

Notes on Alain Badiou's

"Mathematics of The Transcendental - Onto-Logic and Being-There" (2014):

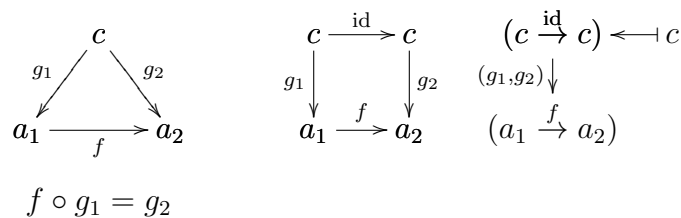
<https://www.bloomsbury.com/us/mathematics-of-the-transcendental-9781441189240/>

These notes are at:

<http://angg.twu.net/LATEX/2020badiou-mt.pdf>

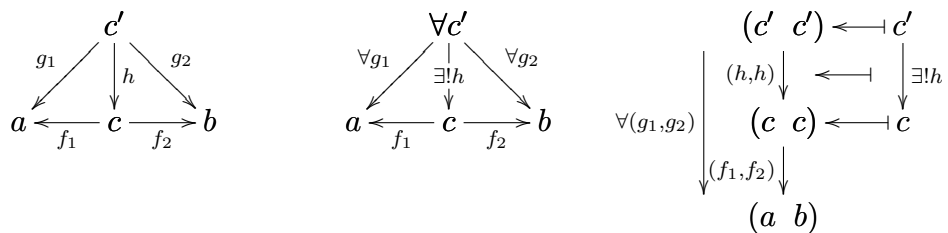
3. The size of a category

(Page 25: cone)

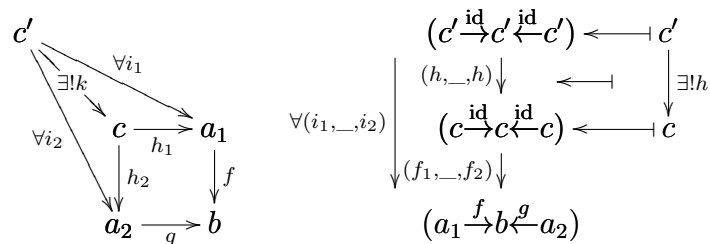


5. Some fundamental concepts

(Page 30): Limit of the diagram with two objects without arrows:



(Page 33): Pullback



8. Exponentiation

(Page 48):

$$\begin{array}{ccc}
 a & \xleftarrow{\text{pr}_a} & a \times c & \xrightarrow{\text{pr}_c} & c \\
 f \downarrow & & & & \downarrow g \\
 b & \xleftarrow{\text{pr}_b} & b \times d & \xrightarrow{\text{pr}_c} & d
 \end{array}
 \qquad
 \begin{array}{ccc}
 & & a \times c & & \\
 f \circ \text{pr}_a & \swarrow & \downarrow f \times g & \searrow & g \circ \text{pr}_c \\
 b & \xleftarrow{\text{pr}_b} & b \times d & \xrightarrow{\text{pr}_d} & d
 \end{array}
 \qquad
 f \times g := \langle f \circ \text{pr}_a, g \circ \text{pr}_c \rangle$$

(Page 49):

$$\begin{array}{ccc}
 B^A & A & B^A \times A \\
 \hat{g} \uparrow & \uparrow \text{id} & \uparrow \hat{g} \times \text{id} \\
 C & A & C \times A
 \end{array}
 \qquad
 \begin{array}{ccc}
 & & B \\
 & \searrow \text{ev} & \\
 & & \nearrow g \\
 & & C \times A
 \end{array}
 \qquad
 \begin{array}{ccc}
 C \times A & \longleftarrow & \forall C \\
 \downarrow (\times A)\hat{g} = \hat{g} \times \text{id} & \longleftarrow & \downarrow \exists! \hat{g} \\
 B^A \times A & \longleftarrow & B^A \\
 \downarrow \text{ev} & & \\
 B & &
 \end{array}$$