

LOoWL language  
Interview Questions

What is the role of language (spoken/written or visual) in how you have communicated with research investigators (Ingrid/Randy), artists and scholars throughout the LOoW project?

Most of our play was with (or *on*) words, beginning with the word “**emergence**”. Even in preparing my advocacy for that Theme, I quickly became mired in typical academic philosophy-semantics. Did I mean *colloquial* emergence (what a butterfly does from its pupa case) or *soft* emergence (where the whole *seems* to be greater than the sum of its parts) or *hard* emergence (where the sum exhibits real features that were *not present in any sense* in the original parts)? There were quite a few people (mostly physicists) who insisted that “hard emergence” did not exist – that the only reason we did not perceive the potential for the “emergent properties” of the whole was that we weren't yet smart enough to anticipate them. This distinction turned out to hang on whether we were talking about *explaining* the emergence *after the fact* or *predicting it in advance*. The latter is extremely rare in Physics. Probably also in Art; what do you think? Anyway... **semantics matter!**

Have you had any thoughts on your experience of communicating and sharing ideas with LOoW participants?

Yes, quite a few. (*E.g.* see above.) I learned a lot! (Others will have to speak for themselves.)

Are there any specific words or terms that you found particularly interesting in your LOoW conversations?

Other than “**emergence**”, you mean? I chewed long and hard on “**Knowing, Not Knowing & Unknowing**” and ultimately decided the middle one was my most frequent state. Physicists have to do a lot of “unknowing” (usually of “common sense” notions) in order to understand new evidence of how the world really behaves, like Quantum Mechanics. In the fundamental process of science (conjecture, test, refute; repeat until the refutation fails) we must “unknow” the refuted conjecture rather frequently; but we do not erase it from memory, lest we have to refute it again later. Occasionally a new way of looking at a problem is successful *without* refuting the old way of looking at it; such cases are profoundly edifying!

Did you have any surprises in these conversations - for example amongst different or common understandings that you weren't expecting?

I believe there was one disappointing day when I was **not** surprised. ;-)

The biggest surprise for me was the patterns that emerged from dance exercises with simple rules like, “*Pick one person and try to keep them on your left,*” or “*Pick another person and try to follow them.*” But these were nonverbal exercises.

What do you think beauty means to a physicist?

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Different things to different physicists... or even to the same physicist at different times, or under different circumstances. The most common example is a “beautiful *theory*”, which usually means an extremely simple expression that has astonishingly broad implications – sort of like a *koan*, but ideally not as difficult to grasp.

Can you give an example of beauty in physics?

The classic example is the *Dirac equation*, although it is “simple” only through the compressing of very intricate formalism into a few simple-looking symbols.

What about other words such as symmetry, abstraction or play?

**Symmetry** is what makes physical objects, theories and ideas beautiful – but only to a point. As Shinto priests understand, when making a beautiful *torii* it is essential to *spoil* its perfect symmetry somewhere in order to captivate the attention of an observer. In the same way (?) the breaking of near-perfect symmetries is what allowed this universe to have a residue of *matter* after all the matter and antimatter annihilated. That's us!

**Abstraction** is what *theorists* do; even us lowly experimentalists give it a try, but we keep our feet firmly planted in the mud of technology and engineering.

**Play** is something most physicists only do when they think no one's watching; a few understand that play is the wellspring of creativity, and display theirs unashamed.

What do you think beauty means to an artist?

Different things to different artists... or even to the same artist at different times, or under different circumstances. I have been taught (by my daughter) that “beauty” is not the only (or even necessarily *a*) goal of an artwork. My impression is that artists shy away from focusing on any concise definition of “beauty”. Good for them!

Can you give an example of beauty in art?

I *love* my daughter's hanging felt & textile compositions. For me, they are even more beautiful than her paintings; but that's largely because I enjoy textures as much as colours. (You may wish to stop by the Catriona Jeffries gallery and buy one for yourself! ;-)

What about other words such as symmetry, abstraction or play?

Much the same as in physics, but I think artists are less reluctant to *play* openly.

Have you “migrated” any language/contexts encountered in your conversations within the artistic context to your scientific context?

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I'm retired from active research (*i.e.* I don't get paid for it, and I take a break whenever I get tired, frustrated or bored) but I write a lot of “rants” online and give some courses in the VIU Elder College, so I expect all my LOoW lessons spill over into everything I think, write or do.

In going through this collaboration over several years have you made any discoveries that illuminate your way of thinking? - *i.e.* also in contrast/common to how artists think?

Yes. I've outlined some above.