for *h, i, u* and **q* for any Indo-European laryngeal.

Kloekhorst has demonstrated that apart from the factitives in *-ahh-*, Hittite *hi*-verbs show an alternation between **-o-* in the singular and zero in the plural both in the root of underived stems and in the suffix of derived stems, e.g. *au-*, *u-* < **q(o)u-* ‘to see’, *āk-*, *akk-* < **q(o)k-* ‘to die’, *ārr-*, *arr-* < **q(o)rq-* ‘to wash’, *ištāp-*, *ištapp-* < **st(o)p-* ‘to shut’, *tarna-*, *tarn-* < **trk-n(o)q-* ‘to let go’, *hamank-*, *hame/ink-* < **qm(o)-n-g^h-* ‘to tie’, *dai-*, *ti-* < **d^hq-(o)i-* ‘to put’, *pai-*, *pi-* < **qp-(o)i-* ‘to give’, *mēma-*, *mēmi-* < **me-m(o)i-* ‘to speak’, *lilhuwa-*, *lilhui-* < **li-lqu-(o)i-* ‘to pour’. It follows that all of these must be derived from Indo-European perfects. Note that Kloekhorst has conclusively refuted Jasanoff’s ill-conceived theory (2003), which can now safely be discarded.

Two questions remain: how did the Hittite *hi*-verbs develop semantically from original perfects, and where do the causatives and iteratives fit in with the new reconstruction? Here I would like to call attention to an important but largely forgotten article by Herman Kølln (1968), who points to the threefold opposition between Greek *apothnēiskō* ‘struggle with death’, *apéthanon* ‘passed away’, and *téthnēka* ‘am dead’, which represent three successive stages of a single event. The same threefold opposition is found in Czech, e.g. imperfective *klekat*, perfective *kleknout* ‘to kneel down’, stative (resultative) *klečet* ‘to be on one’s knees’, also *sedat (sí)*, *sednout (sí)* ‘to sit down’, *sedět* ‘to sit’, *lehat (sí)*, *lehnout (sí)* ‘to lie down’, *ležet* ‘to lie’, *blýskat (se)*, *blýsknout (se)* ‘to flash’, *blyštět se* ‘to shine’, *zmlkat*, *zmlknout* ‘to fall silent’, *mlčet* ‘to keep silent’, *vstávat*, *vstát* ‘to get up’, *stát* ‘to stand’. Similar trip-

lets are found in the other Slavic languages. The Slavic stative verbs in *-ěti* such as Czech *klečēt* ‘to kneel’, *vidět* ‘to see’, *držet* ‘to hold’ correspond to the Greek perfect, denoting an event where the non-agentive subject has no effect on an outside object.

When there is no stative verb, the imperfective member of an aspectual pair may take its place, e.g. *opíral se o strom* ‘er lehnte sich an den Baum zurück’ or ‘er sass an den Baum zurückgelehnt’, *obklopovali svého přítele* ‘sie stellten sich in einem Kreis um ihren Freund’ or ‘sie standen in einem Kreis um ihren Freund’, *skrýval peníze ve skříni* ‘er versteckte das Geld im Schrank’ or ‘er hielt das Geld im Schrank verborgen’, *hosté zaujímali svá místa* ‘die Gäste nahmen ihre Plätze ein’ or ‘die Gäste sassen auf ihren Plätzen’ (Kølln 1968: 133). Similar instances can be found in Polish, e.g. *Jan rozchyla drzwi* ‘John sets or is keeping the door ajar’, *Jan obejmuje Marię w pól* ‘John puts or is holding his arm around Mary’s waist’, *Jan wyciąga rękę* ‘John stretches out his arm or is holding his arm stretched out’, *Jan się nachyla* ‘John leans forward or is leaning forward’ (Proeme 1980: 312), and in Russian, e.g. *sneg pokryvaet kryši* ‘snow covers the roofs’, which may refer either to the process or to the resulting state.

While the Slavic stative verbs in *-ěti* generally correspond semantically to the Greek perfect, this is not always the case. Kølln calls attention to Czech *pučet* ‘to swell, to bud, to sprout’, which denotes a development leading up to the event of *pukat* ‘to become cracked, to break (into leaf)’, perfective *puknout*. Here *pučet* describes the stage preceding *pukat* and *puknout*, whereas *klečēt* describes the stage following *klekat* and *kleknout*. Other stative verbs denote continuous sound or movement, e.g. *pištět* ‘to whistle, to pipe’ beside *pískat* and *písknout* which depict the course of action and its conclusion, e.g. *neslyšels že jsem na tebe pískal* (ipf.) ‘hast du nicht gehört, dass ich dir pfiff (einmal oder mehrmals)’ and *pískl* (pf.) *jsem jen jednou, ale i kdybych pískl* (pf.) *vickrát, asi bys to neslyšel* ‘ich pfiff nur einmal, aber hätte ich mehrmals gepfiffen, hättest du es wohl auch nicht gehört’ (Kølln 1968: 136). Here the stative verb *pištět* does not denote another stage in the development of the action but expresses its continuousness. Similarly, the Greek perfect *kéklēga* ‘scream continually’ denotes incessant action, as opposed to the aorist *ékklagksa* ‘let out a scream’.

Stative verbs in *-ěti* like Czech *klečēt*, *pučet* and *pištět* are intransitive and denote either inactivity or continuous action. Other stative verbs in *-ěti* lack an aspectual pair denoting the same event, e.g. *bolet* ‘to ache’, *šumět* ‘to make a noise’, or at least its perfective member, e.g. *letět* ‘to fly’, *běžet* ‘to run’. A few of them have developed into regular imperfective verbs, e.g. *hořet* ‘to burn’, cf. *zahořet* ‘to catch fire’, *shořet* ‘to burn down’, and *křičet* ‘to shout’, which generally describes constant screaming but may also refer to a single cry. All of these are intransitive, e.g. *letět*, *hořet*, *křičet*, or at least denote an event where the non-agentive subject has no effect on an outside object, e.g. *držet* ‘to hold’, *vidět* ‘to see’, *slyšet* ‘to hear’. The only exception Kølln mentions is *vrtět máslo* ‘Butter schlagen, to churn’, which must be recent in

view of the usual construction with an instrumental object in *vrtět hlavou* ‘to shake one’s head’, *vrtět ocasem* ‘to wag one’s tail’. This development of stative verbs into regular imperfectives and subsequently into transitive verbs offers a model for the development of the Indo-European perfect in Hittite. As Kølln put it in an earlier article (1966: 75): “Vom historischen Gesichtspunkt aus kann dieser Befund so interpretiert werden, dass gewisse Deverbativa, die ursprünglich nur das Zuständliche ausdrückten, ihren Anwendungsbereich allmählich erweiterten und sich auch das imperfektive Bedeutungsgebiet unterworfen haben.”

Turning now to the Hittite material, we may wonder if the *hi*-verbs can semantically be derived from Indo-European perfects along the lines indicated by Kølln for the Slavic stative verbs in *-ěti* such as Czech *klečēt, pučēt, pišēt, bolet, šumět, letět, běžēt, hořēt, křičēt, vidět, držēt, vrtět*. An important point which must be taken into account is the syntactic change from dative subject to nominative subject, which may have occurred as early as the Anatolian exodus from the Indo-European homeland in the Ukraine and given rise to transitive usage, as in Czech *vidět, držēt, vrtět*. This development can be illustrated with the following example from Georgian (cf. Tschenkéli 1958: 488):

kurdi gaep’ara p’olícielebs ‘the thief (nom.) escaped the policemen (dat.)’,
p’olícielebs gaep’arat kurdi ‘idem’,

where the added plural marker *-t* in the second variant is coreferential with the dative subject, the hapless policemen. The substitution of the nominative for the dative subject, as in German *er träumte* for *ihm träumte* ‘he dreamt’, might yield the meaning ‘the policemen let the thief escape’, which could easily develop into a causative. This offers an explanation for the development of the Hittite *hi*-flexion. The following analysis is entirely based on the data presented by Kloekhorst in his dissertation (2007). I shall first leave suffixed and reduplicated formations and compounds out of consideration here.

1. *āk-*, *akk-* ‘to die, to be killed, to be eclipsed (of sun and moon)’. Note that ‘to be eclipsed’ like ‘to obscure, to conceal, to hide’ may refer either to the process or to the resulting state, as in Czech *skrýval* (*peníze ve skříni*) ‘hid’ or ‘kept hidden’ cited above.
2. *ār-*, *ar-* ‘to come (to), to arrive (at)’. The cognates Gr. *érkhomai* and Skt. *ṛcchāti* with the imperfective suffix **-ske/o-* relate to the Hittite verb like the Czech a-telic imperfectives *létat* and *běhat* to the original statives denoting continuous movement *letět* ‘to fly’ and *běžēt* ‘to run’.
3. *ārr-*, *arr-* ‘to wash’, Toch. A *yār-* ‘to bathe’ is a typical verb denoting continuous action.
4. *ārḱ-*, *ark-* ‘to mount, to copulate’ denotes continuous action.
5. *au-*, *u-* ‘to see, to look’. This verb is immediately comparable to Czech *vidět* ‘to see’.

6. *hān-*, *han-* ‘to draw (liquids)’ denotes continuous action.
7. *harra-*, *harr-* ‘to grind, to splinter up (wood), to crush (bread)’, Gr. *aróō* ‘plough’. This verb denotes continuous action.
8. *hāš-*, *hašš-* ‘to give birth (to), to beget, to procreate’ is reminiscent of Czech *pučet* ‘to swell, to bud, to sprout’, which describes the state preceding the event of *pukat* ‘to break (into leaf), to become cracked’.
9. *hāt-*, *hat-* ‘to dry up, to become parched’, Gr. *ázō*. This verb denotes continuous change.
10. *hatk-* ‘to shut, to close’, Gr. *ákhthomai* ‘be burdened, be depressed’. Like ‘to hide’ and ‘to cover’, the Hittite verb can easily encompass both the process and the resulting state, like Polish *rozchyla* ‘sets ajar’ or ‘is keeping ajar’, *obejmuje* ‘puts around’ or ‘is holding around’, *wyciąga* ‘stretches out’ or ‘is holding stretched out’ cited above, or may be a causative (see below).
11. *huwapp-*, *hupp-* ‘to be hostile towards, to do evil against, to hurl, to throw’, Skt. *vap-* ‘to strew, to scatter’. This verb denotes continuous action.
12. *huwart-*, *hurt-* ‘to curse’ denotes incessant action and may refer both to the process and to the resulting state.
13. *iškalla-*, *iškall-* ‘to slit, to split, to tear’, Gr. *skéllō* ‘hoe’. This verb denotes continuous action or may be a causative.
14. *išpār-*, *išpar-* ‘to spread (out), to strew’, Gr. *spéirō*. This verb denotes continuous action.
15. *išparra-*, *išparr-* ‘to trample’ denotes continuous action.
16. *lā-*, *l-* ‘to loosen, to release, to untie, to relieve’, Gothic *letan*. The action entails a resulting state where the subject has no effect on the outside object.
17. *malla-*, *mall-* ‘to mill, to grind’ denotes continuous action.
18. *mālk-*, *malk-* ‘to spin’ denotes continuous action.
19. *māld-*, *mald-* ‘to recite, to make a vow’ denotes continuous action.
20. *mau-*, *mu-* ‘to fall’, Latin *moveō* ‘move’. This verb denotes continuous movement, cf. Czech *letět* ‘to fly’.
21. *nāh-*, *nahh-* ‘to fear, to be(come) afraid, to be respectful, to be careful’. This is a typical perfect.
22. *nai-*, *ni-* ‘to turn, to send’, Skt. *nay-* ‘to lead’. This verb is immediately comparable to Czech *vrtět* ‘to turn’.
23. *para-*, *par-* ‘to appear, to emerge’ may refer either to the process or to the resulting state.
24. *pāšk-*, *pašk-* ‘to stick in, to fasten, to plant, to set up’, which appears to contain a suffix **-sk-*, does not conform to the semantic pattern discussed here and may be a causative (see below).
25. *padda-*, *padd-* ‘to dig (the ground)’, Latin *fodiō*. This verb denotes continuous action.

26. *šāh-* ‘to clog, to stuff, to fill in, to plug up’, Toch. B *soy-* ‘be satisfied’. This verb denotes continuous action or may be a causative. It is reminiscent of Czech *pučet* ‘to swell, to bud, to sprout’.
27. *šākk-*, *šakk-* ‘to know (about), to experience, to recognize, to remember’, Latin *sciō*. This is a typical perfect.
28. *šārr-*, *šarr-* ‘to divide up, to distribute, to split, to separate’ denotes continuous action or may be a causative.
29. *šarta-*, *šart-* ‘to wipe, to rub’ denotes continuous action.
30. *šuhha-*, *šuhh-* ‘to scatter’, Gr. *húō* ‘to rain’. This verb denotes continuous action.
31. *dā-*, *d-* ‘to take, to wed, to decide’, Skt. *dādāti*, Gr. *dídōmi*. The compounds *uda-*, *ud-* ‘to bring (here)’ and *peda-*, *ped-* ‘to take (somewhere), to carry, to transport, to spend (time)’ suggest continuous movement, like Czech *běžet* ‘to run’, cf. also *ūnna-*, *ūnni-* ‘to send (here), to drive (here)’ and *penna-*, *penni-* ‘to drive (there)’ belonging with #22 above. The verb may be identified with Finnish *tuo-* ‘bring’, Hung. *toj-* < Proto-Uralic **toqi-* (cf. Kortlandt 1989: 82 and 2002: 220, Sammallahti 1988: 550), which has evidently preserved the original meaning of continuous movement.
32. *wai-*, *wi-* ‘to cry (out)’ is immediately comparable to Czech *křičet* ‘to shout’.
33. *wāk-*, *wakk-* ‘to bite’, Gr. *ágnūmi* ‘break’, Toch. AB *wāk-* ‘split, burst’. This verb suggests continuous action but may be a causative.
34. *wašta-*, *wašt-* ‘to sin, to offend’ may be compared to #12 above, denoting incessant action.
35. *zāh-*, *zahh-* ‘to hit, to beat’ denotes continuous action or may be a causative.

Oettinger classifies the following verbs as original causatives and iteratives to be compared with the Sanskrit presents in *-áya-* (1979: 414-430). Here again I give Kloekhorst’s translations. The rise of the causative can be attributed to the substitution of a nominative for a dative subject as illustrated with the Georgian example cited above.

36. *ārk-*, *ark-* ‘to cut off, to divide’, Latin (*h*)*erciscō* ‘to divide (an estate)’.
37. *iškār-*, *iškar-* ‘to sting, to stab, to pierce’, Gr. *keírō* ‘cut (off)’.
38. *išpānt-*, *išpant-* ‘to libate, to pour, to sacrifice’, Gr. *spéndō*, Latin *spondeō* ‘pledge, promise’.
39. *ištāp-*, *ištapp-* ‘to plug up, to block, to enclose, to shut’, cf. #10 and #26 above.
40. *kānk-*, *kank-* ‘to hang, to weigh’, Gothic *hahan*.
41. *karāp-*, *kare/ip-* ‘to devour, to consume’, Skt. *grabh-* ‘to seize’. This verb may actually denote continuous action, like Czech *horět* ‘to burn’.
42. *lāhu-*, *lahu-* ‘to pour, to cast (objects from metal), to (over)flow’. The intransitive meaning suggests continuous movement, like Czech *běžet* ‘to run’.

43. *lāk-*, *lak-* ‘to knock out (a tooth), to turn (one’s ears or eyes towards), to train (a vine)’, Gothic *lagjan* ‘to lay down’. This verb looks like a typical causative.
44. *mārk-*, *mark-* ‘to divide, to separate, to distribute, to cut up’ may be compared to #28 and to #36.
45. *šarāp-*, *šare/ip-* ‘to sip’, Latin *sorbeō*.
46. *dākk-*, *dakk-* ‘to resemble’, Gr. *dokēi* ‘seems’.
47. *warš-* ‘to reap, to harvest, to wipe’, Old Latin *vorrō* ‘wipe’, but cf. #29 above.
48. *wāš-* ‘to buy’, Latin *vēnum dare* ‘to sell’.

Unlike the other Indo-European languages, Anatolian evidently created perfects from (imperfective) nasal presents and (perfective) sigmatic aorists:

49. *tarna-*, *tarn-* ‘to let go, to allow, to leave’ < **trk-n(o)q-*.
50. *šunna-*, *šunn-* ‘to fill’ < **su-n(o)q-*.
51. *šanna-*, *šann-* ‘to hide, to conceal’ < **sn-n(o)q-*.
52. *hamank-*, *hame/ink-* ‘to tie, to betroth’ < **qm(o)ng^h-*.
53. *kalank-* ‘to soothe, to satiate, to satisfy’ < **gl(o)ng^h-*.
54. *ānš-* ‘to wipe’ < **qomq-s-*, Gr. *amáo* ‘mow, reap’.
55. *hārš-* ‘to till (the soil)’ < **qorq-s-*, Gr. *aróō* ‘plough’, cf. #7 above.
56. *maz-* ‘to withstand, to resist’ < **m(o)qd^h-s-*.
57. *pahš-* ‘to protect, to guard, to defend’ < **p(o)q-s-*, Latin *pāscō*, *pāvī* ‘graze’.
58. *pāš-*, *paš-* ‘to swallow’ < **p(o)q-s-*, Gr. *pīnō* ‘drink’.

The most frequent suffix of derived perfects in Hittite is *-(o)*i-*, which apparently contributed a sense of directionality and which may (or may not) be identical with Proto-Uralic *-*j-* found in inchoative, terminative, passive, frequentative and continuative verbs (cf. Collinder 1960: 275).

59. *āppa-*, *āppi-* ‘to be finished, to be done’ is a typical perfect.
60. *arai-*, *ari-* ‘to arise, to lift, to raise’, Latin *orior*. This verb denotes directed movement, cf. Czech *běžet* ‘to run’.
61. *halai-*, *hali-* ‘to set in motion’, Gr. *iállō* ‘send off’. This verb also suggests directed movement, cf. #43 above.
62. *halzai-*, *halzi-* ‘to cry out, to shout, to invoke, to recite’, Gothic *laþon*. This verb is comparable to Czech *pištět* ‘to whistle’ and *křičet* ‘to shout’.
63. *huwai-*, *hui-* ‘to run, to hurry, to spread (of vegetation)’, Skt. *vāti* ‘to blow (of wind)’. This verb is comparable to Czech *běžet* ‘to run’.
64. *išhai-*, *išhi-* ‘to bind, to wrap, to obligate with, to impose upon’, Skt. *sā-*, *si-*, perfect *sišāya*. This verb may be compared to Czech *držet* ‘to hold’.
65. *išhamai-*, *išhami-* ‘to sing’ may be compared to Czech *pištět* ‘to whistle’.
66. *išhuwai-*, *išhui-* ‘to throw, to scatter, to pour’, Gr. *húō* ‘to rain’, cf. #38 and #42 above.

67. *išpai-*, *išpi-* ‘to get full, to be satiated’, Skt. *sphā(ya)-* ‘to become fat, to increase’. This verb is reminiscent of Czech *pučet* ‘to swell, to bud, to sprout’.
68. *mai-*, *mi-* ‘to grow (up), to thrive, to prosper, to be born’ is again reminiscent of Czech *pučet*, cf. #8 above.
69. *pai-*, *pi-* ‘to give, to pay, to grant, to hand over’, which is cognate with Hitt. *epp-*, *app-* ‘to take, to seize’, Skt. *āpnóti* ‘to reach, to gain, to obtain’, Latin *apīscor* ‘reach, get’ (cf. also Kloekhorst 2006). This verb is of the type exemplified by Czech (*hosté*) *zaujímalí (svá místa)*, ‘(the guests) took (their places)’ or ‘were sitting’, where English *sat* covers both variants. The meaning ‘to give’ evidently developed from ‘to take there/somewhere’, cf. #31 above. Note that the Sanskrit and Latin verbs are derived imperfectives from the Hittite formations *epp-* and *pai-*, respectively (cf. Kortlandt 2007: 136).
70. *parai-*, *pari-* ‘to blow (a horn), to blow on (a fire), to blow up’, Gr. *pímprēmi*. This verb may be compared to Czech *pištět* ‘to whistle’.
71. *pattai-*, *patti-* ‘to run, to race, to flee, to fly’, Skt. *pátati*, Gr. *pétomai*. This verb is comparable to Czech *běžet* ‘to run’ and *letět* ‘to fly’.
72. *šai-*, *ši-* ‘to impress, to seal, to sting, to shoot, to throw’, Latin *serō*, Gothic *saian* ‘to sow’. This verb denotes directed action and is reminiscent of Czech *vtřít* ‘to turn, to shake, to churn’.
73. *dai-*, *ti-* ‘to lay, to put, to place’ < **d^hq-(o)i-* denotes directed action, cf. also #31 and #69 above.
74. *tarai-*, *tari-* ‘to exert oneself, to become tired’ denotes directed action and is reminiscent of Czech *běžet* ‘to run’.
75. *zai-*, *zi-* ‘to cross (over)’, Skt. *at-* ‘to wander, to roam’. The Hittite verb denotes directed movement, like Czech *běžet* ‘to run’.

Reduplication appears to have added intensive meaning, but the number of examples is limited. There are three verbs which look like Indo-European reduplicated perfects and aorists, all of which are formally and semantically comparable to Skt. *uvāca*, *vavāca*, *ávocat* ‘spoke’ < **we-w(o)k^{w-}*.

76. *mēma-*, *mēmi-* ‘to speak, to recite, to tell’ < **me-m(o)i-*, perhaps cognate with Skt. *minóti* ‘to establish’.
77. *wewakk-* ‘to demand, to ask’ < **we-wok-*, which is cognate with *wekk-* ‘to wish, to desire, to ask for’, Skt. *vaś-*.
78. *hanna-*, *hann-* ‘to sue, to judge’ < **qe-qn(o)q-*, cognate with Gr. *ónomai* ‘blame’.

There are eight verbs with *-i-* in the reduplication syllable, which suggests that they were derived from reduplicated presents like Skt. *vívakti* ‘speaks’:

79. *halihla-*, *halihli-* ‘to genuflect, to make obeisance to’ < **qli-ql(o)i-*, which is cognate with *halije/a-* ‘to kneel down’ and probably with #61 *halai-*, *hali-* ‘to set in motion’, cf. Czech *klečēt*, *klekat* cited above.
80. *lilhuwa-*, *lilhui-* ‘to pour’ < **li-lqu(o)i-*, which is cognate with #42 *lāhu-*, *lahu-*, also *lilahu-* ‘to pour’.
81. *mimma-*, *mimm-* ‘to refuse, to reject’ < **mi-m(o)q-*.
82. *parip(p)ara-*, *parip(p)ari-* ‘to blow a horn’ < **pri-prq(o)i-* is a derivative of #70 *parai-*, *pari-*, also *papra-*, *papri-* ‘to blow’, Gr. *pímprēmi*.
83. *pippa-*, *pipp-* ‘to knock down, to tear down, to destroy, to throw up’ < **pi-p(o)q-* may be cognate with #58 *pāš-*, *paš-* ‘to swallow’ (cf. ‘the earth swallowed them up’).
84. *šišha-*, *šišh-* ‘to decide, to appoint’ < **si-sq(o)i-* is cognate with #64 *išhai-*, *išhi-* ‘to bind’, Skt. *sā-*, *si-*.
85. *titta-*, *titti-* ‘to install, to assign’ < **d^hi-d^hq(o)i-* is cognate with #73 *dai-*, *ti-*, also *tāišta-*, *tāišti-* ‘to load’ < **d^hoqes-d^hq(o)i-*, Gr. *títhēmi*.
86. *wiwa-*, *wiwi-* ‘to cry’ < **wi-w(o)i-* is cognate with #32 *wai-*, *wi-*.

Both the combined presence of *i*-reduplication and *i*-suffixation in most of these verbs and their coexistence with simpler formations show that this was a productive type in pre-Hittite. The derivation of *hi*-verbs from nasal presents and sigmatic aorists points in the same direction. We may therefore conclude that the exclusive derivation of perfects from the root attested in the other Indo-European languages represents a more archaic state of affairs. After the loss of the dative subject construction, the *hi*-flexion evidently became a device to supply imperfective verbs in the way envisaged by Kølln as formulated in the quotation above. Since the Slavic verbs in *-ěti* clearly represent the Indo-European perfect, we may wonder if the same holds for the verbs in *-iti*. Both verb classes have an *i*-present reflecting an athematic flexion type with full grade **-ei-* in the singular and zero grade **-i-* in the plural (cf. Kortlandt 1979: 61 and 1987: 107). This type can be identified with the flexion of Latin *capio* ‘take’ (cf. Kortlandt 2007: 134), Gothic *hafjan* ‘to raise’. It has a twofold origin. On the one hand, the derivation of Hittite *hi*-verbs from reduplicated and nasal presents suggests that *hi*-verbs with the suffix **-(o)i-* may similarly have been derived from athematic *i*-presents. On the other hand, the intransitive Slavic verbs in *-ěti* clearly correspond to an original perfect, which can now be identified with the Hittite *hi*-verbs in **-(o)i-*. It follows that the latter formation must be reconstructed for the Indo-European proto-language. It is reflected in Skt. *kupya-* ‘be angry’, *tušya-* ‘be content’, *tṣya-* ‘be thirsty’, *dṣhya-* ‘be firm’, *búdhya-* ‘be awake’, *mánya-* ‘think’, *yúdhya-* ‘fight’, *lúbhya-* ‘be confused’, *hṣya-* ‘be exited’, Gr. *maínomai* ‘be furious’, *phainomai* ‘appear’, *khatrō* ‘rejoice’, Latin *cupio* ‘desire’, *fugio* ‘flee’, *patior* ‘suffer’, Old Irish *do-moinethar* ‘think’.

What happened to the original athematic *i*-presents? Latin *facio* ‘make’ and *iacio* ‘throw’ show that the type must have been productive at an early stage. At that

time, the stem-final vowel of the thematic flexion appears to have been an object marker (cf. Kortlandt 1983). Traditional Sanskrit grammar distinguishes between 1st class presents with an accented full grade root and unaccented thematic *-a-*, which are historically identical with the subjunctives of athematic verbs (cf. Renou 1932), 4th class presents with a mostly accented zero grade root and the suffix *-ya-*, 6th class presents with an unaccented zero grade root and accented thematic *-á-*, e.g. *tudáti* ‘to thrust’, which are characteristically accompanied by an implicit or explicit totally affected definite object experiencing a change of state as a result of the action (cf. Renou 1925), and 10th class presents, especially causatives with an original *o*-grade root and the accented suffix *-áya-*. The 1st class can be explained from the original syntax with a dative subject and a nominative object (cf. Kortlandt 1983: 319). The 4th class can now be identified with the original perfect in **(o)i-* reflected in the Hittite material. The 6th class represents an original transitive construction with an ergative subject and a nominative object. The 10th class causatives combine the *o*-grade of the Hittite simple *hi*-verbs with the full grade suffix **-ei-* expected in the objective (= thematic) flexion of the athematic *i*-presents. If this suffix contributed a sense of directionality and the thematic flexion reflects its transitivity, their combination is an appropriate device to derive causatives from *o*-grade perfects.

There is no evidence for Anatolian formations corresponding to the Sanskrit 1st and 10th class presents (or thematic subjunctives of athematic verbs) with an accented *e*-grade in the root or the suffix preceding the thematic vowel. I therefore think that these formations originated after the exodus of the Anatolians from the Indo-European homeland in the Ukraine. At that time, the thematic vowel was evidently added to a stem with zero grades only. It follows that the original objective flexion of athematic *i*-presents should appear as Sanskrit 6th class presents with the accented suffix *-yá-*. This is the type *syáti* ‘to bind’ recently discussed by Kulikov (2000, cf. also 2001: 493-508). While the ergative construction was lost in Proto-Indo-European times already, giving rise to the sigmatic nominative and to thematic nouns with a nominative in **-os* and an accusative in **-om* (cf. Beekes 1985: 172-195), the dative construction evidently persisted until after the rise of the thematic subjunctive in the non-Anatolian languages. After the loss of the ergative construction, the accented suffix **-ie/o-* could easily spread as a suitable device to derive imperfective presents, primarily of transitive verbs. The introduction of full grade stems before the thematic vowel (or the addition of the thematic vowel to full grade stems) now differentiated the original thematic present flexion with a dative subject from the new thematic present flexion with a nominative subject in the non-Anatolian languages, e.g. Skt. *dáya-* ‘distribute’ beside *dyá-* ‘cut’ (cf. Kulikov 2000: 277f.). The new suffix **-eie/o-* then spread to *o*-grade perfects before the substitution of a nominative for a dative subject which gave rise to 10th class causatives as illustrated with the Georgian example cited above.

The remaining question is: what happened to the athematic *i*-presents and to the simple thematic flexion (Sanskrit 6th class presents) in Anatolian? While the former can easily have been thematicized and appear as *mi*-verbs in Hittite, the latter seem to correspond to the causative *hi*-verbs. When the dative subject construction was lost at an early stage in Anatolian, the nominative construction which had replaced the pre-Indo-European ergative construction with transitive thematic verbs was semantically closer to the perfect than to the formally similar suffixed thematic presents, cf. Skt. *ávocat* ‘spoke’ < ‘he uttered the word’ beside *uvāca*, *vavāca* ‘spoke’ < ‘the word escaped him’. At this stage, the *hi*-flexion may have replaced the simple thematic flexion in pre-Hittite. The original type may have been preserved as a distinct class of *hi*-verbs in the non-ablauting factitives in *-ahh-* < **-eqe/o-*, e.g. *happinahhahhi* ‘I enrich’, which were replaced by verbs in **-eqie/o-* in the non-Anatolian languages.

Summarizing we arrive at the following picture. The elimination of the pre-Indo-European ergative construction was a common development of the Indo-European languages which gave rise to sigmatic nominatives and to the new category of nominal *o*-stems. As a result, thematic verb forms now had a nominative subject and an accusative object (as did athematic verb forms) if the verb was transitive but an indirect object which could be reanalyzed as a dative subject if the verb was intransitive (as was also the case in the perfect). This ambiguity gave rise to middle paradigms, which supplied intransitive verb forms to transitive verbs. The creation of derived perfects from athematic *i*-presents also belongs to the Indo-European proto-language, but the derivation of perfects from reduplicated and nasal presents and sigmatic aorists was evidently limited to the Anatolian branch. When the nominative replaced the dative subject of perfects and thematic presents in Anatolian, the older transitive thematic verbs (corresponding to the Sanskrit 6th class presents) adopted the endings of the perfect, giving rise to the *hi*-flexion. On the basis of both athematic presents and perfects, the non-Anatolian languages created a new class of indeterminate presents with a dative subject, a full grade stem and thematic endings, which developed into the Sanskrit 1st and 10th class presents and the subjunctive of athematic presents. When the nominative replaced the dative subject in these languages, the indeterminate presents which were derived from *o*-grade perfects developed into causatives and iteratives in the way discussed above. The central Indo-European languages (at least Indo-Iranian and Greek, but not Italo-Celtic, cf. Kortlandt 2007: 151-154) finally created a subjunctive of thematic presents by inserting another thematic vowel before the endings.

A final question is: where did the various stem formatives come from? As I have indicated elsewhere (2002: 219), I think that nominalizing **-i-*, **-m-*, **-s-*, participial **-l-*, **-n-*, **-t-*, **-nt-* and conative **-sk-* are of Indo-Uralic origin. It is attractive to identify the last of these with Tocharian A *ske-*, B *skai-* ‘to attempt’, which suggests that other verbal suffixes may also go back to simple verbs. I am therefore inclined to identify the Indo-European present stem formatives **-(e)i-*, **-(e)m-*, **-(e)s-*, **-n-*,

*-*t/d^h*- with the roots ‘to go’, ‘to take’, ‘to be’, ‘to lead’, ‘to put’, like *-*sk*- with the root ‘to try’. A comparison of these elements with the Uralic verbal suffixes *-*j*-, *-*m*-, *-*n*-, *-*t*- (cf. Collinder 1960: 272-281) remains a task for the future.

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