

Let us consider the three examples of DOI that Scharf discusses in his review of my doctoral thesis. He writes:

“...consider the derivation of the form *bhavanti*, third-person plural present active indicative of the root *bhū*. At the stage *bhū a anti* two rules apply (1) A. 7.3.84 *sārvadhātukārdhadhātukayoḥ (guṇaḥ 82)* which provides replacement of the final vowel *ū* of the stem *bhū* before the stem-forming affix *śap*, and (2) A. 6.1.97 *ato guṇe (pararūpam 94)*. Rajpopat’s procedure would select the righthand operation A. 6.1.97 resulting in *bhū anti*. Now the affix *anti*, unlike *śap* is not marked with *p* so that it becomes marked with *ñ* by A. 1.2.4 *sarvadhātukam apit (ñit 1)*. Because it is marked with *ñ* the metarule A. 1.2.5 *knīti ca* prevents *guṇa* which would occur by the application of A.7.3.84. After the application of A. 6.4.77 *aci śnudhātubhruvām yvor iyañuvañau*, the incorrect form *\*bhuvanti* would then result.”

Here Scharf starts the derivation with *bhū a anti* and then claims that this leads to problems – if my method is followed. But he should start with *bhū a jhi* (and NOT *bhū a anti*). I apply 7.1.3 *jho’ntaḥ*, which teaches the replacement of *jh* with *ant*, and which lies in the *aṅgādhikāra*, only when *jhi* is preceded by an *aṅga*. I do not call *bhū + a* an *aṅga* (see chapter four of my thesis for my interpretation of 1.4.13 *yasmāt pratyayavidhis tadādi pratyaye’ṅgam* and 6.4.1 *aṅgasya*). It is only after *bhū* and *a* have been fused into a single base that I call them, together, *aṅga*, with respect to *jhi*. So, the problem Scharf discusses simply does not arise if my interpretation of Pāṇini’s rules is followed properly. Here is how the derivation of *bhavanti* proceeds, in my view:

*bhū jhi* → *bhū a jhi* → *bho a jhi* → *bhav a jhi* → *bhava jhi* → *bhava anti* → *bhavanti*

Let’s go to the next example. He writes:

“consider the derivation of the form *ajābhiḥ*, feminine instrumental plural ‘she-goat’. At the stage after the introduction of the instrumental plural termination *bhis* we have the string *aja bhis*. Here two rules are applicable (1) A.4.1.4 *ajādyataḥ ṭāp* which introduces the feminine affix *ā* after the nominal bases *aja*, and (2) A. 7.1.9 *ato bhisa ais* which replaces the nominal termination *bhis* after a stem ending in *a* by *ais*. By his DOI principle, A.7.1.9 will apply yielding the string *aja ais*. A. 4.1.3 would then apply to yield *aja ā ais* and ultimately *ajaiḥ*, which is incorrect.”

Here Scharf starts the derivation with *aja bhis* and then, AFTER THAT, adds the feminine affix *ā*. But *aja* is not our intended *arthavad prātipadika* (cf. 1.2.45 *arthavad adhātur apratyayaḥ prātipadikam*) so it cannot take *svaujasa...* i.e., declensional affixes including *bhis* (cf. 4.1.2 *svaujas...*) unless it becomes *ajā*, after which by 4.1.1 *nyāp prātipadikāt* it can take such declensional affixes. So once again, this is not an acceptable counterexample: the problem Scharf mentions simply does not arise in the first place if we follow Pāṇini’s instructions.<sup>1</sup> Let’s look at Scharf’s next example:

“...consider the derivation of the form *bhavya*, gerundive of the verb ‘to be’. While the form is derivable from the root *bhū*, Pāṇini also derives it from the root *as*. In the derivation from the latter, two rules are simultaneously applicable: (1) A.2.4.52 *aster bhūḥ (ārdhadhātuke 35)*, and (2) A.3.1.124 *ṛhalor nyat (dhātoḥ 91)*. The former provides the replacement of the root *as* with the root *bhū* when an *ārdhadhātuka* affix is to be provided. The term *ārdhadhātuke* is a *viśayasaptamī* making the rule a forward-looking condition so that the replacement can take place before the particular affix is

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<sup>1</sup> And even if, hypothetically, it had been correct to start the derivation with *aja bhis*, then by my interpretation of 1.4.13 and 6.4.1, it would not have been possible to replace *bhis* with *ais* by 7.1.9 (which is in the *aṅgādhikāra*) until *bhis* is preceded by what I call *aṅga* (which here would be *ajā*; see chapter 4 of my thesis for more on this topic). Notice that at the step *ajā bhis*, 7.1.9 is not applicable.

actually provided (Scharf 2011a: 67, 2016: 317–18). The latter provides the affix *ṛyat* after a root that ends in a short or long vowel *ṛ* or in a consonant. Rajpopat’s procedure would provide the affix since it is the right-hand operation resulting in the incorrect form \**āsya*. The correct form requires that the left-hand operation apply replacing the root *as* with *bhū*. Since *bhū* ends in a vowel, A. 3.1.97 *aco yat*, which provides the affix *yat* after a vowel-final root, applies in exception to A.3.1.124 thereby resulting in the correct form *bhavya*.”

Like any machine, Pāṇini’s machine needs to be fed an input, namely the initial string, so that it might be able to produce an output. The input has to be both correct and semantically sufficient, failing which the machine will not be able to produce the grammatically correct output. What do I mean by ‘correct’? You cannot give the machine the wrong affix (e.g., *ṛyat* instead of *yat*, for example) and then expect it to give you the grammatically correct output. And what do I mean by semantically sufficient? I mean that each meaning-bearing part of the word being derived must find representation in the initial string being fed as the input to Pāṇini’s machine.

So, for example, you cannot just give the machine the root *bhū* and expect it to derive *bhavya* or *bhavanti* or any such form for us. To derive *bhavanti*, we need to give the machine both the root *bhū* which means ‘to be’ and the suffix *tiP* which indicates that we are deriving a third person singular form.<sup>2</sup> Similarly, to derive the potential passive participle *bhavya*, we need to give the machine a root which means ‘to be’ and also a *ḥṛtya* affix which can make it a potential passive participle.

The derivation of the word begins only after the correct and semantically sufficient input is provided to the machine. So, in this case, before we have *bhū + yat*, the derivation cannot begin. And before the derivation begins, DOI cannot arise and 1.4.2, as I interpret it, cannot be applied either. It is for this reason that such derivations have not been included as examples of DOI in my thesis. In sum, this is not a valid counterexample of my interpretation of 1.4.2.

But the question remains: how then do we derive the correct form *bhavya* if we wish to derive it using the root *as*, since Pāṇini does permit this? First, we have to work towards getting our input for the Pāṇinian machine ready. To do this we must go to the *Dhātupāṭha* to pick our root. We pick *as*. We must also have before us all the affixes which can potentially be added to any root to construct a potential passive participle, as we have to pick one of them. To get our root ready, we must check the *Aṣṭādhyāyī* for applicable rules. We know that irrespective of which suffix we choose from amongst those available for deriving the potential passive participle of *as*, it is going to be an *ārdhadhātuka* suffix. So, we must write: *as + <ārdhadhātuka affix>*. We must then apply 2.4.52 *aster bhūḥ (ārdhadhātuke)*. With the base ready, we pick the correct affix *yat*. Now that we have the correct initial string *bhū + yat*, we can use it as the input. Once we enter this input into the Pāṇinian machine, it performs the derivation and gives us the correct output *bhavya*.

Scharf also writes:

“These three examples, which are representative of large classes of derivations underivable by his method...”

Not a single one of the three examples discussed by Scharf disproves my claims. These examples only show that Scharf fails to understand not only important parts of my thesis but also – to my surprise – some of Pāṇini’s fairly non-controversial rules. Scharf continues:

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<sup>2</sup> We also need to tell the machine the voice, tense etc. of the form we wish to derive but that is not the focus of this discussion.

“bring up a third problem with Rajpopat’s thesis: he complains that both the tradition and modern scholars limit the scope of A.1.4.2 to accommodate the incapacity of their interpretation of it while he ends up doing just the same to accommodate the incapacity of his interpretation. He writes (pp. 31–32) ‘I do not agree with both the traditional and the modern perspectives towards this topic, because instead of trying to decipher the actual meaning of 1.4.2, these approaches try to brush 1.4.2 under the carpet, to make it less effective or to weaken its impact. One does it by excluding certain rule pairs from the scope of *vipratishedha*, and the other by reducing the jurisdiction of 1.4.2.’ The tradition, he argues, limits its scope by restricting it to cases of competing rules of equal strength (*tulyabalavirodha*) outside the scope of metarules concerning *apavāda*, *nitya*, and *antarāṅga* rules. Modern scholars limit its scope by limiting it to rules that introduce technical terms between 1.4.1 and 2.2.38. Yet Rajpopat also limits the scope of applicability of his interpretation of A.1.4.2 by excluding same operand interaction (SOI).”

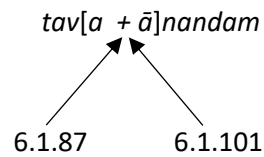
Scharf draws a false equivalence here. Given my interpretation of the term *para* in 1.4.2, it is impossible to incorporate SOI into the domain of 1.4.2. On the other hand, the traditional and modern interpretations of 1.4.2 exclude certain examples not because of their interpretation of the term *para* itself but simply because of the boundaries they arbitrarily set for the jurisdiction of 1.4.2, seemingly to reduce the possibility of arriving at grammatically incorrect forms.

Both traditional and modern interpretations offer no explanation about *why para* means RHS in all cases where it is used for a technical purpose except in 1.4.2 and *why* Pāṇini does not give us any instructions about the many kinds of conflict they exclude from the jurisdiction of 1.4.2. On the other hand, I explain exactly why Pāṇini did not feel the need to address the topic of SOI. Let me sum it up here: in case of SOI, as also in the case of conflicts between *samjñā sūtras* ‘definition rules’ and *paribhāṣā sūtras* ‘metarules’, the more specific rule constitutes the exception and thus defeats the general rule. Pāṇini did not need to mention this because the ‘general versus exception’ framework is inherent to the *sūtra* style itself. Since we are talking about SOI, let me respond to certain comments made by Scharf on this topic:

“A few words are now in order about his principle of same operand interaction (SOI). This principle involves a faulty procedure of determining the specificity of one rule with respect to another. When different rules are simultaneously applicable to the same operand, he adopts the policy of determining which rule is more specific. In general, such a policy implements just what the tradition does in determining that one rule is an exception to (*apavāda* of) another. However, where the tradition resorts to other principles, such as *nityatva* or its interpretation of A. 1.4.2, to solve certain conflicts, Rajpopat devises a procedure to determine the specificity of one with regard to the other by dividing the rule into parts. He expands the abbreviations that refer to sets of sounds (*pratyāhāras*), selects the common sounds, then looks for an additional limiting adjunct. This procedure, however, is biased and therefore faulty. For example, in the comparison of the application of A. 6.1.87 *ād guṇaḥ (aci)* and A. 6.1.101 *akaḥ savarṇe dīrgaḥ to tava ānandam*, he eliminates the vowels other than those of the class *a* (short and long *a*) and then concludes that the latter rule is more specific because it mentions *savarṇa*. Conversely, one might equally well have started by selecting pairs of *savarṇa* vowels and then determining that the former rule is more specific because it is restricted to vowels of the class *a*.”

As I have said in my thesis, I rely on Pāṇini’s style of rule composition to make the choice of the more specific rule in case of SOI. As regards this particular example, I admit I made a mistake in my thesis while dealing with this example and am glad this came up. In my thesis, I used the term *savarṇa* while listing the conditions under which 6.1.87 is applicable even though Pāṇini does not use this

word while teaching this rule. This created unnecessary confusion. Here is the correct way of analysing this example.



6.1.101 *akāḥ savarṇe dīrghaḥ*: a long vowel replaces both *aK* (*a, i, u, ṛ, ḷ*) and the immediately following *savarṇa* ‘homogeneous’ vowel.

6.1.87 *ād guṇaḥ (aci)*: *guṇa* (*a, e, o*) replaces both *a* and the vowel immediately following it.

6.1.101:

***a + vowel (savarṇa)***

*i / u / ṛ / ḷ + vowel (savarṇa)*

6.1.87:

***a + vowel***

Here the only conditions that are relevant are those which involve *a + something*, which I have highlighted in bold. Note that ‘*a + vowel (savarṇa)*’ is more specific than ‘*a + vowel*’ and thus we choose 6.1.101. This gives us the correct answer *tavānandam*.

In case of this example and also in case of the other example of SOI, namely *tarati*, which Scharf brings up in his review, he writes single sentences like “one might equally well have started by selecting pairs of *savarṇa* vowels and then determining that the former rule is more specific because it is restricted to vowels of the class *a*” and then argues I am wrong. But if he actually wants to prove me wrong, he must use my method which I systematically lay out in chapter 2.

Now, let us consider Scharf’s comments about my interpretation of 1.4.13 *yasmāt pratyayavidhis tadādi pratyayeṅgam* and 6.4.1 *aṅgasya*. Scharf claims that I am guilty of:

“...arbitrarily redefining the term *aṅga* to exclude cases that involve the introduction of a medial affix, i.e., explicitly a stem-forming affix (*vikaraṇa*), but the same logic would also exclude the introduction of feminine affixes. Yet there are no criteria to distinguish whether his interpretation of A. 1.4.2 should or should not apply to the introduction of such medial affixes.”

I have not excluded “cases that involve the introduction of a medial affix”. I have reinterpreted 1.4.13 and 6.4.1, yes, and I stick to that interpretation throughout without exception. And there are no double standards in my work of the kind Scharf seems to insinuate vis-à-vis feminine affixes. I have already dealt with this issue whilst responding to his paragraph on *ajābhiḥ*. He also writes:

“Yet Rajpopat’s redefinition of the term *aṅga* commits an additional fault. By requiring that the medial verbal stem-forming affix be fused with the preceding root (or, if he considered the case at all, a feminine affix with the nominal base after which it is provided) basically he is applying the principle that the more internally conditioned operation apply first. This is just the principle of *antaraṅgatva*. He similarly wants *antaraṅgatva* when dealing with the *asiddhatva* of retroflexion across word boundaries when he writes (p. 175), ‘I think Pāṇini does not consider word-level rules to be *asiddha* with respect to sentence-level rules.’ Yet he discards the *antaraṅga paribhāṣā* and all such metarules. He writes (p. 93) “Besides, if Pāṇini wanted us to use these metarules, he would have taught them

explicitly in the *Aṣṭādhyāyī*.” Thus while condemning the tradition under its interpretation of A. 1.4.2 for the use of metarules, he introduces the very same metarules to allow his interpretation to function successfully. And he claims that his interpretation allows rules to be applied in a consistent manner while he repeatedly condemns the tradition for applying rules in a random manner.”

Scharf provides no technical / derivational proof to support his claim that my interpretation of 1.4.13 is tantamount to the *antaraṅga paribhāṣā*. But I show in Appendix C of my thesis how the *antaraṅga paribhāṣā* is used and how I deal with those kinds of examples (and no, I don’t use my interpretation of 1.4.13 to deal with them). So, this is a false equivalence, yet again. As regards my statement ‘I think Pāṇini does not consider word-level rules to be *asiddha* with respect to sentence-level rules’, it must be noted that in the footnote to this paragraph I clearly state that such speculation does not actually solve the problem at hand. It is merely an idea, not a *paribhāṣā* I have invented or used anywhere in my thesis to support my interpretation of 1.4.2 or 1.4.13. But most importantly, I think Scharf completely misses the point when he complains that I invent *paribhāṣās* (which I do not, actually) but refuse to accept traditional post-Pāṇinian *paribhāṣās*. I don’t have a problem with the idea of the composition of post-Pāṇinian *paribhāṣās* itself: I do however object when Pāṇini’s rules, such as 1.4.2, are misunderstood and subsequently unjustifiably overridden by post-Pāṇinian *paribhāṣās*, and that is one of the key reasons behind my rejection of the *antaraṅga paribhāṣā*.

I can only say in conclusion that it is understandable that scholars who have spent decades internalizing the traditional method of understanding Pāṇini’s grammar will find it difficult to accept a new interpretation. I invite scholars to consider the evidence I have presented with an open mind. We may disagree on certain things, but we must remember that all of us share a common goal: the advancement of our knowledge of the workings of Pāṇini’s grammar.