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**Thus spoke Pushpa**

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5 Be thyself; keep it real.

6 Thus spoke పుష్ప (Pushpa): an India movie that brought the movie industry to its senses, with  
7 its global popularity.

8

9 Why should we--the scientists--care? Also, is popularity a good thing?

10

11 Popularity is a good thing by virtue of being a good proxy for GOOD (e.g. eating, sleeping,  
12 raising one's family, education...).

13

14 Pushpa has, in the words of Tolkien, "the inner consistency of reality", which accounts for its  
15 popularity. It is not one of those Hollywood movies about saving the world; nor is it about going  
16 where no man has gone before. Pushpa doesn't have the usual heroic hooks routinely deployed  
17 so that everybody from all over the world can relate to (cf. Thorp, 2021).

18

19 Now, you lost me again: How is reality related to popularity?

20

21 If the building I am in starts shaking, then I'll run out; so will everybody else (which is what it  
22 means to engage in a popular act). I'll not while away on cost-benefit analysis of various choices

23 on the menu within the reach of my agency (note that I'm a layperson; unlike a welfare  
24 economist ;- ) nor will anybody else in the building.

25

26 OK, simply put, reality is popular.

27

28 Where are you going with this?

29

30 Global Science and Education Policy: I propose

31

32 **'Making Something with the Inner Consistency of Reality'**

33

34 an integral part of the core curriculum of education, science, and research (a la calculus  
35 requirement ;- ).

36

37 But, why?

38

39 What is reality, anyways?

40

41 All we have is our conscious experiences; yes, there are scientific theories, models, predictions,  
42 and their verifications in experiments, all of which is planned perception. Every view--  
43 beginning with individual conscious experience and all the way to collective scientific  
44 understanding--is from a viewpoint, which in the case of individuals is the self, while it is a  
45 doctrine in the case of collective sciences, as Maxwell recognized, and as Professor F. William  
46 Lawvere established with his Functorial Semantics (see Posina, 2020 and references therein).

47

48 So, within our subjective experience, how do we tell if it is real, given that we have no access to  
49 reality to compare our experience of it?

50

51 The genius of reality is that we don't need it!

52

53 The reality (that isn't :-)) is reflected in our individual conscious experience and in our collective  
54 scientific understanding as:

55

56 1. **Unity of Being** (a mode of cohesion; the way words stick together to make an argument,  
57 which is different from the way my fingers stick together to make grasping possible--a different  
58 mode of cohesion). The cohesion that blossoms in putting together those that fit together appears  
59 beautiful (cf. no holes in the story). It is this beauty [unity/cohesion] that "sparks the many  
60 particular processes whereby ignorance becomes knowledge" (Lawvere, 1991, p. 2; Posina,  
61 2022).

62

63 2. **Naturality of Becoming** (every change of any object [of a category] preserves its  
64 essence/cohesion). Clouds have a way of moving (as though they have all the time there is), cars  
65 [in Bengaluru] have a way of moving (as though they own all the space there is), while the cat  
66 sitting on the wall across my window has a way of ignoring me (I have been looking at it for the  
67 past 5 years or so; not once did I see the cat look at me). Also, Johansson's point light walker  
68 vividly illustrates the naturality of becoming: Becoming consistent with Being  
69 (<https://youtu.be/r0kLC-pridI>; see also Lawvere and Schanuel, 2009, p. 152; Posina, 2016),  
70 which is, by the way, what makes science possible.

71

72 Fine! Now, what do you want me to do?

73

74 **Focus on the Artifact:**

75 1. Equip it with the unity of Being (informally speaking, make sure it makes sense i.e., ensure  
76 that there are no loose ends or gaping holes in the story, so to speak).

77 AND

78 2. Ensure that its Becoming is natural, both of which--together--will ensure that the artifact  
79 appears real. In appearing real, it motivates us to act--engaging the agency needed for  
80 purposeful action.

81

82 **Forget audience:**

83 Eyeballing audience intellect, reading the room, etc., and titrating the talk to elicit a pre-  
 84 conceived desired reaction (applause, of course ;- ) from the audience, all based on heuristics  
 85 and/or nudges (to make people behave in their(?) interest; paternalism has to address its  
 86 relevance given that every generation is more proficient in abstract reasoning than the previous  
 87 one; simply put, our nieces and nephews can think not only about more things, but also more  
 88 clearly than we can; see Pinker, 2011, p. 311) is pre-scientific. We are mature enough to focus  
 89 on science: a reflective part of reality (Lawvere and Schanuel, 2009, pp. 84-85). Science--in  
 90 parts and as a whole--reflects the Unity of Being and the Naturality of Becoming, the two  
 91 canonical qualities of reality (for definitions of quality types, see Lawvere, 2007). COVID  
 92 science fails on these two counts, possibly because it doesn't appear real. If it did, then we  
 93 wouldn't have to make laws to bend people into COVID-appropriate behaviour.

94

95 Pushpa didn't ask anybody to act as its actors did, but in appearing real--unity of Being and  
 96 naturality of Becoming--it moved people all across the globe to follow in the footsteps of  
 97 Pushpa.

98

99 Where did COVID science go wrong? It's not because of the difficulties inherent in  
 100 communicating complex scientific notions or a failure of science outreach (cf. Henry, 2005), but  
 101 a disturbing failure of science administrators/policy makers to realize a basic fact about people:

102

103 Everybody is equipped with a FAKE-detector, which goes abuzz whenever we encounter any  
104 deviations--in our conscious experience--from the inner consistency of reality. If it doesn't  
105 appear real, then it's not real (reality doesn't have agency; unlike us, it cannot pretend to be  
106 something other than what it is; see also Croxson, Neeley, and Schiller, 2021).

107

108 Artists struggle to endow the inner consistency of reality to whatever it is that they are making.  
109 For example, Pushpa was [almost] a decade-in-making, with hundreds of professionals all of  
110 whom are committed to excellence all of which is in vivid display in Pushpa, which suggests [to  
111 me] the significance of reviving the Bourbaki-mode of collective scientific struggle to make  
112 sense of reality. According to Professor F. William Lawvere: Bourbaki (which included the  
113 who's who of eminent mathematicians: Charles Ehresmann, Grothendieck, MacLane...)  
114 discussed how one structure could be deduced from another (Lawvere and Rosebrugh, 2003, p.  
115 240, a research program that needs to be pursued with passion, if we are to understand the  
116 bewildering varieties of categories of Being, along with no less diverse categories of Becoming  
117 that we encounter in making sense of reality; see Lawvere, 1991, 1999, 2007; *ibid*, 2003 for zero  
118 of Becoming or zero change/constancy; *ibid*, 2016 for the zero of Being or zero  
119 unity/discreteness).

120

121 Scientists, on the other hand, have a dual task: Ensure that the Unity of Being and the Naturality  
122 of Becoming that is Reflected in Science remain Clearly Visible (make sure that we--the  
123 scientists--don't cast our outsized shadows on and muddle the inner consistency of reality). How  
124 should we go about that?

125

126

## Continuing Education for Scientists

127

### 128 **Lesson I:** Intellectual mass

129 There is no difference between people and scientists, intellectually speaking (see Einstein,  
130 1936/2003, p. 23; Fodor, 2006, p. 93; Schapira, 2016; see also Colquhoun, 2006). In consciously  
131 participating in various everyday practices and abstracting the essence(s) of those practices to  
132 guide the very practices, people are not unlike scientists (see Lawvere, 2003, p. 213; see also  
133 Lawvere and Schanuel, 1997, p. xiii; Gopnik, Meltzoff, and Kuhl, 2009). Family, society, and  
134 culture didn't happen; they were made by people--made, with the inner consistency of reality (the  
135 unity of Being and the naturalness of Becoming), to last (see Lawvere, 1999, p. 411). If you don't  
136 understand what I'm saying, then it's my failure; it is this spirit of enriching our collective  
137 understanding that should guide the practice of scientific research.

138

### 139 **Lesson II:** Question science

140 Begin with Maddox (1992). Even Buddhism--a "so called" religion--demands questioning as an  
141 integral part of its everyday practice, which led neuroscience to recognize Buddhist philosophy  
142 as science of mind (Kandel et al., 2013, p. 1016). In a mystifying role-reversal, of all people, a  
143 Nature editor demands faith, speaking in tongues (belief, oracle, pronouncements; Nature  
144 Editorial, 2016), while many scientists amuse themselves with selfies (Geman and Geman,



145 2016). Science doesn't need salesmen. Science needs scientists: scientists capable of abstracting  
146 concepts needed for ever more refined alignment of reason with experience.

147

148 **Lesson III: Fine print / Legalese**

149 Surely, anyone and everyone should question science, especially COVID science, which is  
150 littered with lies (Posina, 2021). And the questioning should be spelled-out in the spirit of fine  
151 print / legalese, with its enviable precision and comprehensiveness.

152

153 Putting it all together, COVID has been the Headline News for years, but that is no reason for  
154 science to adopt journalistic standards of truth predicated on 'a lie repeated sounds true'.

155 Language and communication are not the problems plaguing COVID science; it's the absence of  
156 sincere auditing (e.g. Núñez, 2019) of the COVID data that is bankrupting science (from  
157 indispensable to disposable), not just COVID science.

158

159 Thank you very much for your attention ^^^

160

161 The floor is now open for discussion!

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