# Errata: A Theory of Nonseparable Preferences in Survey Responses 

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# A Theory of Nonseparable Preferences in Survey Responses 

## Dean Lacy

"A Theory of Nonseparable Preferences in Survey Responses" (American Journal of Political Science 45(2):239258) contains several printing errors, including the omission of all "not equal to" and "greater than or equal to" symbols that were to appear in the text. The following are corrections:

On page 240 , the sentence in the last two lines of the first column should read:
"To define nonseparable preferences formally, let $\mathbf{J}=$ $\{1, \ldots, J\}, J \geq 2$, be a set of issues."

On page 246, in the second line after the heading "A Model of the Survey Response," the text should read:
$" \ldots \mathrm{~J}=\{1, \ldots, J\}, J \geq 2$ is a set of issues $\ldots$. $"$

Also on page 246, in the sixth line after the heading "A Model of the Survey Response," the text should read: "... $\left\{o_{j}^{1}, \ldots, o_{J}^{L}\right\}$ is a set of possible outcomes on issue $j$, $L \geq 2$..."

Also on page 246 , in the second line of the second paragraph after the heading "A Model of the Survey Response," the text should read:
". . . about $M$ issues, $M \geq 2 \ldots$ "

Also on page 246, in the fourth line of the second paragraph after the heading "A Model of the Survey Response," the text should read:
". . of responses $R_{J}=\left(r_{j}^{1}, \ldots, r_{j}^{N}\right), N \geq 2$."
Also on page 246 , in the second column, first paragraph after Assumption 2, footnote 78 should be numbered footnote 7.

On page 247, first column, the result should read:
Result: $r_{i}^{*}\left(q_{j}>q_{k} \mid \mathbf{r}_{i k}^{*}\right) \neq r_{i}^{*}\left(q_{j}<q_{k} \mid \mathbf{s}_{i k}\right)$ if and only if $i$ has nonseparable preferences for issues $j$ and $k$, and $\mathbf{r}_{i k}^{*} \neq \mathbf{s}_{i k}$.

On page 250, in footnote 15 "(Lacey 2001)" should be "(Lacy 2001)."

On page 257, Appendix B should read:
Proof: Drop $i$. For sufficiency, if $i$ 's preference for issue $j$ is nonseparable from issue or set of issues $k$, then there exists an $\mathbf{o}_{k}$ and $\mathbf{o}_{k}^{\prime}$ such that $\left(o_{j}, \mathbf{o}_{k}\right) \succ_{i}\left(o_{j}^{\prime}, \mathbf{o}_{k}\right)$ and $\left(o_{j}^{\prime}, \mathbf{o}_{k}^{\prime}\right) \succ_{i}$ ( $o_{j}, \mathbf{o}_{k}^{\prime}$ ), which, by Assumption 3, implies $\left(r_{j}, \mathbf{r}_{k}\right) \succeq_{i}\left(r_{j}^{\prime}, \mathbf{r}_{k}\right)$ and $\left(r_{j}^{\prime}, \mathbf{r}_{k}^{\prime}\right) \succ_{i}\left(r_{j}, \mathbf{r}_{k}^{\prime}\right)$. If $q_{j}>q_{k}$, then $r_{j}^{*}=r^{*}\left(q_{j} \mid \mathbf{r}_{k}^{*}\right)$. If $q_{j}<q_{k}$, then $r_{j}^{*}=r\left(q_{j} \mid \mathbf{s}_{k}\right)$. If $\mathbf{r}_{k}^{*} \neq \mathbf{s}_{k}$, then $r^{*}\left(q_{j}>q_{k} \mid \mathbf{r}_{k}^{*}\right) \neq r^{*}\left(q_{j}<q_{k} \mid \mathbf{s}_{k}\right)$. For necessity, if $\mathbf{r}_{k}^{*}=\mathbf{s}_{k}$, then $r_{i}^{*}\left(q_{j}>q_{k} \mid \mathbf{r}_{k}^{*}\right)=r_{i}^{*}\left(q_{j}<q_{k} \mid \mathbf{s}_{k}\right)$. For the second necessary condition, if $i$ 's preference for $j$ is separable from $k$, then $\left(r_{j}, \mathbf{r}_{k}\right) \succeq_{i}\left(r_{j}^{\prime}, \mathbf{r}_{k}^{\prime}\right)$ and $\left(r_{j}, \mathbf{r}_{k}^{\prime}\right) \succeq_{i}$ $\left(r_{j}^{\prime}, \mathbf{r}_{k}^{\prime}\right)$, which implies $r_{j}^{*}(\cdot)=r_{j}^{*}(\cdot)$.

In the context of the spatial model, the same result can be proved as follows:

Proof: Individual $i$ 's preferences are representable by the quadratic utility function:

$$
\begin{aligned}
U_{i}\left(o_{j} \mid o_{k}\right)= & -\left[a_{i k k}\left(o_{k}-\theta_{i k}\right)^{2}+2 a_{i j k}\left(o_{k}-\theta_{i k}\right)\left(o_{j}-\theta_{i j}\right)\right. \\
& \left.+a_{i j j}\left(o_{j}-\theta_{i j}\right)^{2}\right]
\end{aligned}
$$

Maximizing this function with respect to $o_{j}$, dropping $i$, and rearranging terms:

$$
o_{j} \left\lvert\, o_{k}=\theta_{j}-\left(\frac{a_{j k}}{a_{k k}}\right)\left(o_{k}-\theta_{k}\right)\right.
$$

which is $i$ 's constrained ideal point on issue $j$. Person $i$ 's response on $j$, conditional on her beliefs about the status quo on $k$, substituting $s_{k}$ for $o_{k}$, is:

$$
r\left(q_{j} \mid s_{k}\right)=\theta_{j}-\left(\frac{a_{j k}}{a_{j j}}\right)\left(s_{k}-\theta_{k}\right)
$$

But $i$ 's response on $j$ conditional on a previous response of $r_{k}^{*}$ to $k$, substituting $r_{k}^{*}$ for $o_{k}$, is:

$$
r\left(q_{j} \mid r_{k}^{*}\right)=\theta_{j}-\left(\frac{a_{j k}}{a_{j j}}\right)\left(r_{k}^{*}-\theta_{k}\right)
$$

If preferences for $j$ and $k$ are nonseparable, then $\left(\frac{a_{j k}}{a_{j j}}\right)$ is nonzero. If $\left(s_{k}-\theta_{k}\right) \neq\left(r_{k}^{*}-\theta_{k}\right)$ and if $\left(\frac{a_{j k}}{a_{j j}}\right) \neq 0$, then $r\left(q_{j} \mid s_{k}\right)$ $\neq r\left(q_{j} \mid r_{k}^{*}\right)$. For necessity, if the respondent's preferences are separable, then $\left(\frac{a_{j k}}{a_{j j}}\right)=0$ and $r\left(q_{j} \mid s_{k}\right)=r\left(q_{j} \mid r_{k}^{*}\right)$.
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