$$(\mathbf{A} \times \mathbf{B}) \times \mathbf{C} \xrightarrow{\operatorname{as}_{\mathbf{A}, \mathbf{B}, \mathbf{C}}} \mathbf{A} \times (\mathbf{B} \times \mathbf{C})$$

$$(f \times g) \times h \downarrow \qquad \qquad \downarrow f \times (g \times h)$$

$$(\mathbf{A}' \times \mathbf{B}') \times \mathbf{C}' \xrightarrow{\operatorname{as}_{\mathbf{A}', \mathbf{B}', \mathbf{C}'}} \mathbf{A}' \times (\mathbf{B}' \times \mathbf{C}')$$

$$\langle \langle f(a), g(b) \rangle, h(c) \rangle \longmapsto \langle f(a), \langle g(b), h(c) \rangle \rangle$$