

Types vs. Subclasses

Existing type slots

- CONTROL-TYPE
 - Describes whether the control is activating or inhibitory
 - Takes predefined strings (e.g. “activation”) as values
 - Alternative representation: activation and inhibition subclasses
- INTERACTION-TYPE (proposed)
 - Describes nature of molecular interaction
 - Based on PSI property of same name
 - Takes external CV terms as values

Trade-offs

- Subclasses
 - Pro: Allow additional slot value restrictions
 - Pro: More intuitive
 - Con: Allow multiple ways to represent data
- Type slots
 - Pro: Easily extensible
 - Pro: Fewer classes
 - Pro: Fewer classes: easier to learn BioPAX
 - Con: Using external CVs still not easy in OWL

Need to create the right balance of type slots and subclasses

Proposal: Use type slots more extensively

- E.g., instead of creating subclasses for gene expression, transcription, and translation, just use the INTERACTION-TYPE slot
 - LEFT (or RIGHT) slots may be left empty
- Add a type slot to physical entities in place of e.g. protein subclasses
 - Allows generic physical entities
 - Might want to flag them as such though