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Late Egyptian counterfactual conditionals and counterfactual reasoning

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It is a distinct pleasure to offer a contribution to celebrate John and his work. I hope he will find the following exploration of reasoning with counterfactual conditionals in Late Egyptian of some interest; I would like to think that, albeit from a rather different direction, it complements some of John's own work, such as his engagement with Berlin and Kay's discussion of colour terms in relation to the empirical evidence surviving from ancient Egypt. In deference to John's known views, I avoid footnotes, and, for this reason, I have restricted the referencing and bibliography in ways I doubt I would ordinarily have been able to force myself to do, though I wonder whether he will be as content with that.

In discussing Late Egyptian counterfactual conditionals and how they are used in counterfactual reasoning, I will be looking in more detail at the steps in understanding these conditionals than is usual in Egyptology. In so doing I will be drawing on investigations of reasoning associated with counterfactual conditionals from psychology, on modelling of conditional use in cognitive science, as well as on discussions of cross-linguistic properties of conditionals. I am particularly interested in the unstated but implicated elements of the reasoning processes (inferences), since these provide significant comment on ancient cognitive processing of such conditionals. In particular, in these domains at least, the evidence would seem to suggest that ancient Egyptian reasoners utilized the same (unconscious) rational, cognitive reasoning processes which have been investigated for modern (principally western) reasoners (or, at least, an ancient Egyptian reasoner can be successfully and satisfyingly read through modelling with these attributes). As such, I am here investigating what the psychologist Ruth Byrne (2005) has termed the 'rational imagination' as attested from ancient Egypt, some 3,000 years ago.

I *h-n* conditionals

Conditionals introduced with *h-n* provide the canonical examples of past counterfactual conditionals in Late Egyptian.

Example 1 Wenamun, 2, 28–32

In The Report of Wenamun, Tjekerbaal has provided evidence from records that previous rulers of Egypt

paid for the timber for the bark of Amun-Re, since, he notes, they did not have direct control over Byblos, and Tjekerbaal is also himself not the servant of Egypt's temporal rulers. Wenamun responds by rebuilding his case directly around the god Amun/Amun-Re. After an initial discussion of Amun's universal sway and how the god's travelling image has been neglected by Tjekerbaal, Wenamun directly exploits Tjekerbaal's argument to reconfigure his own:

ir p3y=k dd wn n3 nsy h3wty dit in.tw hd nbw, h-n wn (m)-di=w ‘nh snb, wn bn iw=w dit in.tw n3 (3)ht; i-ir=w dit in.tw n3 3ht (r)-db3 ‘nh snb (n) n3y=k it(y).

hr ir imn-r‘ nsrw mnfp3 nb n p3 ‘nh snb; hr mnfp3 nb n n3y=k ity. iry=w p3y=w ‘h5 n ‘nh iu=w wdn n imn. mnk m-r‘ mnkt b3k n imn

'As for your saying that previous kings used to have silver and gold sent, if they had had life and health, they would not have had these things [silver and gold] sent; they did send these things – but only instead of life and health – to your ancestors. Now, as for Amun-Re king of the gods, he is the master of life and health and he is the master of your ancestors. They spent their lifetime offering to Amun. You too, you are a servant of Amun.'

Counterfactual conditionals are not ordinarily used simply to imagine alternative states of affairs in and for themselves nor to explore those imagined states of affairs in detail ('counterfactuality' as it were). Rather, they are used, through the imagining of alternatives, to augment discussion and understanding of states of affairs as they actually are or, at least, as they are presented or taken to be by the user of the conditional ('factuality', if I may coin a rather infelicitous term), and draw directly on those actual states of affairs as a base for understanding the counterfactual.

So, in example 1, central elements are directly inherited from 'factuality', at least as Wenamun re-presents Tjekerbaal's point: here the participants (previous kings of Egypt and previous rulers of Byblos) and the situation of obtaining timber for the bark of Amun-Re are inherited directly. That is, although the counterfactual may be partitioned from the surrounding context in its counterfactuality, it is grounded in and inherits structure and information from that context (cf. Fauconnier 1997: 14–18). As such, much of the 'factuality' (things as they are or as presented or taken to be) is accepted into, and/or is recoverable from (cf. Byrne 2005: 11), the counterfactual conditional.

It is in one key area that the counterfactual antecedent in example 1 explicitly differs from factuality. The counterfactual alteration is, of course, that in the imagined situation, and contrary to (f)actuality as presented, (relevant recent) previous Egyptian kings are imagined as controlling life and health, and it is the imagined outcome of this alteration which is posited in the counterfactual consequent: that in such an imagined situation previous kings of Egypt would not have had to pay for the timber through sending silver and gold. As with the use of counterfactual conditionals in well-studied languages, there is no attempt to flesh out this counterfactual state of affairs beyond the immediate need (for example by investigating how the consequences of this altered vision of Egyptian kings having direct control or influence over Byblos would have radiated out over and altered the historical time-line in numerous ways); the purpose of the imagined situation is to enrich understanding of the current (f)actual state of affairs under discussion.

Reasoning with counterfactual conditionals also involves what I shall term an *implicated obverse*, a pragmatically implicated direct alternate to the conditional as actually stated, its direct obverse (which is thus the corresponding assumed factual situation), which is borne in mind by human reasoners (cf. Byrne 2005: 30–36). In this case, the obverse involves the direct negation of both the antecedent and the consequent of the conditional, and I shall term this the *implicated full obverse*. That is, in reasoning with the counterfactual conditional:

- counterfac: [previous rulers control life and health] > [rulers not send silver and gold]

the following obverse (assumed-to-be) factual relationship is implicated:

- implic f-o: [previous rulers not control life and health] > [rulers send silver and gold]

This implicated obverse is closely analogous, of course, to the position put forward by Tjekerbaal, but crucially is augmented through the feature of [- control life and health], and thus takes on Tjekerbaal's point but builds upon it by explicitly introducing the issue of controlling life and health into the argument and linking it in a conditional relationship with the issue of sending silver and gold.

In this way the counterfactual conditional and its implicated full obverse provide an enriched context for Wenamun to work with. Through the counterfactual conditional and its implicated obverse Wenamun has put forward the point that controlling life and health

(power) and sending silver and gold (payment) are alternate means for being able to secure timber for the bark of Amun-Re, but alternate means with a clear scalar ranking: controlling life and health is presented as a higher option in this context (for the Egyptians and for Wenamun), whereas payment is a lower option only activated should there be a failure to control life and health. This allows Wenamun to develop his argument further first in relation to previous kings and then by turning to the god.

For the case of previous kings, Wenamun's argument draws on the implicated full obverse factual position that previous kings not controlling life and health would result in them sending silver and gold. He makes it expressly clear in the immediately following second-tense construction that his point is that such payment was sent instead of life and health, and thus as the lower option they were restricted to.

The stated counterfactual conditional provides the direct frame in which Wenamun articulates his argument centred on the god Amun-Re. Wenamun has already asserted the universal sway of the god (as Amun) and now specifically asserts that Amun-Re controls life and health and is the master of Tjekerbaal and his ancestors. If one accepts and follows the reasoning process, the inescapable conclusion is that Amun/Amun-Re should not pay for the timber; yet, and this is something of particular note, this conclusion is *not* explicitly stated in the text, though it is the consequence that a rational agent following the reasoning process would infer Wenamun to be implying, and it is surely one which any successful reading of this passage, whether ancient or modern, requires. The steps in reasoning are:

- counterfac: previous kings [+ control life and health] > not send silver and gold
- (implicated f-o: previous kings [- control life and health] > send silver and gold)
- statement: Amun-Re [+ control life and health]
- replacement: Amun-Re [+ control life and health] > not send silver and gold
- inference: Amun-Re not send silver and gold

An important step in reasoning to the concluding inference is that Amun-Re is a suitable replacement for previous kings in the original frame linking possession of life and health with not having to send silver and gold. That is, there are a series of counterpart relationships here. In the original counterfactual conditional and in Wenamun's immediate follow-up to the conditional, 'previous kings' are projected through real and counterfactual space with the same referent (counterpart

replication), whereas once Wenamun has established that Amun-Re meets the matching conditions for the role of ‘previous kings’ in the original counterfactual conditional (as the master of life and health; Amun-Re is also explicitly characterized as ‘king of the gods’), this makes ‘Amun-Re’ eligible as a counterpart (counterpart replacement: Amun-Re is matched as a counterpart and can replace the original ‘previous kings’). There is again a scalar component to this as well in that the god is clearly presented as a more powerful figure than previous kings and so what should be applicable to them (control life and health > not pay) should all the more be applicable to the god. Of course, since the god is asserted to control life and health in actuality, then the replacement frame with Amun-Re in the antecedent is not counterfactual, but factual (if/since Amun-Re [+ control life and health] > not pay silver and gold), and so, therefore, is its consequent.

Once this replacement is made, then, in conjunction with the assertion of Amun-Re [+ control life and health], we have standard *modus ponens* reasoning, allowing the straightforward rational inference of [Amun-Re not send silver and gold]. So Wenamun utilizes the frame of the counterfactual with replacement of Amun-Re for previous kings to generate an implicated (but unstated) outcome that Amun-Re should not have to pay for the timber for his bark, thus concluding his movement from Tjekerbaal’s demonstration that previous rulers paid for the acquisition of timber to his own case that the god should not have to pay. A visual summary is given in Figure 1.

In the end, of course, all this sets the scene for Wenamun’s ultimate compromise, which is to recognize that he must seek financial resource from Egypt to pay Tjekerbaal (the secular frame, as it were), and thus that Tjekerbaal will derive direct financial benefit from the transaction (Wenamun, 2, 34–37), but that this should run parallel to the sacral frame of the divine authority of Amun, and that in terms of this frame Tjekerbaal is operating as a proper servant of the god and he will derive the broader benefits of well-being and health and good rule (Wenamun, 2, 32–33).

The second example also comes from Wenamun. Having gone into example 1 in detail, I can be brief here:

Example 2 Wenamun, 1, 17–21

Wenamun has reached the town of Dor. There, a man from his ship has fled taking with him Wenamun’s valuables. Wenamun goes to Bador, the prince of Dor, and says that he has been robbed in Bador’s harbour and asks him to search for his money. He then says that the money belongs to (is the responsibility of) a host of individuals including Bador. Bador’s response includes the following direct comment on this:

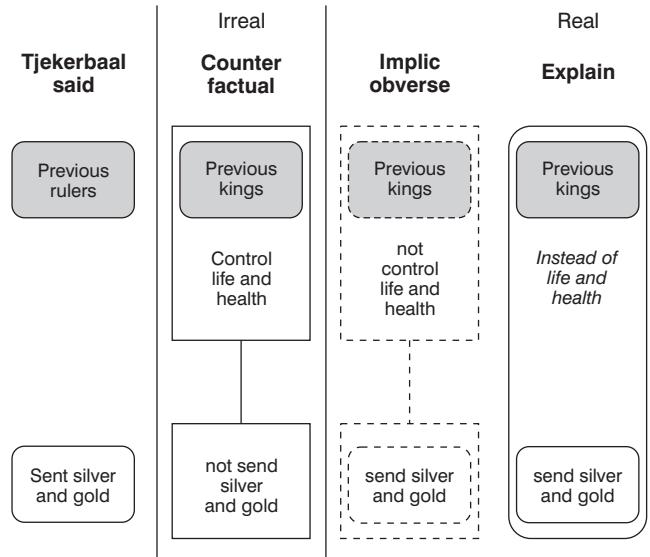


Fig. 1 Visual summary of Example 1.

Key:

ordinary line = overtly stated

dotted line = implicated

rectangles with connector = conditional

cut rectangle = elements introduced through the counterfactual
grey = matching elements in constructing the concluding inference

*hr pt(r)i bw ir=i ḡm n tȝy wȝbt i-dd=k. h-n itȝy iw n-sw pȝy=i
tȝ pȝ hȝy r tȝy=k b-r, mtw=f tȝy pȝy=k hd, wn iw=i dbȝ=f n=k
m pȝy=i wdȝ, ȝȝ. tw=w gm pȝy=k itȝy n rn=f. yȝ ir pȝ itȝy
i-tȝy tw, mntk sw, n-sw tȝy=k b-r. i-ir nhȝ hrw dy (r)-kȝi-n=i,
wȝȝ=i sw*

‘Now, look, I don’t understand this response you’ve given. If it had been a thief belonging to my land who had boarded your ship and stolen your money, I would compensate you from my own storehouse, until your thief had been found, whoever he is. In fact, the thief who robbed you, he is one of yours, he’s from your own ship. Spend a few days with me, so I can look for him.’

The counterfactual situation accepts the theft but imagines, contrary to fact (as presented by Bador), that the thief belonged to Bador’s land (and thus falls under Bador’s responsibility). In Bador’s stated view, this would lead Bador to compensate Wenamun for the loss. The implicated full obverse is then: [thief who stole your money not belong to my land] > [I not compensate you]. Once again, as with the first example, adding in an extra ingredient in the counterfactual conditional (this time considering the specific case of the thief who stole the money as belonging to Bador’s land and then following through the consequences) allows Bador to follow up either or both the stated situation (a counterfactual conditional) and its implicated obverse (equating to the factual situation, as presented by Bador). This time, it is the implicated full obverse which provides the principal resource for reasoning. Bador asserts that the thief is one of Wenamun’s people; counterpart matching allows for the insertion of that characterization of the thief into the implicated

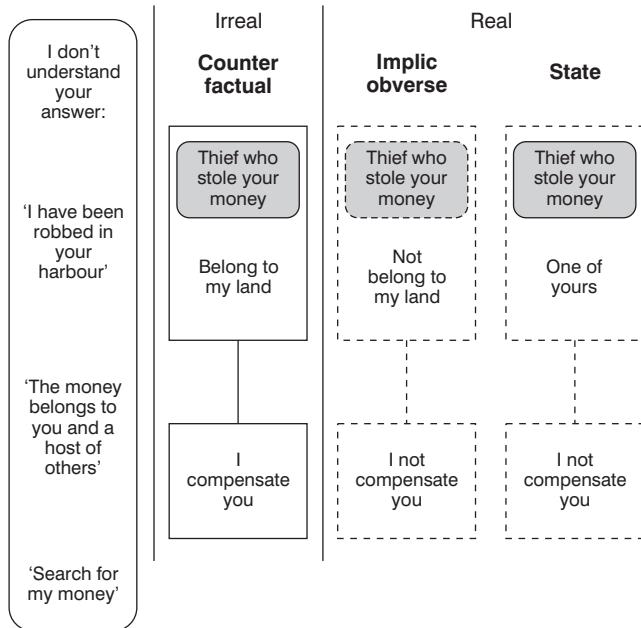


Fig. 2 Visual summary of Example 2.

full obverse conditional relationship and, by *modus ponens*, the inference from the assertion and the implicated conditional relationship, that Bador should not compensate Wenamun (rather he offers just to search for the thief, thus nicely altering Wenamun's original demand to search for the money):

- (counterfac: thief belong to your land > I compensate you)
- implic f-o: thief not belong to my land > I not compensate you
- statement: thief one of yours
- replacement: thief one of yours > I not compensate you
- inference: I not compensate you

Notice that once again, the final, rather significant inference that Bador should not compensate Wenamun remains unstated in the text but is a clear inference available to a rational human agent, whether ancient or modern, if the argument is followed through. A visual summary is given in Figure 2.

The final *h-n* counterfactual conditional discussed here comes from a tomb robbery response attested a number of times in the written record of the proceedings.

Example 3 P. BM EA 10052, 4, 13

The trumpeter Amenkhau denies involvement in the robberies. He asserts that 'I didn't see anything', and then strengthens his denial with the following counterfactual:

h-n pt(r)i=i, wn iw=i dd=f
If I had seen (anything), I would tell it.

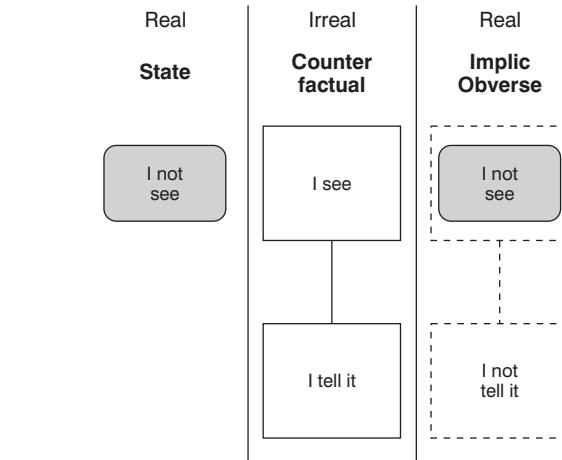


Fig. 3 Visual summary of Example 3.

By positing the counterfactual conditional that [I see] > [I tell it], the testimony implicates the (presented as) factual full obverse [I not see] > [I not tell it]. From the original negative assertion and from the implicated full obverse, by *modus ponens* the inference [I not tell it] can be drawn:

- statement: I not see
- (counterfac: I see > I tell it)
- implic f-o: I not see > I not tell it
- inference: I not tell it

In this way, via the implicated full obverse relationship, the testimony links Amenkhau's failure to tell anything about the robberies directly back to his assertion that he didn't see anything (he wasn't involved in the robberies): he was unable to say anything for the reason that he didn't see anything. A visual summary is given in Figure 3.

2 *ir* conditionals

Counterfactual meaning can also be found with both *ir*-conditionals (projective if/when type conditionals) and *inn*-conditionals (epistemic if/since type conditionals). *ir*-conditionals ordinarily provide the basic forward-looking conditional in which an as-yet unrealized possibility is entertained and the consequences of that possibility posited (English grammar books often have examples of the form 'If it rains tomorrow, the game will be cancelled', the implicated full obverse/alternate of which is: [not rain tomorrow] > [game not cancelled]; notice there may be other reasons for why the game may or may not go ahead, so how apposite the implicated full obverse is depends on context and how far the antecedent-event can be construed, in the

practicalities of the context, as a plausible exclusive condition for the realization of the consequent).

There are also examples of *ir* conditionals with a clear concessive or semifactual reading ('even if'). These conditionals have rather different properties from standard projective *ir* conditionals. The clearest examples are those with a circumstantial non-verbal sentence antecedent, which is more readily construed as a static alternate to current reality rather than as a dynamic prospective possibility, and thus as counterfactual. In the context of the current paper, the feature of particular interest is that such concessive counterfactual or semifactual conditionals implicate a partial obverse: the obverse contains the negative of the antecedent, but retains the consequent in its stated form.

Example 4 P. Turin 2021, 3, 11–12

The god's father Amenkhau has made his settlement of property on his new wife and on his children by his previous wife. His children have agreed to their father's division of property. The vizier responds with a conditional and then states his decision that the property will be divided as stated. The conditional is:

ir iw bn hmt s3wt, iw h-r [nh]s iw mr=f sw [i]w=f dit n=s 3ht=f, [nym i]-ir=f wsf p3 iry=f

'(Even) if it were not his wife, but a Syrian or a Nubian whom he loved and gave his property to, who would cancel what he has done?'

In semifactual cases such as this, the implicated full obverse delivers the wrong meaning:

- [his wife, not a Syrian or Nubian] > [who would not cancel what he has done]

In context, the negation is singularly inappropriate in the consequent clause; that is, whilst the negation of the antecedent correctly applies to reality in the implicated obverse, this is not so for the consequent. Indeed the consequent applies in its stated form both to the stated counterfactual antecedent and its implicated factual obverse antecedent (hence the term semifactual). As such the correct reading is an *implicated partial obverse*:

- [his wife, not a Syrian or Nubian] > [who would cancel what he has done]

As I have discussed elsewhere (Collier 2009: 15–17), in a conditional such as that in example 4, the antecedent is construed inclusively, as a member of a scalar-ordered set of antecedents in which the stated condition is treated as the pseudo-superlative limiting condition (cf. König 1986: 236); in this case the stated instance of the imagined Syrian or Nubian partner is construed as the pseudo-superlative limiting condition to the set which

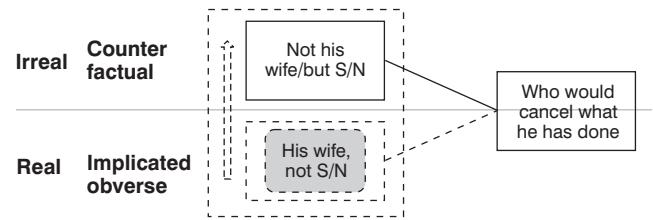


Fig. 4 Visual summary of Example 4.

also includes the implicated obverse ('factual') condition of [his wife, not a Syrian or Nubian] (cf. Byrne 2005: ch. 6). The consequent applies to the antecedent set as a whole (see Haspelmath and König 1998: 565), and is thus projected across both the counterfactual and factual domains; that is, the imagined Syrian or Nubian partner is treated as something of an extreme example, so if the consequent (the rhetorical question) applies in that case, the more it should apply in the case of the implicated state of affairs, which is the actual case of the new wife. A visual summary is given in Figure 4.

So the reasoning is:

- counterfac: not his wife, but S/N > who would cancel
- implic p-o: his wife, not S/N > who would cancel
- inference: who would cancel

Essentially the vizier asks the question 'who would cancel what he has done' of the current state of affairs with the new wife, but rather than stating this simply, he strengthens the intended rhetorical force of the question by positing a semifactual situation in which a more extreme example holds than the current case, thus encouraging the audience to accept that if they take the state of affairs offered in the conditional as stated they should also take it in its implicated partial obverse.

Although the context for the following late Ramessid letter example is complex and not as fully clear as one might like, the sense of the conditional itself seems clear enough:

Example 5 P. Bib. Nat. 198 II (= LRL no. 46), vs. 6–7

The writer takes issue with the addressee's anger at him for telling a joke about him. He tells another joke to reinforce his stance (but notes that, nevertheless, he is concerned about him). They just don't see eye to eye:

ir iw=k m bty, bn iw=i h3y r n3y=k skty

'(Even) if you were vizier, I wouldn't get into your boats.'

Once again an imagined pseudo-superlative state of affairs (the addressee imagined as vizier) is deployed as a bounding item to a scalar-ordered set of antecedents, including the stated antecedent (the imagined

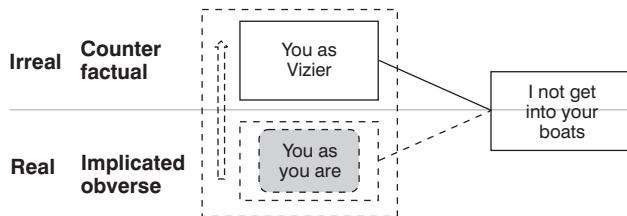


Fig. 5 Visual summary of Example 5.

counterfact of you being vizier) and its implicated obverse (the actual state of affairs of you not as vizier, but you as you are now). The consequent applies to this set and thus applies both to the counterfactual antecedent and to its factual implicated obverse. A visual summary is given in Figure 5.

Utilizing the vivid boating imagery, the writer seems to be using the imagined extreme case of him not getting into the addressee's boats if the addressee were as important a figure as the vizier to implicate strongly that he is even less likely to be in accord with the addressee in the actual state of affairs.

3 *inn* conditionals

Finally, an example of an *inn*-conditional with counterfactual meaning. Once again, as with *ir*-conditionals, the distinction between factual and counterfactual conditionals is not always easy to draw, so I will concentrate on a single example in which the alternate-to-reality sense seems clear enough in that the user of the conditional clearly does not accept the antecedent counterpart, and indeed is deploying this counterfactual conditional precisely so that the recipient can himself recognize the conditional to be contrary-to-fact (here based on empirical observation related to the consequent) and thus utilize that in his own reasoning (the example is discussed in more detail in Collier 2009: 21–25).

Example 6 P. BM EA 10375 (= LRL no. 28), vs. 1

The scribe Butehamun is stressing to his lord, the general Piankh, that the workgang are carrying out all their tasks as diligently as they can, even in the face of problems. He reinforces this with the following conditional:

*inn bn i-ir=n b3k n=k m ib h3ty=n, iw=n h3b r dit ‘m p3y=n
nb*

'If we were not working for you heart and soul, then we would write to let our lord know'

Butehamun entertains a situation in which the workmen are not working hard enough for their lord, the general Piankh. He posits that the consequence of this would be that they would inform their lord, were this the case (however believable or otherwise this may be). Of

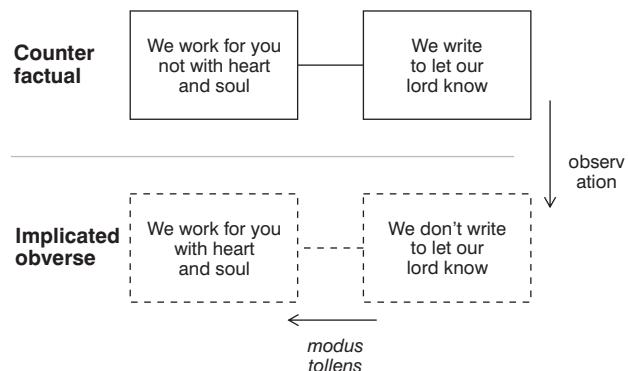


Fig. 6 Visual summary of Example 6.

course, Butehamun is here relying on the position of the recipient: Piankh can have empirical observation (through letters) of what the workmen are telling him, but not direct empirical observation of what they are actually doing. Butehamun offers a means of linking these together through what the workmen (through Butehamun) tell the general:

- counterfac: [we work for you, not > [we inform you of
with heart and soul] not working h&s]

The implicated full obverse is (taking into account the scope properties of the negation in the stated antecedent and resolving the implicit reference in the consequent to what would be made known):

- Implic f-o: [we work for you, with heart and soul] > [we not inform you of not working h&s]

The clear point is that the general can see for himself that the workmen are not informing him that they are not working for the general as fully as they can (indeed Butehamun has gone to great lengths to explain the recent overlapping history of the arrival of letters and how he read them out to the workmen as fast he could and how they assented immediately to undertaking the tasks set before them). As such, Piankh, if he takes the conditional at face value, can from observation see that the consequent does not hold and he can thus reason by *modus tollens* that the obverse of the antecedent as stated is the case: they are working for him heart and soul:

- (counterfac: we work for you, not heart and soul > we inform you of not working h&s)
 - implic f-o: we work for you, heart and soul > we not inform you of not working h&s
 - observation: we not inform of you not working h&s
 - inference: we work for you, heart and soul

A visual summary is given in Figure 6.

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