$$\langle 2, \langle 1, c \rangle \rangle$$
$$(\mathbf{A} + \mathbf{B}) + (\mathbf{C} + \mathbf{D})$$

$$\mathrm{as}_{\mathbf{A+B,C,D}} \qquad \mathrm{as}_{\mathbf{A,B,C+D}}$$

$$\langle 1, \langle 2, c \rangle \rangle \qquad ((\mathbf{A} + \mathbf{B}) + \mathbf{C}) + \mathbf{D} \qquad\qquad \mathbf{A} + (\mathbf{B} + (\mathbf{C} + \mathbf{D})) \qquad \langle 2, \langle 2, \langle 1, c \rangle \rangle \rangle$$

$$\mathrm{as}_{\mathbf{A,B,C}} + \mathrm{id}_{\mathbf{D}} \downarrow \qquad\qquad\qquad\qquad\qquad \uparrow \mathrm{id}_{\mathbf{A}} + \mathrm{as}_{\mathbf{B,C,D}}$$

$$(\mathbf{A} + (\mathbf{B} + \mathbf{C})) + \mathbf{D} \qquad \xrightarrow{\quad \mathrm{as}_{\mathbf{A,B+C,D}} \quad} \qquad \mathbf{A} + ((\mathbf{B} + \mathbf{C}) + \mathbf{D})$$

$$\langle 1, \langle 2, \langle 2, c \rangle \rangle \rangle \qquad\qquad\qquad \langle 2, \langle 1, \langle 2, c \rangle \rangle \rangle$$