2°. $(\operatorname{CoCompl}(g \circ f))^{-1} = f^{-1} \circ (\operatorname{CoCompl} g)^{-1}$; $\operatorname{Compl}(g \circ f)^{-1} = f^{-1} \circ \operatorname{Compl} g^{-1}$; $\operatorname{Compl}(f^{-1} \circ g^{-1}) = f^{-1} \circ \operatorname{Compl} g^{-1}$. After variable replacement we get $\operatorname{Compl}(f \circ g) = f \circ \operatorname{Compl} g$ (after the replacement f is a complete funcoid).

□

COROLLARY 952. For every composable funcoids f and g

1°. $\operatorname{Compl} f \circ \operatorname{Compl} g = \operatorname{Compl}(\operatorname{Compl} f \circ g)$.
2°. $\operatorname{CoCompl} g \circ \operatorname{CoCompl} f = \operatorname{CoCompl}(g \circ \operatorname{CoCompl} f)$.

PROPOSITION 953. For every composable funcoids f and g

1°. $\operatorname{Compl}(g \circ f) = \operatorname{Compl}(g \circ (\operatorname{Compl} f))$;
2°. $\operatorname{CoCompl}(g \circ f) = \operatorname{CoCompl}((\operatorname{CoCompl} g) \circ f)$.

PROOF.
1°.

$$\langle g \circ (\operatorname{Compl} f)\rangle^* @\{x\} = \langle g\rangle\langle \operatorname{Compl} f\rangle^* @\{x\} = \langle g\rangle\langle f\rangle^* @\{x\} = \langle g \circ f\rangle^* @\{x\}.$$

Thus $\operatorname{Compl}(g \circ (\operatorname{Compl} f)) = \operatorname{Compl}(g \circ f)$.
2°. $(\operatorname{Compl}(g \circ (\operatorname{Compl} f))^{-1} = (\operatorname{Compl}(g \circ f))^{-1}$; $\operatorname{CoCompl}(g \circ (\operatorname{Compl} f))^{-1} = \operatorname{CoCompl}(g \circ f)^{-1}$; $\operatorname{CoCompl}((\operatorname{Compl} f)^{-1} \circ g^{-1}) = \operatorname{CoCompl}(f^{-1} \circ g^{-1})$; $\operatorname{CoCompl}((\operatorname{CoCompl} f^{-1}) \circ g^{-1}) = \operatorname{CoCompl}(f^{-1} \circ g^{-1})$. After variable replacement $\operatorname{CoCompl}((\operatorname{CoCompl} g) \circ f) = \operatorname{CoCompl}(g \circ f)$.

□

THEOREM 954. The filtrator of funcoids (from a given set A to a given set B) is with co-separable core.

PROOF. Let $f, g \in \mathsf{FCD}(A, B)$ and $f \sqcup g = \top$. Then for every $X \in \mathscr{T} A$ we have

$$\langle f\rangle^* X \sqcup \langle g\rangle^* X = \top \Leftrightarrow \operatorname{Cor}\langle f\rangle^* X \sqcup \operatorname{Cor}\langle g\rangle^* X = \top \Leftrightarrow \langle \operatorname{CoCompl} f\rangle^* X \sqcup \langle \operatorname{CoCompl} g\rangle^* X = \top.$$

Thus $\langle \operatorname{CoCompl} f \sqcup \operatorname{CoCompl} g\rangle^* X = \top$;

$$f \sqcup g = \top \Rightarrow \operatorname{CoCompl} f \sqcup \operatorname{CoCompl} g = \top. \tag{14}$$

Applying the dual of the formulas (14) to the formula (14) we get:

$$f \sqcup g = \top \Rightarrow \operatorname{Compl} \operatorname{CoCompl} f \sqcup \operatorname{Compl} \operatorname{CoCompl} g = \top$$

that is $f \sqcup g = \top \Rightarrow \operatorname{Cor} f \sqcup \operatorname{Cor} g = \top$. So $\mathsf{FCD}(A, B)$ is with co-separable core. □

COROLLARY 955. The filtrator of complete funcoids is also with co-separable core.

7.15. Monovalued and injective funcoids

Following the idea of definition of monovalued morphism let's call *monovalued* such a funcoid f that $f \circ f^{-1} \sqsubseteq \operatorname{id}^{\mathsf{FCD}}_{\operatorname{im} f}$.

Similarly, I will call a funcoid injective when $f^{-1} \circ f \sqsubseteq \operatorname{id}^{\mathsf{FCD}}_{\operatorname{dom} f}$.

OBVIOUS 956. A funcoid f is:

1°. monovalued iff $f \circ f^{-1} \sqsubseteq 1^{\mathsf{FCD}}_{\operatorname{Dst} f}$;
2°. injective iff $f^{-1} \circ f \sqsubseteq 1^{\mathsf{FCD}}_{\operatorname{Src} f}$.