Essentialist predicates and general term rigidity

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Is there a natural extension of the notion of rigidity to predicates that (i) applies to most predicates for natural kinds, stuffs and natural phenomena, while failing to apply to many other predicates, and (ii) can be used to derive the perceived necessity of true "identification sentences" containing these predicates (such as *All and only samples of water are samples of* H_2O)? I claim, against Scott Soames, that the notion of an essentialist predicate satisfies (i) and (ii) to the same extent that the notion of rigidity satisfies analogous conditions on proper names and on true identities containing rigid singular terms. In this abstract I can only talk about (ii).

Intuitively, a predicate is essentialist iff the property it expresses is an essential property of anything that has it. Note that *sample of water* and *sample of* H_2O are intuitively essentialist. Possible more precise, pairwise distinct versions of this, are

(E_W) A predicate P is essentialist_W iff for all worlds w and any object o, if P applies to o in w, then for all worlds w', if o exists in w' then P applies to o in w'.
(E_O) A predicate P is essentialist_O iff for all worlds w and any object o, if P applies to o in w, then for all worlds w', P applies to o in w'.

These are respectively analogous to familiar characterizations of "weak" and "obstinate" singular term rigidity:

(R_W) A singular term t designating an object o is weakly rigid (rigid_W) iff for all worlds w', if o exists in w' then t designates o in w' (and t does not designate any object other than o in worlds in which o does not exist).
(R_O) A singular term t designating an object o is obstinately rigid (rigid_O) iff for all worlds w', t designates o in w'.

The doctrine that true identities involving rigid designators are necessary corresponds to the validity of the following two argument schemata:

(STa) ***a = b*** is true;
(STb_W) The singular terms a and b are rigid_W;
____ (ST_W)
(STc') ***□(if a exists, a = b)*** is true.

(STa) ***a = b*** is true;
(STb_O) The singular terms a and b are rigid_O;
____ (ST_O)
(STc) ***□ a = b*** is true.

Soames dismisses the notion of an essentialist$_W$ predicate as a good notion of predicate rigidity on the grounds that argument schema (P_W*) is invalid:

(Pa) ***∀x (Ax ↔ Bx)*** is true;
(Pb$_W$) The predicates A and B are essentialist$_W$;
______________________________________ (P_W*)
(Pc) ***□∀x (Ax ↔ Bx)*** is true.

But the invalidity of (P_W*) is unsurprising, since the analogous (ST_W*) is equally invalid:

(STa) ***a = b*** is true;
(STb$_W$) The singular terms a and b are rigid$_W$;
______________________________________ (ST_W*)
(STc) ***□a = b*** is true.

The Kripkean claim is that (ST_W) is valid. But then it is unclear that the invalidity of (P_W*) undermines the appropriateness of the notion of an essentialist$_W$ predicate. A natural analogue of (ST_W), (P_W), is valid, given a natural possibilist reading of the quantifiers.

(Pa) ***∀x (Ax ↔ Bx)*** is true;
(Pb$_W$) The predicates A and B are essentialist$_W$;
____ (P_W)
(Pc') ***□(If everything that is actually an A or a B exists and nothing that is an A or a B fails to actually exist, ∀x(Ax ↔ Bx))*** is true.

The natural analogue of (ST_O), (P_O), is equally valid:

(Pa) ***∀x (Ax ↔ Bx)*** is true;
(Pb$_O$) The predicates A and B are essentialist$_O$;
______________________________________ (P_O)
(Pc) ***□∀x (Ax ↔ Bx)*** is true.

Arguably, the embedded antecedent in (Pc') plays a role analogous to ***a exists*** in (STc'), namely that of excluding from consideration worlds where counterexamples would arise by exploitation of cases about which there are no clear intuitions.

Further, arguably predicates for natural kinds, stuffs and natural phenomena are essentialist$_O$ or, at least, can be argued to be essentialist$_O$ exactly with the same persuasive force with which it has been argued that the proper names of natural language are rigid$_O$.