

Comments on "Anything, everything and things playing roles: Three realizing principles as a contribution to a platform for understanding" by P. Lindgreen

J. J. Odell

James Odell Associates

1315 Hutchins Avenue, Ann Arbor, MI 48103 USA

Phone: +1-313-994-0844, E-mail: 71051.1733@compuserve.com

Paul Lindgreen's paper presents a simple, elegant ontology for modelling objects. He begins by asserting that anything and everything is a thing. Then, he introduces the notion of an association between things - which, in turn, is a thing. Once, the notion of things and associating things is established, a good deal of the way in which we model the world can be expressed. These include the notions of concept (object type), generalization (subtypes/supertypes, classification/instantiation, composition, delegation, meta-modeling, and so on.

The discussant, however, has the following concerns regarding the paper:

Prof. Lindgreen asserts that a thing can either be a universal thing or a particular thing. However, this is not possible in his system. For example, the concept of Oak is both a subtype of Tree (generalization) and an instance of Tree Species (classification). In the former case, Oak is a universal thing and in the latter, a particular. He should remove the distinction altogether or just change the statement to be an inclusive "or".

In a similar vein, the possible confusion between classification and generalization impacts his assertion that there is a single unified tree structure for things (excluding composition hierarchies). In fact, classification and generalization can be seen to have two distinct trees.

Prof. Lindgreen defines composition as a part/whole relationship that includes set membership. This can cause confusion when "Oak is an instance of Tree Species" is expressed in his classification/generalization hierarchy - as well as his composition hierarchy. In the composition hierarchy, however, the relationship would instead read: "Oak is a member of the Tree Species set." Many would argue that both relationships have identical semantics. This could be why some ontologists explicitly exclude classification from being a part/whole relationship.

When associations are treated as things that associate other things, infinite recursion occur. This results in insisting that everything is a thing - rather than saying that everything *may* be a thing. In this way, the associations that associate associations - and so on - do not continue to propagate beyond the need for something to be a thing.