In all models, $P_{S_2}(w|s,\hat{\phi}) \propto \exp(\lambda_{S_2} \cdot \mathbb{E}[U_{total}(w;s;\hat{\phi})])$ **where** $U_{total}(w;s;\hat{\phi})$**:**

Full model	$\phi_{inf} \cdot U_{inf}(w;s) + \phi_{soc} \cdot U_{soc}(w;s) + \phi_{pres} \cdot U_{pres}(w;s) - C(w)$
Inf & Pres	$\phi_{inf} \cdot U_{inf}(w;s) + \phi_{pres} \cdot U_{pres}(w;s) - C(w)$
Inf & Soc	$\phi_{inf} \cdot U_{inf}(w;s) + \phi_{soc} \cdot U_{soc}(w;s) - C(w)$
Soc & Pres	$\phi_{soc} \cdot U_{soc}(w;s) + \phi_{pres} \cdot U_{pres}(w;s) - C(w)$
Inf only	$\phi_{inf} \cdot U_{inf}(w;s) - C(w)$
Soc only	$\phi_{soc} \cdot U_{soc}(w;s) - C(w)$
Pres only	$\phi_{pres} \cdot U_{pres}(w;s) - C(w)$

Model utilities:

$$U_{inf}(w;s) = \ln(P_{L1}(s|w))$$

$$U_{soc}(w) = \mathbb{E}_{P_{L_0}(s|w)}[V(s)]$$

$$U_{pres}(w) = \ln(P_{L1}(\phi_{S_1} \mid w)) = \ln \int_s P_{L1}(s, \phi_{S_1} \mid w)$$