Now consider an alternative utility function. The receiver has a threshold for quality V so that she receives a payoff of 1 if $q > V$ and $A = 1$ or if $q < V$ and $A = 0$. She receives a payoff of 0 if $q < V$ and $A = 1$ or if $q > V$ and $A = 0$. The threshold for any given receiver is unknown, and distributed according to G, with density g. An alternative interpretation is that V is known, but there are many receivers receiving the same signal, and their values of V are distributed according to G. An additional alternative interpretation is that q is itself a signal of true quality. V is known, and there are multiple reviewers, whose reviews are correlated with the signal q. This means that the threshold value of q such that the actor chooses $A = 1$ or $A = 0$ is a random variable with distribution G.

Suppose that the optimal response function is $A(\widetilde{m}) = 1$ if $m^{-1}(\widetilde{m}) > V$ and $A(\widetilde{m}) = 0$ if $m^{-1}(\widetilde{m}) < V$. We can calculate the expected utility given q as comprised of three components. First, if $\widetilde{m} < m(V) - \overline{\varepsilon}$, then the receiver will always take the action $A = 0$. If $\widetilde{m} > m(V) + \overline{\varepsilon}$, then she will always take action $A = 1$. Only if $m \in [m(V) - \overline{\varepsilon}, m(V) + \overline{\varepsilon}]$ is there a question of which action she will take.

Because ε is uniform over $[-\overline{\varepsilon}, \overline{\varepsilon}]$, and because $m(q)$ is locally linear, the probability that she takes the correct action is $pr(A = 0 \mid V > q) = pr(A = 1 \mid V < q) = \frac{(V-q)m'(q)+\overline{\varepsilon}}{2\overline{\varepsilon}}$ for small ε and $V \in [q - \frac{\overline{\varepsilon}}{m'(q)}, q + \frac{\overline{\varepsilon}}{m'(q)}]$. For a given message function $m'(q)$, and a given q, the expected utility is:

$$
\begin{aligned}
E(U \quad | \quad & q, m'(q)) = I(q) \int_0^{q-\frac{\overline{\varepsilon}}{m'(q)}} g(V)dV \\
& + I(q) \int_{q-\frac{\overline{\varepsilon}}{m'(q)}}^{q} \frac{(q-V)\, m'(q) + \overline{\varepsilon}}{2\overline{\varepsilon}} g(V)dV \\
& + I(q) \int_{q}^{q+\frac{\overline{\varepsilon}}{m'(q)}} \frac{(V-q)\, m'(q) + \overline{\varepsilon}}{2\overline{\varepsilon}} g(V)dV \\
& + I(q) \int_{q+\frac{\overline{\varepsilon}}{m'(q)}}^{1} g(V)dV \\
= \quad & I(q) \left[\left(G\left(q + \frac{\overline{\varepsilon}}{m'(q)}\right) - G\left(q - \frac{\overline{\varepsilon}}{m'(q)}\right) \right) + 2 \int_{q}^{q+\frac{\overline{\varepsilon}}{m'(q)}} \frac{(V-q)\, m'(q) + \overline{\varepsilon}}{2\overline{\varepsilon}} g(V)dV \right]
\end{aligned}
$$

We used a first-order approximation for $m(q)$, so we can also use one for $g(V)$ so that $G(x) = \alpha G(x - V)$ in the neighborhood of V. Then $g(x) = g(V)$ in the neighborhood of V and we have

$$
E(U \mid q, m'(q)) = I(q) \left[\left(G\left(q + \frac{\overline{\varepsilon}}{m'(q)}\right) - G\left(q - \frac{\overline{\varepsilon}}{m'(q)}\right) \right) + \frac{1}{2} g(q)dx \right]
$$