PROPOSITION 1130. $(\mathsf{RLD})_{\mathrm{in}} f$ is reflexive iff f is reflexive (for every endofuncoid f).

PROOF. $(\mathsf{RLD})_{\mathrm{in}} f$ is reflexive iff $(\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}} f$ if reflexive iff f is reflexive. □

OBVIOUS 1131. (FCD), $(\mathsf{RLD})_{\mathrm{in}}$, and $(\mathsf{RLD})_{\mathrm{out}}$ preserve symmetry of the argument funcoid or reloid.

PROPOSITION 1132. $a \times^{\mathsf{RLD}}_F a = \bot$ for every nontrivial ultrafilter a.

PROOF. $a \times^{\mathsf{RLD}}_F a = (\mathsf{RLD})_{\mathrm{out}}(a \times^{\mathsf{FCD}} a) = \bigsqcap^{\mathsf{RLD}} \operatorname{up}(a \times^{\mathsf{FCD}} a) \sqsubseteq 1^{\mathsf{FCD}} \sqcap (\top^{\mathsf{FCD}} \setminus 1^{\mathsf{FCD}}) = \bot^{\mathsf{FCD}}$. □

EXAMPLE 1133. There exist filters $\mathcal{A}$ and $\mathcal{B}$ such that $(\mathsf{FCD})(\mathcal{A} \times^{\mathsf{RLD}}_F \mathcal{B}) \sqsubset \mathcal{A} \times^{\mathsf{FCD}} \mathcal{B}$.

PROOF. Take $\mathcal{A} = \mathcal{B} = a$ for a nontrivial ultrafilter a. $a \times^{\mathsf{RLD}}_F a = \bot$. Thus $(\mathsf{FCD})(a \times^{\mathsf{RLD}}_F a) = \bot \sqsubset a \times^{\mathsf{FCD}} a$. □

CONJECTURE 1134. There exist filters $\mathcal{A}$ and $\mathcal{B}$ such that $(\mathsf{FCD})(\mathcal{A} \ltimes \mathcal{B}) \sqsubset \mathcal{A} \times^{\mathsf{FCD}} \mathcal{B}$.

EXAMPLE 1135. There is such a non-symmetric reloid f that $(\mathsf{FCD})f$ is symmetric.

PROOF. Take $f = ((\mathsf{RLD})_{\mathrm{in}}(=)|_{\mathbb{R}}) \sqcap (\geq)_{\mathbb{R}}$. f is non-symmetric because $f \not\asymp (>)_{\mathbb{R}}$ but $f \asymp (<)_{\mathbb{R}}$. $(\mathsf{FCD})f = (=)|_{\mathbb{R}}$ because $(=)|_{\mathbb{R}} \sqsubseteq f \sqsubseteq (\mathsf{RLD})_{\mathrm{in}}(=)|_{\mathbb{R}}$. □

PROPOSITION 1136. If $(\mathsf{RLD})_{\mathrm{in}} f$ is symmetric then endofuncoid f is symmetric.

PROOF. Suppose $(\mathsf{RLD})_{\mathrm{in}} f$ is symmetric then $f = (\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}} f$ is symmetric. □

CONJECTURE 1137. If $(\mathsf{RLD})_{\mathrm{out}} f$ is symmetric then endofuncoid f is symmetric.

PROPOSITION 1138. If f is a transitive endoreloid, then $(\mathsf{FCD})f$ is a transitive funcoid.

PROOF. $f = f \circ f$; $(\mathsf{FCD})f = (\mathsf{FCD})(f \circ f)$; $(\mathsf{FCD})f = (\mathsf{FCD})f \circ (\mathsf{FCD})f$. □

CONJECTURE 1139. There exists a non-transitive endoreloid f such that $(\mathsf{FCD})f$ is a transitive funcoid.

PROPOSITION 1140. $(\mathsf{RLD})_{\mathrm{in}} f$ is transitive iff f is transitive (for every endofuncoid f).

PROOF. $f = f \circ f \Rightarrow (\mathsf{RLD})_{\mathrm{in}} f = (\mathsf{RLD})_{\mathrm{in}}(f \circ f) \Leftrightarrow$ (theorem 1118) $\Leftrightarrow (\mathsf{RLD})_{\mathrm{in}} f = (\mathsf{RLD})_{\mathrm{in}} f \circ (\mathsf{RLD})_{\mathrm{in}} f \Rightarrow (\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}} f = (\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}} f \circ (\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}} f \Leftrightarrow f = f \circ f$. Thus $f = f \circ f \Leftrightarrow (\mathsf{RLD})_{\mathrm{in}} f \circ (\mathsf{RLD})_{\mathrm{in}} f$. □

CONJECTURE 1141.

1°. There exists such a transitive endofuncoid f, that $(\mathsf{RLD})_{\mathrm{out}} f$ is not a transitive reloid.
2°. There exists such a non-transitive endofuncoid f, that $(\mathsf{RLD})_{\mathrm{out}} f$ is transitive reloid.