Definition (Semigroup covariant action (preliminary version)). A *semigroup* ***covariant*** *action* of a semigroup $\mathbf{S}$ onto a set $\mathbf{A}$ is a map

$$\mathrm{Covact} : \mathbf{S} \times \mathbf{A} \to \mathbf{A}$$

such that, for all $a \in \mathbf{A}$,

$$\mathrm{Covact}(y, \mathrm{Covact}(x, a)) = \mathrm{Covact}(x \fatsemi_{\mathbf{S}} y, a).$$