

# A $\pi$ -Calculus Example: Modeling a Vending Machine

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coin inserted  $\Rightarrow$  product delivered

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- Let's now add product selection:  
coin inserted  $\Rightarrow$  button pressed  $\Rightarrow$  product delivered

$$\text{coin}(\_).\text{button}(\text{sel}).\overline{\text{deliver}}(\text{sel})$$

Note that *sel* is bound by *button* and used in *deliver*.

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- Finally, let's define the user's actions as well:

$$\text{coin}(\_).\text{button}(\text{sel}).\overline{\text{deliver}}(\text{sel}) \mid \overline{\text{coin}}(\_).\overline{\text{button}}(b).\overline{\text{deliver}}(\text{product})$$

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and the whole of the vending machine can be encoded as:

$$M \mid S$$