Really

$$\prod(L_0\sqcup L_1)\not\asymp F\Leftrightarrow$$
$$\exists x\in\prod(L_0\sqcup L_1):x\in F\Leftrightarrow$$
$$\exists x\in\prod_{i\in\operatorname{arity}f}(\operatorname{form}f)_i\forall i\in\operatorname{arity}f:(x_i\in L_0i\cup L_1i\wedge x\in F)\Leftrightarrow$$
$$\exists x\in\prod_{i\in\operatorname{arity}f}(\operatorname{form}f)_i\forall i\in\operatorname{arity}f:((x_i\in L_0i\vee x_i\in L_1i)\wedge x\in F)\Leftrightarrow$$
$$\exists x\in\prod_{i\in\operatorname{arity}f}(\operatorname{form}f)_i\left(\exists c\in\{0,1\}^{\operatorname{arity}f}:x\in\prod_{i\in\operatorname{arity}f}L_{c(i)}i\wedge x\in F\right)\Leftrightarrow$$
$$\exists c\in\{0,1\}^{\operatorname{arity}f}:\prod_{i\in n}L_{c(i)}i\not\asymp F.$$

□

DEFINITION 1268. The *upgraded staroid generated* by an anchored relation F is the staroid $\upuparrows\uparrow^{\mathsf{Strd}}F$.

PROPOSITION 1269. $\uparrow^{\mathsf{Strd}}F=\downdownarrows\upuparrows\uparrow^{\mathsf{Strd}}F$.

PROOF. Because $\operatorname{GR}\uparrow^{\mathsf{Strd}}F$ is an upper set. □

CONJECTURE 1270. Every upgraded principal staroid is a completary staroid.

CONJECTURE 1271. Filtrators of staroids on powersets are join-closed.

17.6. Multifuncoids

DEFINITION 1272. Let $(\mathfrak{A}_i;\mathfrak{Z}_i)$ (where $i\in n$ for an index set n) be an indexed family of filtrators.

I call a *premultifuncoid sketch* f of the form $(\mathfrak{A}_i;\mathfrak{Z}_i)$ the n-indexed family α of functions where for every $i\in n$

$$\alpha_i:\prod\mathfrak{Z}|_{(\operatorname{dom}\mathfrak{A})\setminus\{i\}}\to\mathfrak{A}_i.$$

I denote $\langle f\rangle=\alpha$.FiXme: Should be $\langle f\rangle^*$.

DEFINITION 1273. A premultifuncoid sketch *on powersets* is a premultifuncoid sketch such that every $(\mathfrak{A}_i;\mathfrak{Z}_i)$ is the primary filtrator of filters on a powerset.

DEFINITION 1274. I will call a *premultifuncoid* a premultifuncoid sketch such that for every $i,j\in n$ and $L\in\prod\mathfrak{Z}$

$$L_i\not\asymp\alpha_iL|_{(\operatorname{dom}L)\setminus\{i\}}\Leftrightarrow L_j\not\asymp\alpha_jL|_{(\operatorname{dom}L)\setminus\{j\}}.\qquad(26)$$

DEFINITION 1275. Let $\mathfrak{A}$ be an indexed family of starrish posets. The prestaroid *corresponding* to a premultifuncoid f is $[f]$ defined by the formula:

$$\operatorname{form}[f]=\mathfrak{Z}\quad\text{and}\quad L\in\operatorname{GR}[f]\Leftrightarrow L_i\not\asymp\langle f\rangle_iL|_{(\operatorname{dom}L)\setminus\{i\}}.$$

PROPOSITION 1276. The prestaroid corresponding to a premultifuncoid is really a prestaroid.

PROOF. By the definition of starrish posets. □

DEFINITION 1277. I will call a *multifuncoid* a premultifuncoid to which corresponds a staroid.

DEFINITION 1278. I will call a *completary multifuncoid* a premultifuncoid to which corresponds a completary staroid.