

39. *Ferishta*, I, p. 331; II, p. 280. Seeking of approval from the Sultan of Gujarat indicates that by this time the relations between Khandesh and Gujarat had again become cordial. Also see T.W. Haig, *op.cit.*, p. 117; H.K. Sherwani and P.M. Joshi (ed.), *History of Medieval Deccan*, Hyderabad, 1973, Vol. I, p. 499.
40. *Ferishta*, I, p. 332; II, p. 280; Woolseley Haig (ed.) *Cambridge History*, III, *op.cit.*, p. 300; Habib and Nizami (ed.) *op.cit.*, p. 862; J.D.B. Gribble's *History of Deccan*, I, London, 1895, pp. 99-100.
41. *Ferishta*, II, p. 281.
42. *Tabaqat-i-Akbari*, III, pp. 341-42; *Zafar-ul-Walikh*, I, pp. 50; Radhey Shyam says that after accepting presents from Adil Khan II, Mahmud Khalji withdrew to his own country. See Radhey Shyam, *Kingdom of Khandesh*, Delhi, 1981, p. 22.
43. *Ferishta*, II, p. 195; *Sikandari*, pp. 111-12, *Zafar-ul-Walikh*, I, p. 148.
44. "basawabdid Sultan Ahmad Shah Gujarati", Cf. *Ferishta*, II, p. 280. *Ferishta's* statement suggests that Ahmad Shah I gave only moral support to Malik Nasir and not military support.
45. *Tabaqat-i-Akbari*, III, p. 165; Woolseley Haig (ed.), *Cambridge History*, *op.cit.*, p. 313; Habib and Nizami, *op.cit.*, p. 872.
46. Alam Khan was a direct descendant of Malik Ifukhar, who had sought refuge in Gujarat after he was defeated by his brother Malik Nasir in a struggle for political authority in Khandesh in 1417 AD.
47. *Zafar-ul-Walikh*, I, p. 49.
48. *Ferishta*, II, p. 281; H.K. Sherwani and P.M. Joshi (ed.), *op.cit.*, p. 503. Also see Stanley Lane-Pool, *The Mohammadan Dynasties*, Westminster, 1893, Delhi, Reprint, 1977, p. 316.
49. *Tabaqat-i-Akbari*, III, p. 372; *Ferishta*, II p. 282.
50. *Tabaqat-i-Akbari*, III, p. 372.
51. *Ferishta*, II, p. 282; *Zafar-ul-Walikh*, I, p. 51.
52. *Tabaqat-i-Akbari*, III, p. 166; *Sikandari*, pp. 222-23.
53. *Tabaqat-i-Akbari*, III, p. 166; *Ferishta*, II, p. 282; *Sikandari*, p. 149.
54. *Tabaqat-i-Akbari*, III, pp. 168-69.
55. *Ibid.*, pp. 170-71.
56. *Ibid.*, *Ferishta*, II, p. 283.
57. *Tabaqat-i-Akbari*, III, pp. 170-71; *Ferishta*, II, p. 283; *Zafar-ul-Walikh*, I, p. 55.
58. *Tabaqat-i-Akbari*, III, pp. 180-82; *Ferishta*, II, p. 207; *Zafar-ul-Walikh*, I, pp. 94-95.
59. *Tabaqat-i-Akbari*, III, p. 212; *Ferishta*, II, p. 284; *Sikandari*, pp. 268-69.

An 'Old' Solution of a 'New' Problem

KISORE CHAKRAVARTY

In this paper we look briefly at the so-called new riddle of induction introduced by Goodman.¹ Carvaka and Hume tried to show that past and present observed confirmation of a hypothesis does not provide any rational ground for upholding the hypothesis in the future.² The main argument for this is the following. Past and present confirmation of a hypothesis does not entail logically that the hypothesis will hold in the future as well. At the same time inductive support for the claim that the hypothesis will hold in the future is inevitably circular, for it must then

be assumed that the future will resemble the past that is itself an induction.³ Goodman's new riddle highlights the problematic nature of the relation between observed evidence and future prediction in a different way. Suppose that all emeralds observed so far are green. This seems to confirm that all emeralds are green and permit the prediction that the next emerald to be seen will be green. But now consider the concocted predicate 'grue'. Something is grue iff it has been found to be green whenever it has been observed so far or it is not

yet observed and will be observed to be blue. Clearly, the observed evidence that seems to confirm that all emeralds are green also seems to confirm that all emeralds are grue. But then we seem to have two conflicting predictions equally confirmed by the same inductive evidence. If all emeralds are green, the next one should be green; but if all emeralds are grue, the next one should be blue. It can be easily seen that we can concoct an indefinite number of grue-like predicates and the same difficulty will arise in each case. That is, if we want to, we can

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always come up with new, fabricated predicates incorporated into empirical hypotheses that will lead to predictions conflicting with those based on commonly accepted empirical hypotheses while both sets of hypotheses seem to be equally consistent with the observed data. Can induction be rational when it seems to produce such contradictory results?

Goodman's own solution is that the riddle does not invalidate induction or the generalization formula as such but presses home the need for criteria to separate projectible predicates like green from cooked-up, non-projectible predicates like grue. The projectible predicates are in the end the well-entrenched ones. What makes a predicate better-entrenched? Essentially that it has a longer history. In Goodman's own words:

... we must consult the record of past projections. . . . Plainly, 'green', as a veteran of earlier and many more projections than 'grue', has the more impressive biography. The predicate 'green', we may say, is much better entrenched than the predicate 'grue'.⁴

Some critics have complained that such an account of entrenchment leaves the progress of science to luck. Is it merely a stroke of luck that 'green' has a longer and more impressive history and biography than 'grue'? If so, there is the danger that growth of science may be stultified for excluding hypotheses with unfamiliar or new predicates. Goodman has responded to the criticism by arguing that entrenchment and familiarity are different concepts.⁵ An unfamiliar predicate may turn out to be well entrenched if the coextensive or parent or comparable predicates are already in frequent and wide circulation. Although Goodman's theory is more

elaborate than our sketch suggests, the criticism, however, has a point. First, Goodman does not show how the danger of excluding new predicates that are not coextensive with or derived from or comparable to other predicates that are already in circulation can be avoided. Second, projectibility and entrenchment are, because of the emphasis on the history, overly dependent on past projection. But for Carvaka or Hume past regularity alone fails to provide rational ground for future regularity as we have already said.

Quine has offered to explain the distinction between projectible and non-projectible predicates by saying that while the former are true of things of a kind the latter are not.⁶ Being of a kind depends on similarity. The more similar things are the more reason that they are of the same kind. Accordingly, a kind is a set of objects that are more similar to a paradigmatic member of the set than they are to something else (called a foil) that is not a member of the set and is too dissimilar to the paradigm. But the difficulty in this view centres round the basis of choosing the paradigm. Is the paradigm chosen because it has certain features or not? If the first, objects should become members of a set by virtue of having many or all of those features which then are the family of common features that account for membership of the set. Projectibility then depends on sharing a family of common features. But objects in a non-projectible set too may be said to share some common features, such as (at least trivially) that they are grue. So unless we have some reasonable criteria to separate the 'right' kind of common features from the 'wrong' ones (and none are provided by Quine), the division

between projectible and non-projectible predicates would collapse. If the second, someone may have chosen the paradigm for no reason and others may have followed suit merely for personal reasons. Projectibility then may not have any rational foundation and even inductions with projectible predicates may be irrational. So once again it needs to be shown that although the paradigm is chosen not because it has certain features, the set still has a rational foundation. But Quine has not done that and it is unclear that a rational basis can be provided under the circumstances. Without any doubt a skeptic like Carvaka or Hume would like to utilize the situation to press home the irrationality of induction.

The new riddle of induction has generated considerable debate in recent decades and many other solutions and their criticisms have been offered. It would take a whole book to discuss the merits of these solutions and we must skip that. We, however, look briefly at a similar development in Sanskrit logic in the hope of throwing some light on this recent controversy.

Take the stock inference of fire in a hill from smoke. The hill is the inferential subject (*paksa*: similar to the minor term), fire is the probandum (*sadhya*: similar to the major term) and smoke is the probans (*sadhana*: similar to the middle term). In a typical case smoke is observed and fire is not and that there is fire in the hill may be open to doubt; the doubt is removed by the inference of fire in the hill. The inference is based in part on the premise or pervasion that all smoky things are fiery. The pervasion is supported by observation of instances where smoke is found with fire and/or observation of instances

where absence of fire is found with absence of smoke. The former are positive instances (*sapaksa*) and the latter are negative instances (*vipaksa*). The inferential subject is neither a positive instance nor a negative instance, for presence of the probandum is reliably known in a positive instance before the inference and absence of the probandum is reliably known in a negative instance before the inference and neither presence nor absence of the probandum is in a typical case reliably known in the inferential subject before the inference. [In atypical cases, however, the probandum may be known to be present or absent in the inferential subject.]

Now take the cooked up property of 'not being either the inferential subject or a negative instance' (*paksa-vipaksa-anyatara-anyah*) cited by Gangesa (13th century C.E.), a great Nyaya philosopher.⁷ This property is true of any positive instance, for a positive instance is not either the inferential subject or a negative instance. Thus by definition in typical cases this property is present wherever the probandum is reliably known to be present before the inference. [The said property is also not true of any negative instance: it is not true of any negative instance that it is neither the inferential subject nor a negative instance, for it is a negative instance and if something is a negative instance, it is also either the inferential subject or a negative instance (i.e., an inclusive disjunction is true if either disjunct is true). Thus by definition in typical cases wherever there is absence of the said property there is absence of the probandum.] It seems to follow that there is warrant for the pervasion that wherever there is the probandum there is this property or

that the property pervades the probandum.

At the same time the property of not being either the inferential subject or a negative instance cannot be true of the inferential subject. If the said property pervades the probandum, absence of the probandum in the inferential subject then follows from absence of that property. Thus the above set of facts seems to warrant both inference of the probandum and its absence (see lower down in this paragraph) in the same thing at the same time—a contradiction. The problem is mainly due to that the same generalization formula that permits the induction that wherever there is the probandum there is the probandum also permits the induction that wherever there is the probandum there is the said property. It is in this respect that this problem is similar to the new riddle of induction. In Goodman's example the observed facts seem to support both that all emeralds are green and that all emeralds are grue. If all emeralds are green, the next emerald should be green. But if all emeralds are grue, the next emerald should be blue. This is a contradiction pointing to some possible gap in the generalization formula. In Gangesa's example, the observed facts seem to support both that all smoky things are fiery and that no fiery things are either the inferential subject or a negative instance. If all smoky things are fiery, then (since the hill is observed to be smoky) the hill is fiery. But if no fiery things are either the inferential subject or a negative instance, then (since it is true of the hill that it is either the inferential subject or a negative instance), the hill is not fiery. Here too is a contradiction pointing to some possible gap in the general-

ization formula.

The following is a solution (among others) mentioned in Gangesa's *Tattvacintamani* (TC).⁸ Induction does need the support of observation of positive instances or negative instances. Further, there should be non-observation of any counterexample. Thus the generalization formula so far comprises observation of positive instances or observation of negative instances and non-observation of any counterexample. The assumption that this is the whole story, however, leads to the problem. To solve the problem it needs to be added that a reliable induction must also have the support of additional reasoning to counter the doubt that the induction may be false. The doubt that an induction may be false is reasonable; an induction includes a claim about future countless cases based on favorable observation of a limited number of past or present cases. But sometimes an induction confirmed in a large number of cases is found later to have a counterexample. So the doubt should be countered by additional reasoning that explores the consequences of supposing that an induction is false and shows that an undesirable consequence results from that. Such additional reasoning is called *tarka* that for the lack of anything better we translate as subjunctive reasoning. It includes a counterfactual conditional the antecedent and the consequent of which are false. The following reasoning has been offered in support of that all smoky things are fiery.

If smoke were produced neither by an aggregate that includes fire nor by an aggregate that excludes fire, smoke would not have been produced.⁹

We develop the argument as

follows. Gangesa has offered a counterfactual conditional to back up the induction that all smoky things are fiery. The conditional is: if smoke were produced neither by an aggregate that includes fire nor by an aggregate that excludes fire, smoke would not have been produced. But we observe, it is implied, that smoke is produced. So the consequent is false. It follows (by applying the implied law of *modus tollendo tollens*) that the antecedent is false. So we derive (by applying the implied De Morgan law) that smoke is produced either by an aggregate that includes fire or by an aggregate that excludes fire. Now we have two opposed factual claims, viz., (1) that smoke is produced by an aggregate that excludes fire and (2) that smoke is produced by an aggregate that includes fire. It is again implied in Nyaya empiricism (and empiricism in general) that of two factual claims the one that has observational support is preferable to the one that does not. This may be called the principle of observational credibility (OC). Given OC, it is then accepted that smoke is produced by an aggregate that includes fire. But to say that smoke is produced by an aggregate that includes fire is to say that fire is a necessary antecedent of smoke, for a causal condition (*karana*) is defined in part as a necessary (*niyata*) condition. ['Necessity' is added to separate a causal condition from an accidental factor such as a donkey that happens to be present where smoke is produced and is not a causal condition of smoke.] The argument thus bestows favour (*anugraha*) to the induction that wherever there is smoke, there is fire by showing that its denial leads to the undesirable consequence (*anistaprasanga*) of

conflict with reliably accepted views.

The above argument implicitly utilizes logical laws like *modus tollendo tollens* and OC. While even logical laws are not above challenge, they are as safe as it gets; they are also not rejected by proponents of inductive skepticism like Carvaka or Hume. So far as OC is concerned, critics of induction like Carvaka or Hume should not reject it. Although Carvaka rejects inductive leap into the future as unreasonable, he holds that particular observations may be reliable (*pramanika*) and are the only sources of knowing. Similarly, Hume labels induction as questionable but holds impressions or observations of particulars as the ultimate epistemic foundations. Neither the position of Carvaka nor the position of Hume can be sustained without OC. So the above argument is right on target so far as the critique of induction goes.¹⁰ This does not make induction infallible (infallibility may be claimed for logical truths but is ruled out for induction in any case); but it (together with observation of positive instances or negative instances and non-observation of any counterexample) does make it reliable (*pramanika*). In Nyaya epistemology reliability is inferred from successful action (*saphalapravrtti*) prompted by a cognition (such as when a thirsty person looks for water, finds it, drinks it and the thirst is quenched) or its fit or coherence (*samvada*) with other accepted truths.¹¹

A skeptic may point out that the above reasoning involves at least the induction that a supposition that conflicts with one's own views is not reliable. Accordingly, the reasoning is circular, the skeptic may object. The skeptic may add that whatever reasoning is offered in support of

induction would inevitably involve some induction and be invariably circular.¹²

But the assumption behind this objection is that if the same rule is involved in the justification of a given rule, the reasoning is circular.¹³ This assumption is questionable. Suppose that one has to argue for the rationality of deduction. One has no choice but to rely in part on deduction to do so. Similarly, if a skeptic denies that there are any sources of knowing, there is no choice but to rely on some sources of knowing to refute the skeptic. So the above kind of circularity, if recognized as a defect, would threaten the status of not only induction but of all knowing. If accordingly the assumption is rejected to allow for the possibility of knowledge, the objection would fail. Further, the skeptical claim that no argument can show the reliability of induction without presupposing that reliability itself involves induction and cannot be sustained without presupposing its reliability. Thus if rule-circularity is a flaw, the skeptical objection is flawed too. In particular, if the reliability of induction cannot be challenged without presupposing that reliability, the challenge is futile.

The main point of the additional step called subjunctive reasoning brought in support of induction, as already said, is to show that the assumed denial of an induction leads to an undesirable consequence (*anistaprasanga*). In the given example the undesirable consequence is conflict with something reliably accepted. In other cases the undesirable consequence may be a contradiction like that in I speaking aloud that I am dumb. Still in some other cases the undesirable conse-

quence may be conflict between what is asserted and the way one regularly behaves, e.g., the conflict between one saying that time is unreal and yet always trying to get things done in time. The undesirable consequence may also sometimes be acceptance of something that is uneconomical (*guru*).

To understand the last point it is useful to look briefly at the Nyaya principles of economy (*laghava*). Three basic principles of economy or simplicity may be noted without implying that they always go together, viz., economy in cognitive order (*upasthiti*), economy in relationship (*sambandha*) and economy in constitution (*sarira*). The first enjoins the following. Of two necessary antecedents (or two equally matched hypotheses; *kalpana*) the one that is more directly related to the effect (or the explanandum) in the cognitive order is more economical. For example, when the smell of a mango changes, its colour too changes. Thus prior absence of the new smell and prior absence of the new colour are both necessary antecedents of the changing smell; but only the former and not the latter is accepted as a causal condition of the new smell, for that is more directly related to the effect in the cognitive order. In other words, previous absence of something is more immediately relevant than previous absence of something else as an explanation for origin of something and should be recognized accordingly. The second is as follows. Of two necessary antecedents (or equally matched hypotheses) the one that is more directly related to the effect (or the explanandum) is more economical. For example, a wheel is accepted as a causal condition of a pot but not wheel-ness (that is supposedly the common

feature of all wheels) although both are necessary antecedents, for the latter's relation to the pot is established through the former and, therefore, is more indirect. The third law implies that of two necessary antecedents (or equally matched hypotheses) the one that is analyzable into fewer constituents is more economical. For example, for a substance to be perceptible (in the Nyaya view) it should have intermediate magnitude (that is neither the biggest possible nor the smallest possible magnitude) and should also be made of many substances. Although both are necessary antecedents, only the former is accepted as a causal condition of perception of a substance on the ground of economy of constitution.¹⁴

Now let us see how all this can be of help in handling the problematic property of 'not being either the inferential subject or a negative instance.' It transpires that the additional step called subjunctive reasoning makes a crucial difference in the epistemic standings of 'all smoky things are fiery' and 'no fiery things are either the inferential subject or a negative instance.' We have already discussed the subjunctive reasoning in support of 'all smoky things are fiery'. It shows that the denial of that induction leads to an undesirable consequence (*anista-prasanga*). But no subjunctive reasoning gives the needed support to 'no fiery things are either the inferential subject or a negative instance.' That is, no undesirable consequence results from supposing that at least one fiery thing is either the inferential subject or a negative instance. In particular, it is known that the fabricated property is absent in the inferential subject. But that the probandum is absent in the

inferential subject is not known. For all we know there may or may not be fire in the hill. So the doubt that the cooked up property may not pervade the probandum remains unobstructed and that makes the given induction unreliable.

Further, compared to 'smoke' or 'fire' 'not being either the inferential subject or a negative instance' appears to be more complex (*guru*) with respect to constitution (*sarira*). That is, more concepts seem to be involved in the latter than in the former so far as ordinary discourse goes. Additionally, in order for something to be identifiable as the inferential subject or a negative instance it should presumably first be recognized as fire or smoke and so on. But in order for something to be seen as smoke or fire and so on it need not presumably first be recognized as the inferential subject or a negative instance. So there is also greater complexity with respect to cognitive order (*upasthiti*). [In the light of Nyaya ontology there is further greater complexity with respect to relationship (*sambandha*). But we skip the explanation of that due to limitation of space.] So in case of a choice between two otherwise equally matched hypotheses involving 'smoke' or 'fire' one hand and 'not being either the inferential subject or a negative instance' on the other the one with the latter would be less preferable. Under the circumstances, while the induction that all smoky things are fiery is reliable (for its denial leads to conflict with something reliably accepted and it appears to be simpler than the competing hypothesis), the induction that no fiery things are either the inferential subject or a negative instance is not reliable (for its denial does not lead to conflict with anything reliably accepted and

it seems to be more complex than the competing hypothesis). So we have the warrant to infer that the hill is fiery but not that the hill is not fiery.

The solution then is that a reliable induction should have the support of observation of positive instances or negative instances and non-observation of any counterexample and also have the support of subjunctive reasoning so that the denial of the induction can be shown to lead to an undesirable consequence.

Now let us look at the grue case. So far as the support from observation of positive instances or negative instances and non-observation of any counterexample is concerned, both that all emeralds are green and that all emeralds are grue seem to have that support. But there is a difference when it comes to the support from subjunctive reasoning. Suppose that 'all emeralds are green' is false and that the next emerald to be seen is not green. Then that emerald will not complement red, for only green complements red. But the next emerald may be observed to complement red and that would conflict with the supposition that it is not green. Thus the assumed denial of the induction that all emeralds are green has the undesirable consequence that it invites the risk of conflict with what may be observed in the next case. Now suppose that 'all emeralds are grue' is false and that the next emerald to be seen is not blue. No undesirable consequence follows. Even if the next emerald is observed to complement red, there is an incongruence: something not blue may complement red. Hence 'all emeralds are grue' fails to qualify as

a reliable induction.

Further, compared to grue green appears to be simpler with respect to constitution (*sarira*), i.e., grue appears to contain more concepts than green. Compared to grue there is also greater economy in the cognitive order (*upasthiti*) so far as ordinary discourse is concerned: in ordinary discourse awareness of grue cannot take place without awareness of green; but awareness of green can take place without awareness of grue. [In the light of Nyaya ontology there will be moreover greater economy in relationship (*sambandha*). But exploration of Nyaya ontology will take too much space here and must be left out.] So green is preferable to grue in terms of the Nyaya principles of economy (*laghava*) as well.

It may be noted that Gilbert Harman has argued that 'all emeralds are green', is preferable to 'all emeralds are grue' because the green hypothesis is more economical or simpler than the grue one.¹⁵ Harman has proposed a computational or pragmatic theory of simplicity according to which ease of computation is the basis of preference among competing and equally relevant hypotheses. That is, theories that are easier to use in getting results in which scientists are interested are preferable to those that are harder to use in getting those results. This is somewhat similar to a part of the Nyaya solution. But Harman does not explicitly recognize the subtle distinction between the three kinds of simplicity as the Nyaya does.¹⁶ Further, the Nyaya does not rely on simplicity alone and holds, as already said, that an undesirable consequence may be due to other considerations as well such as conflict

with something reliably accepted (e.g., that fire is cold is liable to be rejected on the ground that fire is directly observed to be hot) and so on.¹⁷ This is an important difference between the Nyaya and Harman and other proponents of a simplicity solution. Although simplicity may sometimes help to determine what is reliable or true, relying on simplicity alone may not suffice to show that we are getting any closer to truth or reliability. That is, what still needs to be argued for is that the fact that one theory is simpler than another is a good reason for saying that the former is more likely to be true or reliable than the latter.¹⁸ This issue is implicitly addressed in the Nyaya solution. That the denial of a hypothesis conflicts with something reliably accepted, may (among others) be offered as a good reason to think that the hypothesis is likely to be true or reliable.

Further, unlike Quine's position this solution does not hinge on deciding which predicate represents a kind and which predicate does not—a task that appears to be fraught with difficulties to say the least. Again, unlike Goodman's position this solution is not pinned down to checking the past history of how often a particular predicate has been projected and does not leave the choice between two predicates to counting which predicate (along with coextensive or parent or comparable predicates) has been projected more often in the past. So the test that an induction is not reliable unless its assumed denial leads to an undesirable consequence does not leave the progress of science to luck and does not forbid the introduction of new predicates. Needless to say, the undesirable consequence may result equally from

future developments. An induction that passes the test (including considerations of simplicity) now may fail it in the future. There are no guarantees in nature. Since Gangesa is a fallibilist, he does not also try to find one.

Finally, David Sanford has argued that since grue is a disjunctive predicate and green is not, a part of the solution may be found in a clearer, objective and semantic (as distinguished from a merely syntactic) understanding of disjunctiveness that Sanford has offered.¹⁹ He also notes that while in the predicate grue there is a link between a colour term and a temporal term, terms that are semantically disconnected, there is no such link in the predicate green. We do not have the space to get into the many subtle distinctions that Sanford introduces. However, it is remarkable that Gangesa too has cited a problematic property that includes disjunction.

But it should be added that Gangesa has also shown (TC, Chapter on *Upadhi*) that other properties that at least are not overtly disjunctive such as 'not being the inferential subject (*paksetara*)' turn out to be equally problematic and may be handled in the same way explained above. Thus 'not being the inferential subject' appears to pervade the probandum, for no positive instance where the probandum is known to be present is the inferential subject. At the same time 'not being the inferential subject' cannot be true of the inferential subject and hence it appears to follow that the probandum does not belong to the inferential subject, no matter what is offered as the probans. In the particular inference of unobserved

fire in the hill from observed smoke, 'not being the inferential subject' amounts to 'not being the hill'. Clearly all places where fire is so far observed are different from the hill. So 'not being the hill' appears to pervade fire. At the same time since 'not being the hill' cannot be true of the hill, it appears to follow that fire does not belong to the hill no matter whether smoke or something like that is found in the hill. Gangesa resolves the problem by arguing that 'not being the inferential subject' does not reliably pervade the probandum for the lack of subjunctive reasoning that would obstruct the doubt over that induction. For all we know the probandum may be present in the inferential subject. Since 'not being the inferential subject' is necessarily missing in the inferential subject, there remains the lingering doubt that the said property may not pervade the probandum.

If this makes sense, since 'not being the inferential subject' is at least not overtly disjunctive, disjunctiveness may not seem to have a crucial role in the present issue. But Sanford's point is that perverse predicates like grue are formed by linking terms that are semantically disconnected. This holds of the overtly non-disjunctive properties cited by Gangesa. For example, 'not being the inferential subject' links by implication terms like 'the hill' with terms like 'where typically neither presence nor absence of the probandum is known' and, therefore, are covertly disjunctive and further are formed by linking terms that are semantically disconnected. Since grue-like predicates link terms that are semantically disconnected, they would also, from the Nyaya standpoint, be subject to greater

complexity with respect to constitution (*sarira*), cognitive order (*upasthiti*) and relation (*sambandha*) compared to predicates like 'green' or 'fire' that do not link terms that are semantically disconnected. Further, since grue-like predicates link terms that are semantically disconnected, the hypotheses concerned would not have the support from subjunctive reasoning and their denial would not lead to an undesirable consequence.²⁰

NOTES

1. Goodman, Nelson (1973), *Fact, Fiction, and Forecast* (FFF), 3rd ed. Chapter III.
2. See Chakrabarti, Kisor (1995), *Definition and Induction* (DI), University of Hawaii Press, Chapter IX.
3. Goodman himself holds that the classical Humean problem of induction has generated much fruitless discussion and should be dissolved. FFF, Chapter III. But we shall see that Goodman's own solution to the new riddle is vulnerable to the Humean critique. However, see below the note 20 for the point that elsewhere Goodman moves closer to the Nyaya position.
4. FFF, p. 94.
5. FFF, Chapter IV.
6. Quine, W.V., (1994), "Natural Kinds", in *Grue!(GR)*, ed., Stalker, Douglas, Chicago: Open Court, 1994, pp. 41-56.
7. *Tattvacintamani* (TC) of Gangesa, ed. Tarkavagisa, K.N. (1990), Vol. II, Delhi: Chowkhamba Sanskrit Pratisthan, p. 403-404.
8. TC, pp. 354-360.
9. TC, p. 219. The argument has another important part utilizing in particular belief-behavior conflict that we skip due to limitation of space. For a fuller discussion see DI, Chapter XI.
10. For a discussion of various attempted solutions to the classical problem of induction and how this solution differs from them see DI, Chapters IX-XI.
11. For further discussion see Chakrabarti, Kisor, "Indian Theories of Truth", *Journal of Indian Philosophy*, Vol. XII.
12. This objection has been raised by Sriharsa (12th century) in his *Khandanakhandakhadya*, Varanasi: Chowkhamba Vidyabhavan, 1992.

- p. 386.
13. This kind of circularity is sometimes called rule-circularity. See Rescher, Nicholas, 1980, *Induction*, Pittsburgh: University of Pittsburgh Press.
 14. Also see DI, pp. 43-45.
 15. "Simplicity as a Pragmatic Criterion for deciding What Hypotheses to Take seriously" in GR, pp. 153-172.
 16. Harman does mention simplicity of representation that is similar to what is called economy with respect to constitution in the Nyaya. He also distinguishes computational simplicity from semantic simplicity advocated by Elliott Sober in *Simplicity*, Oxford: Oxford University Press, 1975. According to Sober, a hypothesis is simpler and preferable to another if less information is needed in the light of the former compared to the latter to answer questions that matter.
 17. Another important kind of undesirable consequence is due to conflict between what one asserts and the way one regularly behaves. For more discussion see DI, Chapter XI.
 18. Harman tries to show that computational simplicity is an indicator of verisimilitude. He, however, assumes in this process that there is no difference between believing something and believing that it is true. This assumption is questionable: believing something without believing that it is true seems to be quite possible. For example, a man of science may participate in religious rituals in the belief that this is needed for afterlife although he may have also reason to believe that science rejects life after death. At least the Nyaya claims that it is possible to hold on to a contradiction in spite of being aware of that it is a contradiction.
 19. "A Grue thought in a Bleen Shade: 'Grue' as a Disjunctive Predicate" in GR, pp. 173-192.
 20. D.H.H. Ingalls, a long time colleague of Goodman at the Harvard University, was trained in Nyaya philosophy by a traditional pandit. Goodman makes no reference to the Nyaya anywhere. Still

it is more than possible that Goodman and Ingalls had some philosophical conversations and that Goodman was influenced by Nyaya ideas in coining perverse predicates like the grue. Goodman holds: 'A hypothesis is *projectible* if and only if it is supported, unviolated, and unexhausted, and all such hypotheses that conflict with it are overridden.' (*Problems and Projects*, Indianapolis, Bobbs-Merrill, 1972, p. 393) This is analogous to the Nyaya view that an induction (or a hypothesis: *kalpana*) is not reliable unless it is supported by subjunctive reasoning that shows that the denial leads to an undesirable consequence. As already said, the Nyaya doctrine of an undesirable consequence is highly developed. An undesirable consequence may be a contradiction or a belief-behavior conflict or conflict with something reliably accepted or acceptance of something uneconomical.

Global Order, Peace and the Nehruvian Discourse

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The contemporary global order understandably suggests a serious theoretical scrutiny. The collapse of the cold war and with it the dissolution of the balance-of-power shelter of convenience tends to simplify, at a surface level, the inner threads of international relations. But at a different strata of power structure and in its operation, is deciphered a coded and very complex strategic consideration which could not be visualized before. The entire spectrum of inter-strata

relationship seems to be re-scripted in the zephetic vocabulary such as *dependent capitalism, internet-hypodermis, technology over-arch, process-product patent quarantine, capital equilibrium* and so on. The urgency for some to trumpet their concern for the world order and to legitimize their authority for economic and cultural dispensation is conveniently tranquilized by them against the uneasy sensitivity to alterity. Consequently, in the event of any of their political, social and economic

doctrines being let-loose, peace is fractured.

The quest for the alternative to the dynamics of the exclusive unipolarity, is therefore, held to be the most serious enterprise in the contemporary world order. Collapse of the Soviet Russia and a great part of the communist ideology having been surrendered by China to the subversiveness of the consumerist economy, have weakened the moral sensoriousness for the taken-for-grantedness of capitalism. The

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